

NordREG hearing on “TSO’s & DSO’s roles...for enabling energy services”

Preliminary reflections on presented reports and on (related) matters to consider

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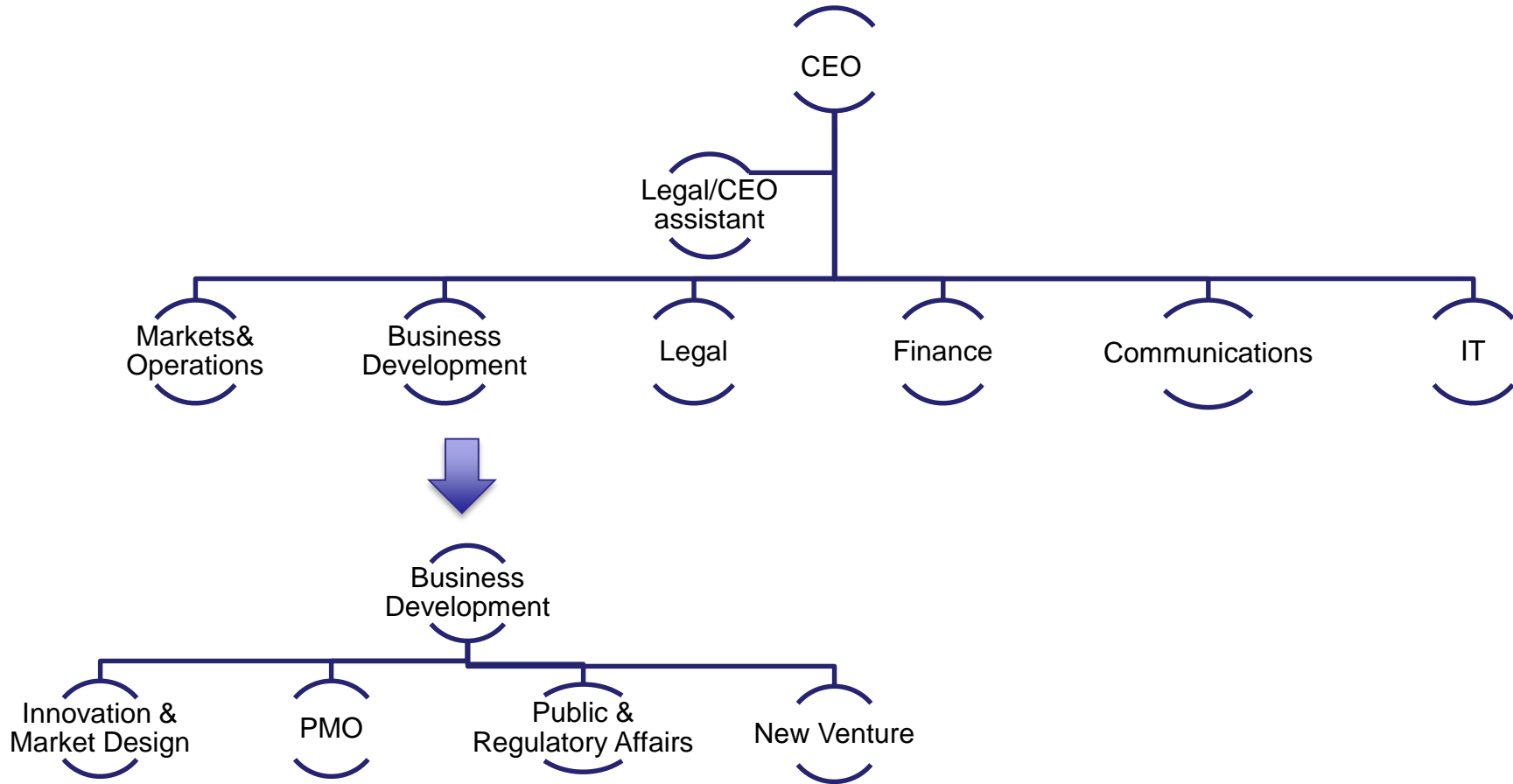
Gardemoen 8 April 2015

AGENDA

1. Basics facts about Nord Pool Spot's Markets and the recently established Innovation & Market Design Department
2. General comments on the reports and the given issues
3. More specific comments on:
 - a. «Mapping report» by Thema Comments
 - b. «Mapping report» by Pöyry Comments
 - c. «DSR and micro-production report» by Thema

NPS Organisation

Focus on Business Development



Innovation & Market Design

This fairly new department is mainly focused on gaining understanding of the following, and on that basis develop innovative business cases for NPS to capture new opportunities and needs arising from these changes:

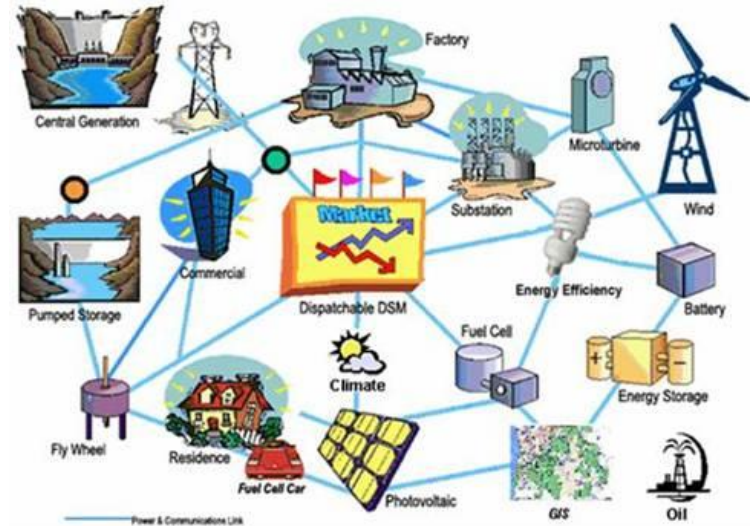
Market development key drivers

- Increasing investment in RES
- Decommission of thermal production
- Market integration (DA, ID, Balancing)
- SMART Technology, DSB
- New “players” with related technology (Google, Amazon)

Some current themes being explored

- Short Term and TSO related products
- Green Products
- Demand Side Response
- Clearing & Settlement

Wide focus on the whole energy chain...



...and other commodities

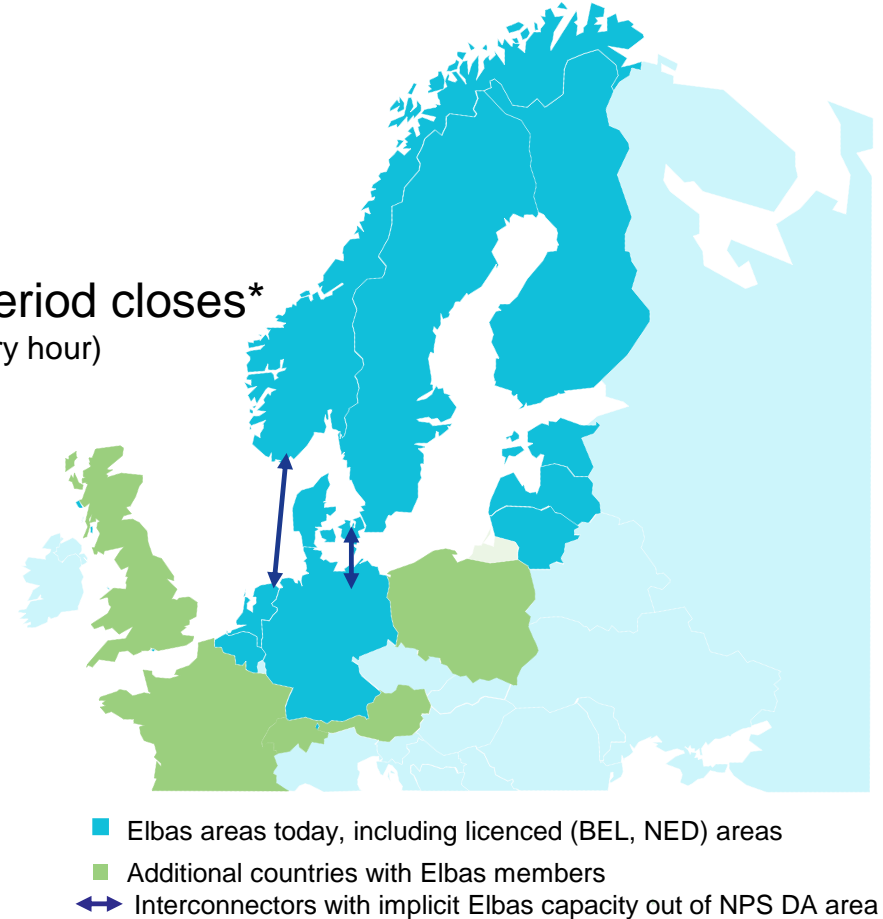
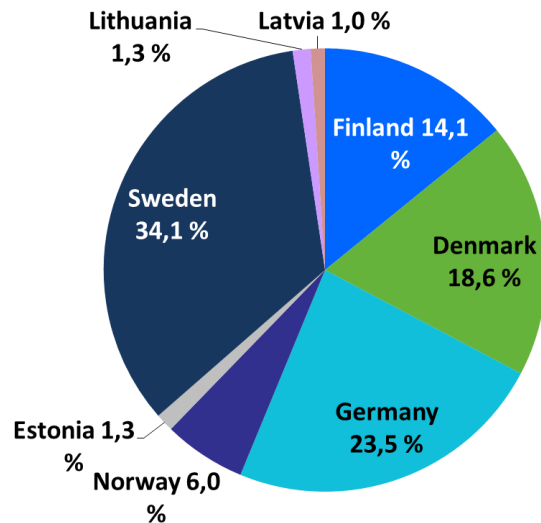


Nord Pool Spot's markets today

- Elspot Day Ahead Implicit Auction in Nordic-Baltic
 - *Turnover 2013:* 348 TWh
 - *Turnover 2014:* 361 TWh
- Elbas Intra Day Continuous Implicit Trading in Nordic-Baltic & Germany
 - *Turnover 2013:* 4.2 TWh
 - *Turnover 2014:* 4.9 TWh
- NPS (N2EX) UK Day Ahead Implicit Auction
 - *Turnover 2013:* 139 TWh
 - *Turnover 2014:* 135.5 TWh

Elbas – NPS' implicit continuous intraday market since 1999

- 145 members in 14 countries
- 75 % of all trades are cross border
- 4.9 TWh in 2014, 17 % increase
- 1/3 traded last hour before contract period closes*
(*closing of ID Elbas trading occurs 1 hour before delivery hour)

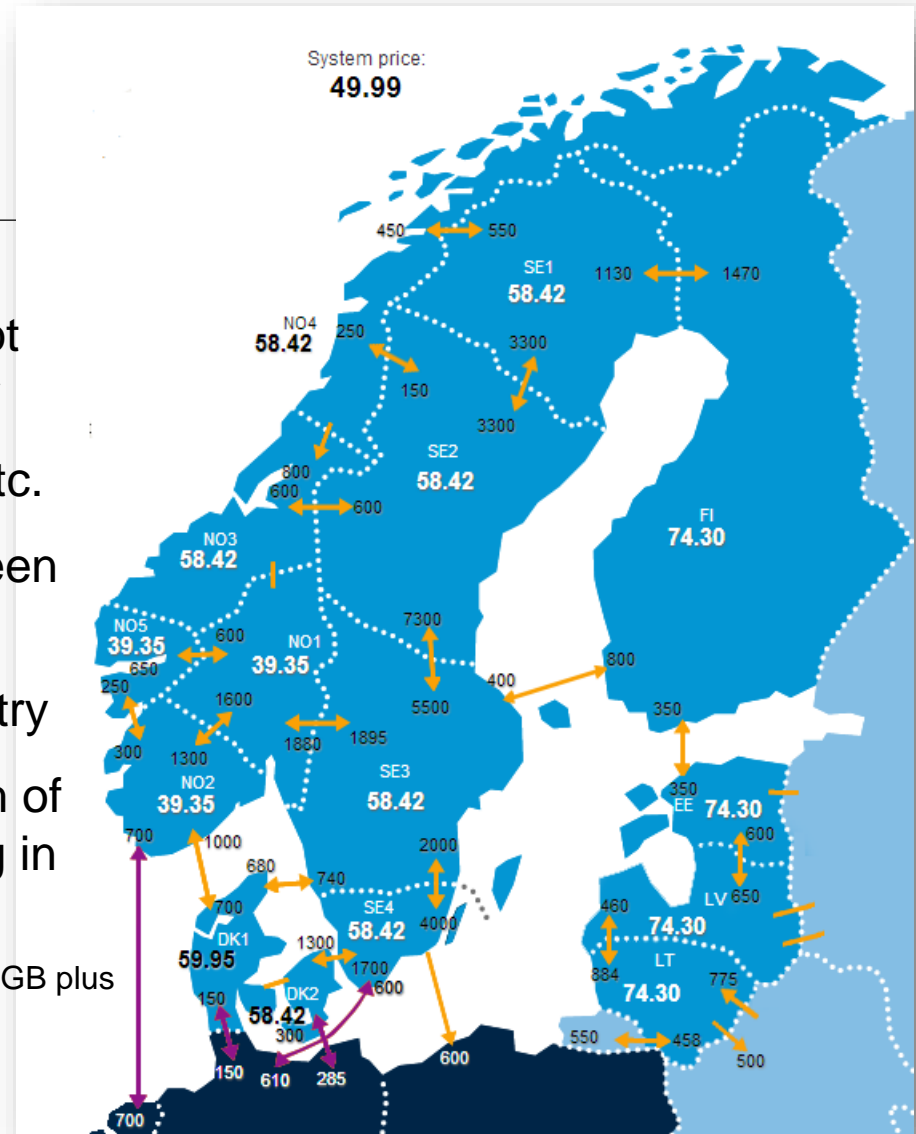


NPS Market Place

Day Ahead och Intra Day

- Nordic-Baltics is NPS markets in Elspot (DA)** and in Elbas (ID) also Germany
- Bidding Areas SE1, SE2, NO1, NO2 etc.
- DA hourly transmission capacity between Areas given by TSOs
- Varying number of Bid Areas per country
- Balance Agreement is required in each of the countries that a company is trading in

Note: **Also in GB NPS operate DA and ID market, and DA i GB plus Nordic-Baltic is a part of Multi Regional Coupling (MRC)



Progressive go-live of Day Ahead Multi-Regional Coupling (MRC)

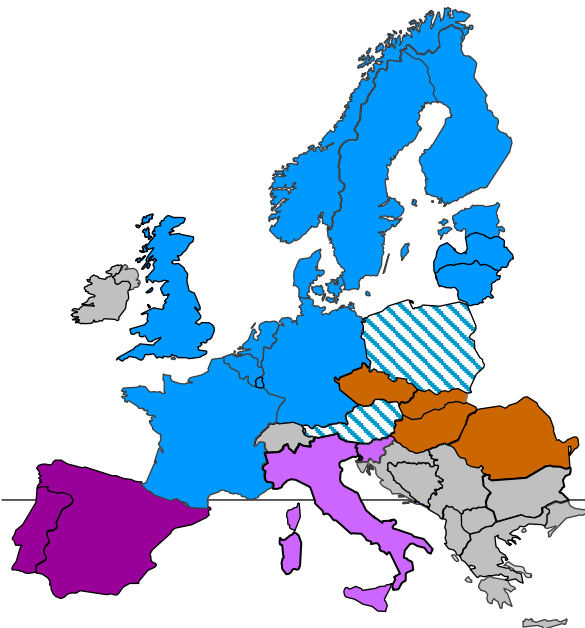
NWE went successfully live on February 4, 2014. SWE also started in common synchronized mode, using PCR (Price Coupling of Regions) systems developed by PXs.

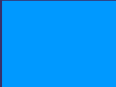
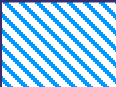



On May 13, SWE full coupling with NWE started

NWE now called MRC

NWE and SWE jointly developed a common Day Ahead Operational Agreement (DAOA)

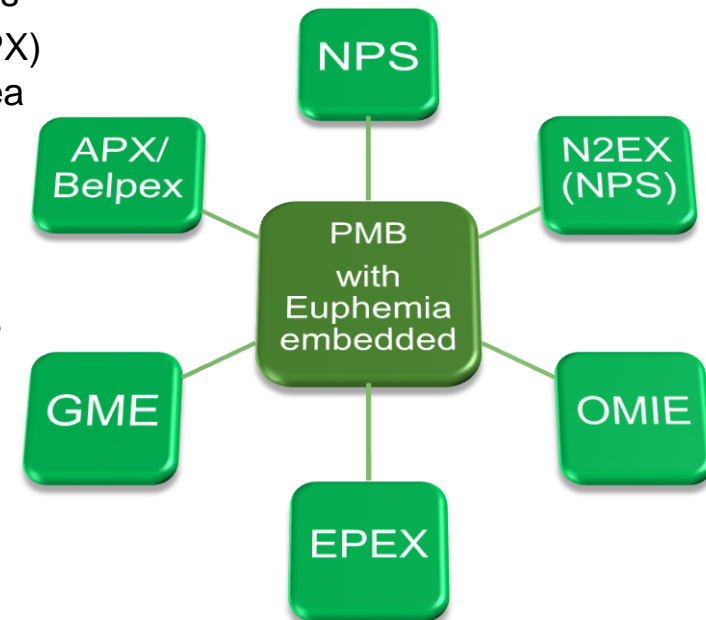
MRC has proven to be operationally robust



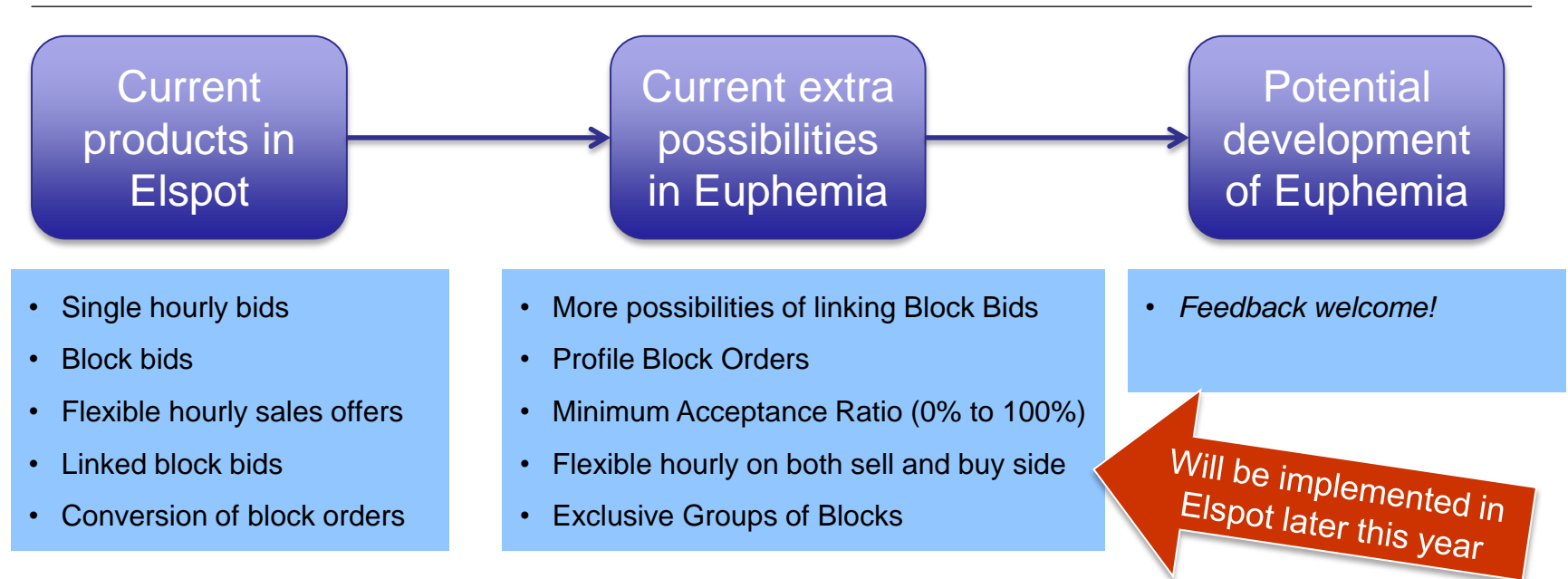
EXPANSION OF MRC		
	NWE, Baltic, GB	Feb 2014
	Austria, Poland	Partial solutions, from Feb 2014 linked to NWE (MRC)
	SWE	May 2014 – with NWE Full Coupling
	Italian Borders	Launched 24 FEB 2015 as Full Coupling with MRC
	4MMC	Separate PCR solution, NOV 2014 (later to join MRC)

MRC/PCR structure in simplified form

- Input data:
 - Available DA transmission capacity between all Bid Areas
 - All buy-/sell orders per Bid Area and Power Exchange (PX) fully anonymised and hourly bids aggregated per Bid Area
- Price calculation system:
 - PCR Euphemia Algorithm (available to all PCR PXs)
 - PCR Matcher-Broker (PMB) for data communication between systems and for handling of calculation process
- Output data:
 - Area Prices
 - Net position per Bid Area and spot flow between Areas
- Some key benefits:
 - Optimization of DA spot power flow between all countries (Areas) involved in MRC, and based on efficient activation of orders (buy/sell) per Bid Area (Zone)
 - Is a major step towards a pan-Europe (EC IEM) Day Ahead which is an EC goal and a requirement in EC Regulation



Elspot DA order type (product) development



Elspot DA product structure gives good opportunity to reflect growing DSR and RES, and complex and dynamic portfolios! It also paves the way for participants to also become active in ID Elbas trading even closer to delivery.

General comments on the reports

- **Reports give good overview of current/near-future status, but:**
- **Missing vision and target for "Nordic" Data-Hub**
 - Is likely a key factor to realize targeted "Nordic integrated retail market"
 - With Nordic Balance Settlement (NBS) put in place in 2016 (FIN, SWE, NOR) the integration of Nordic wholesale and retail markets would be further strengthened if Data-Hubs were also merged or at minimum made fully compatible across borders
- **Lack focus on key needs to in the future further strengthen, the links between wholesale and retail markets**
 - Historically the gradually more liquid, CB integrated, and transparent organized wholesale markets have enabled supplier/retailer/consumer competition, market and system efficiency, and established references for retail, end consumer prices
 - DSR and RES, including small scale production flexibility, is key to incorporate as much as possible in organized wholesale DA/ID trading
- **Lack definition of ESCOs, what sets them apart from Suppliers, and ensurance of independence for gaining access to Data-Hub**

«Mapping report» by Thema – comments:

- **Some concerns about "delayed" implementation of Smart Metering in some countries since it acts as one barrier for common Nordic Retail market, like exist for Wholesale**
 - For ex.difficult to establish incentives for (smaller) end consumers to provide "DSR" without hourly metering in place, and likewise Energy Service providers ("ESCOs") and Suppliers may have less opportunity to be active in new domiciles without that in place

- **With Danish Data-Hub now in place and decision to build the Norwegian ELHUB, why not seek to align a Nordic Data-Hub solution, or at least full compatibility between National Hubs?**
 - Can that be a target as such, and also with a timeline, set by NRAs?

«Mapping report» by Pöyry – comments:

- **While both EC Electricity Directive and national guidelines/laws state that DSOs are not allowed to discriminate between system users or Suppliers this report discusses risks of it occurring anyway**
 - If it is against the law then should it not then simply be monitored and abuses penalized by relevant authority? Is it more difficult then that?
 - The fact that many grid companies (DSOs) are vertically integrated with Supply (production & retail sales) still prohibit DSOs to act on behalf of "own" Supply company, or is that interpretation of national and EC laws wrong?
- **The issue of billing regimes and whom is to perform it:**
 - Whatever model is in the law (or is set to be applied), it seems key for enhanced Supplier competition and DSR development that the customer can separately see the kWh price (fixed/variable) for electricity use

«DSR and micro-production report» by Thema – comments:

- **Clearer rules per country for obligation to give market access for micro-production (and to pay for its' injection), and more harmonization between countries would be good**
 - Key focus should be to make it easier to build-up micro-production, but also to ensure it is done cost efficient and within system security limits
- **Key that as much as possible of DSR can be aggregated, remotely controlled, and not least be reflected IN and not AFTER the price formation Day Ahead (and Intra Day)**
 - That way DSR enhances supply/demand competition, reduce risks for extreme price spikes, and contribute to system security in planning stage instead of forcing ever larger reserves in real-time Ancillary Services

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