

# MARI

Manually Activated Reserves Initiative

Presented at BSG meeting 28/9-2017

By Martin Møller



## MARI Project Current Status

---

- Goal - creation of an European platform for mFRR
- TSOs of the cooperation started working on the principles of an mFRR platform already in 2016

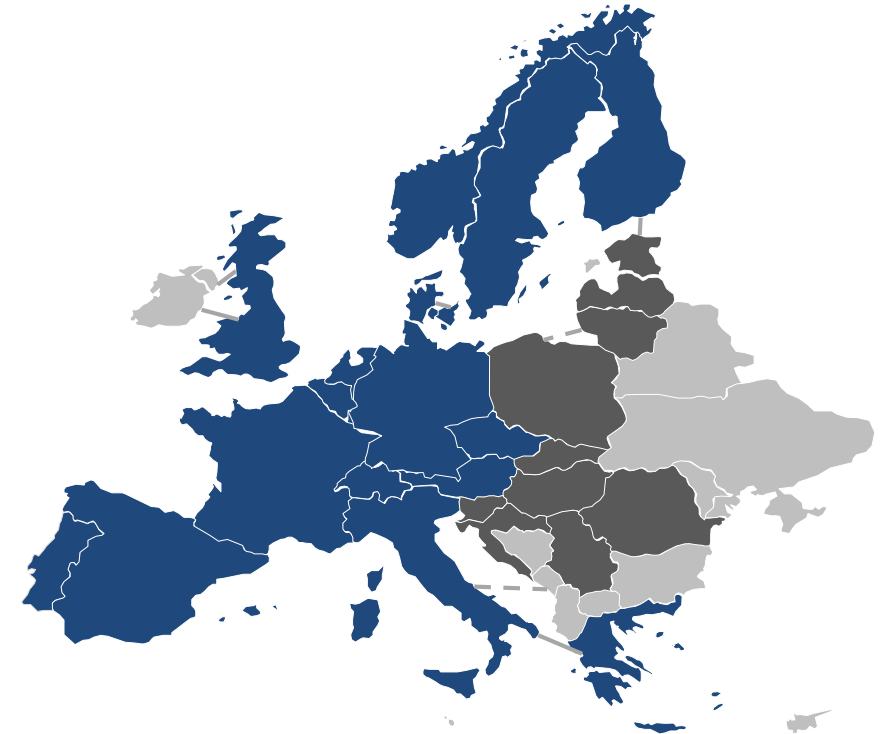
### RECENT DEVELOPMENT:

- All TSOs approves the MARI project as the European implementation project for mFRR in line with the GLEB on 7 September 2017
- All TSOs bound by GLEB are invited to join the project

## Involved Parties – TSOs only

MEMBERS	
AUSTRIA	APC
BELGIUM	elias
CZECH REPUBLIC	čeps
DENMARK	ENERGINET
FINLAND	FINGRID
FRANCE	Rte
GERMANY	50hertz amprion tennet TRÄNSNET BW
GREECE	ADMHE
UNITED KINGDOM	nationalgrid
ITALY	Terna Rete Italia
NETHERLAND	tennet
NORWAY	Statnett
PORTUGAL	REN
SPAIN	RED ELÉCTRICA DE ESPAÑA
SWEDEN	SVENSKA KRAFTNÄT
SWITZERLAND	swissgrid

OBSERVERS	
ESTONIA	elering
HUNGARY	MAVIR
LATVIA	AST
LITHUANIA	Litgrid
SERBIA	EMC
SLOVAKIA	SPP
SLOVENIA	ELES
CROATIA	HOPS
POLAND	PSE
ROMANIA	Transelectrica



## Involvement all TSOs bound by the GLEB

Responsible for making sure that the Framework Guidelines are properly implemented

ENTSO -E

Responsible for making sure that the Guideline on Electricity Balancing is properly implemented

Working Group  
Ancillary Services

Balancing Stakeholder  
Group

MARI

Responsible for making sure that the European mFRR Platform is properly implemented according to GLEB

Project Team  
mFRR

Active communication

Work division agreed

## Approach to External Stakeholders

- The involvement and feedback from the stakeholders is of utmost importance
- We plan a 3-step approach in communication with the stakeholders

### Stakeholder workshop

Date: 4 September 2017

Purpose: Introduce the project and provide information in a concise manner

### MARI Stakeholders Feedback Collection

Date: November, December 2017

Purpose: Provision of a design report for external purposes and collection of feedback through an associated questionnaire

### Public Consultation according to GLEB

Date: May, June 2018

Purpose: Standard public consultation of the finalized design proposal

Regular Reports to Balancing Stakeholder Group

No delays in the project due to the stakeholders' feedback

Creation of a liquid platform

## Approach to External Stakeholders

---

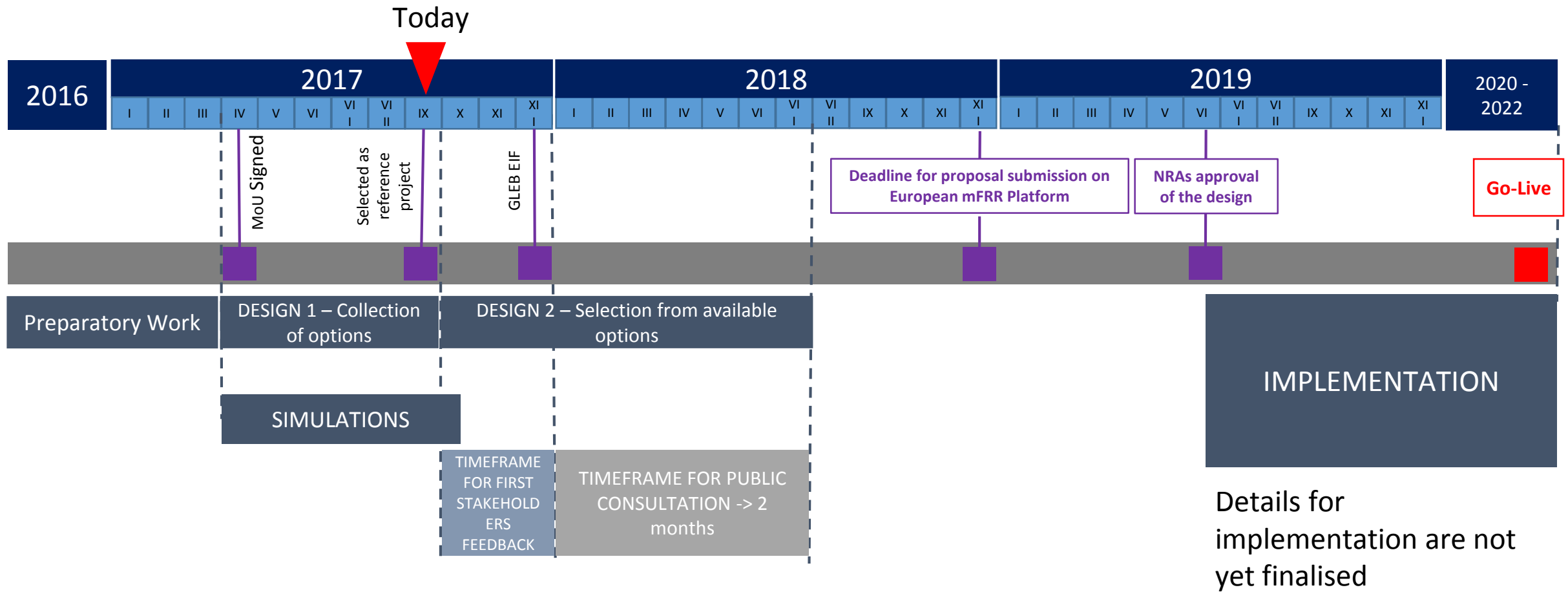
- First stakeholder workshop took place on 4 September 2017
- The feedback is being carefully considered
- Further feedback will be collected by means of a questionnaire available at the ENTSO-E web page

## Communication with the NRAs

---

- MARI engages in discussion with NRAs in order to communicate the progress of the mFRR design preparation, and to gradually align and understand the challenges
- Regular Implementation Group meeting with the MARI Project and the NRA's will be held. Kick-off meeting between MARI and concerned NRA's took place end of August 2017
- The NRA's have organised themselves with a SPOC dedicated to this Project

# Project Timeline according to the Balancing Guideline



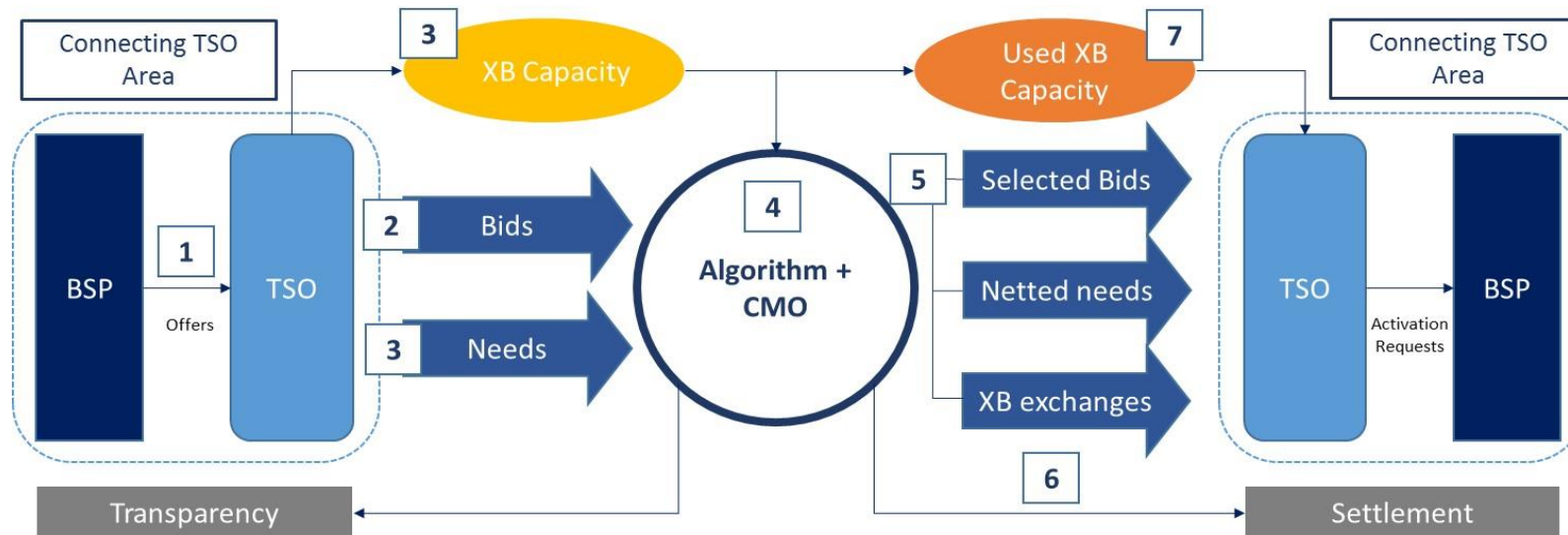
# Design Roadmap Milestones

---

MILESTONE		DATE
1	MC Decision on the Implementation Project	7 September 2017
2	Design 1 - Identification of options finalized	30 September 2017
3	Design 2 - Selection from options and proposal finalized	30 April 2018
4	Public Consultation Conducted	30 June 2018
5	Submission of the design to NRAs	1 December 2018
6	NRAs Approval	1 June 2019
7	Implementation	2019-2022



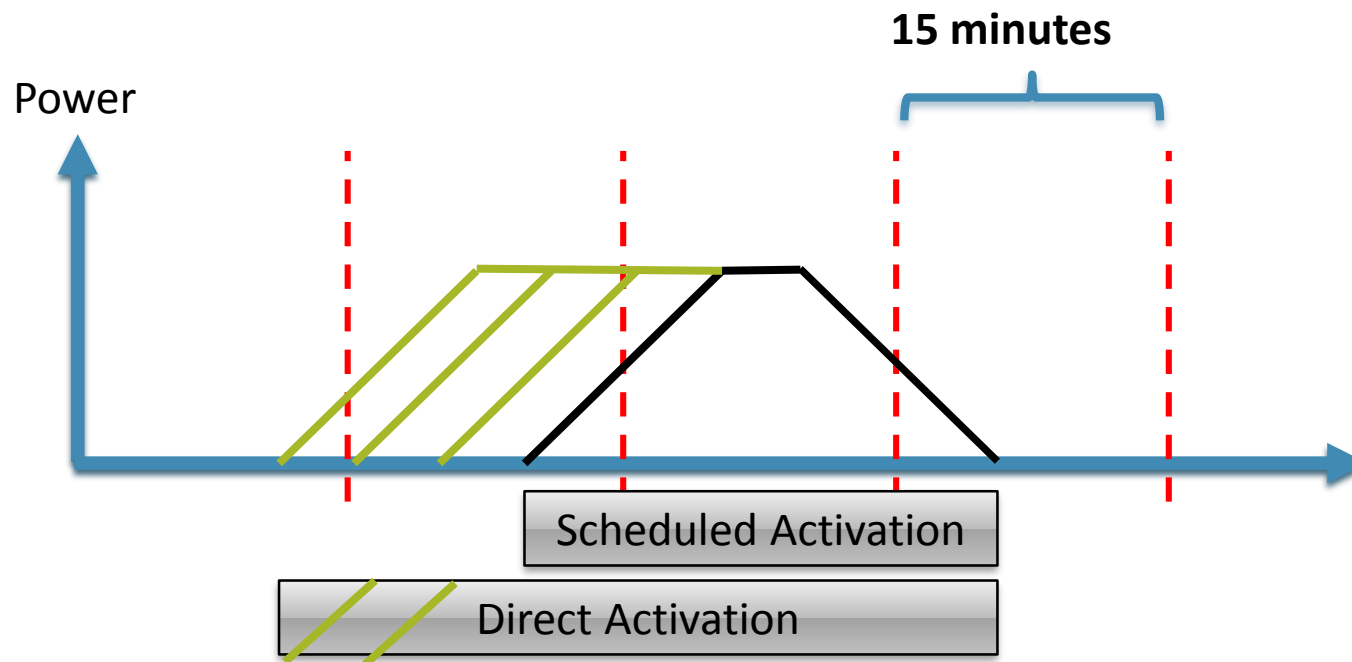
# General Process



1. TSOs receive offers from BSPs in local market balance area
2. Forward of coherent mFRR balancing products to mFRR platform
3. TSOs communicate their balancing needs and the available XB transmission capacities (ATC)
4. Optimization of the clearing of balancing needs against BSPs' offers
5. Communication of the accepted offers, satisfied needs and prices
6. Calculation of the commercial flows between market balancing areas and settlement of the expenditure and revenues between TSOs
7. The resulting XB schedules and remaining ATC are sent to the TSOs

## The Product to be handled by the MARI Platform

- Time To Restore Frequency should be harmonized at 15 minutes throughout Europe (System Operation Guideline)
- TSO's need a product with a full activation time of 15 minutes or less; exact requirement still to be defined



- **Scheduled activations each fifteen minutes. BSP always activated 7.5 minutes before the start of an ISP**
- **Direct activation at any point in time**
- **All products ends at the end of an ISP**

## Full Activation Time (FAT) definition

---

- **Context: GLSO (System Operation Guideline) requirements**
  - To manage the system while respecting frequency quality targets, TTRF (Time To Restore Frequency) should be harmonized at 15 minutes throughout Europe.
- **Implications: for mFRR, at least 2 possible interpretations:**
  - $FAT_{mFRR} \leq 15'$
  - $FAT_{mFRR} < 15'$
- **Consequences for MARI: at least two options in consideration**
  - $FAT_{mFRR} = 15'$
  - $FAT_{mFRR} = 12.5'$
- **Conclusion: MARI will follow the recommendation from ENTSO-E and put forward the possible options as soon as possible to obtain the view of the stakeholders.**

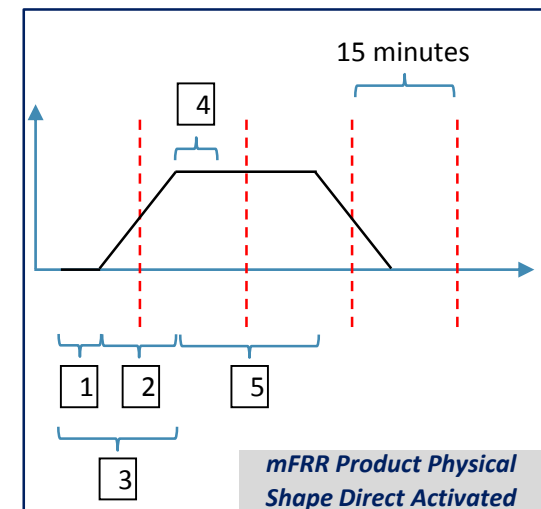
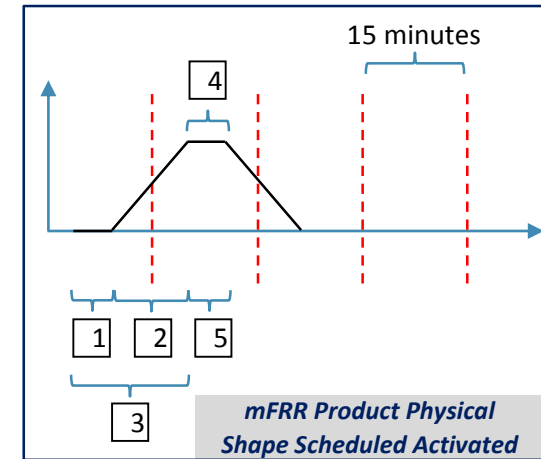
# Product Properties

## mFRR Product Properties are based on:

- Key characteristics of standard products from GLEB (Art. 25)
- Further properties

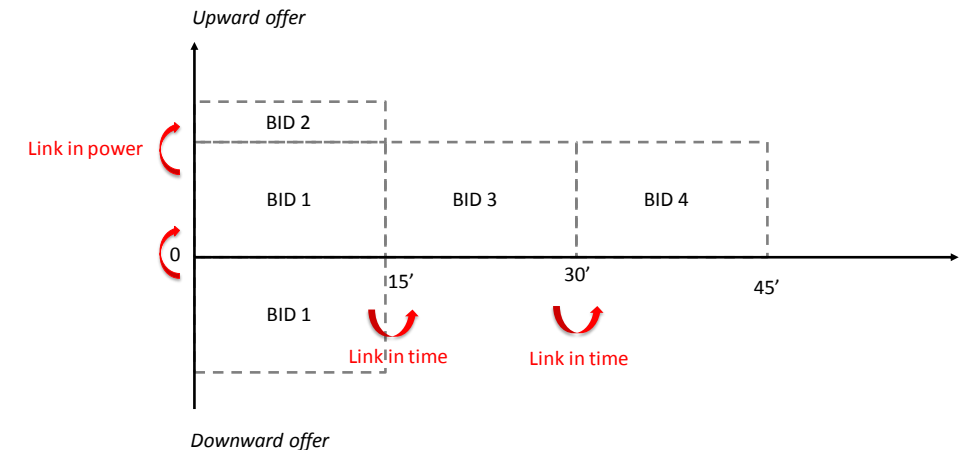
Figures legend	Properties	Expected Shape	Accepted Shape
1	Preparation Period	2.5'	<b>0-12.5'</b> (Exact accepted shape set by the local TSOs)
2	Ramping Period	10'	<b>0-12.5'</b> (Exact accepted shape set by the local TSOs)
3	Full Activation Time		<b>12.5'</b>
4	Minimum duration of delivery period	5' (scheduled and direct activation)	(Exact accepted shape set by the local TSOs)
5	Maximum duration of delivery period	20' (longest direct activation) 5' (longest scheduled activation)	(Exact accepted shape set by the local TSOs)
-	Minimum quantity		<b>1 MW</b>
-	Maximum quantity		<b>9999 MW</b>
-	Deactivation period		<b>10'</b>
-	Validity period		<b>To be analyzed in the next phase of the project</b>
-	Mode of activation		<b>Manual</b>

NOTE: Table given with the assumption of a FAT equal to 12.5min



## Specific Bid Properties - Linking Bids

- In general, bids can be linked in power and in time for economical reasons.
  - Linking of bids in time by BSPs is not feasible because optimization is done per 15' period and not over several periods.
  - Linking in power is feasible and economically advantageous for both BSPs and TSOs. However, not all possible links will be allowed and there will be limits to the possibilities (e.g. max number of linked bids).
  - Different options will be investigated:
    - Linked bid orders
    - Exclusive group orders
    - ...



### Note:

There exists a need to link bids in time, i.e. over different periods, for technical reasons. A methodology for this will be developed

E.g.: a scheduled activated bid in ISPO that is also offered for ISP1 cannot be direct activated at the start of ISP1. Since GCT for BSPs for ISP1 will fall after the clearing of scheduled bids for ISPO, this information must be known to the platform.

## Specific Bid Properties - Indivisible Bids - Maximum Bid Size

- **Current Situation:** Most of the TSOs in the cooperation allow indivisible bids. Nevertheless, the maximum bid size varies from a minimum of 25 MW (Germany) to a maximum of approximately 300 MW (Portugal).
- **Allow indivisible bids:** Since most TSOs allow indivisible bids, this should be allowed in the MARI cooperation as well.
- **Maximum bid size:** Different criteria have to be considered in order to determine the maximum bid size

Advantages of small maximum bid size	Disadvantages of both options	Advantages of big maximum bid size
Avoid market abuse	Implementation effort	Liquidity
Smaller deviations from need	Changes to current market design	
Incentives for BSPs to be flexible		

## TSO-BSP Rules Harmonization – Working Assumption

---

- The TSO-BSP Rules harmonization is a very complex topic as evident from the experience gained in Germany and Nordic countries. This complexity requires extensive work and involvement of the members, which would most likely delay the implementation of the platform.
- The TSOs prefer to focus on the creation of the European mFRR platform, which will be followed by the concentrated work on the TSO-BSP rules harmonization.
- The “correct” level of TSO-BSP harmonization rules is likely to materialize when the market is developed and BSPs will raise their requirements based on their experience with the new platform, by this we avoid to over harmonize
- We assume that BSPs favor creation of European market over full harmonization of TSO-BSP rules

Thank you for your attention!

For further details please contact:

Steering Committee Chairman

Martin Høgh Møller  
mhm@energinet.dk

Technical Working Group Conveners

Aurelien Peyrac	Markus Speckmann
aurelien.peyrac@rte-france.com	Markus.speckmann@amprion.net