













Workshop on System Services from Wind power

France Energie Eolienne

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"Provision of frequency response services by wind"

A study by Pöyry for France Energie Eolienne

- Objectives of the study:
 - Identify & assess the barriers to (future) participation of Wind energy to frequency balancing services
 - Technical barriers?
 - Economic barriers?
 - Regulatory barriers?
 - Submit recommendations to ease wind energy contribution to the different balancing mechanisms:
 - Frequency Containment Reserve (FCR Primary Reserve)
 - automatic Frequency Restoration Reserve (aFRR Secondary reserve)
 - manual Frequency Restoration Reserve (mFRR Tertiary reserve & balancing mechanism)
 - Replacement Reserve (RR Tertiary reserve & balancing mechanism)
 - A large panel of participants
 - Several workshops with members of FEE (producers, turbines manufacturers, aggregators) during 6 months
 - Questions have been addressed via forms to different market players
 - RTE (TSO) and ENEDIS (DSO) have been met as well







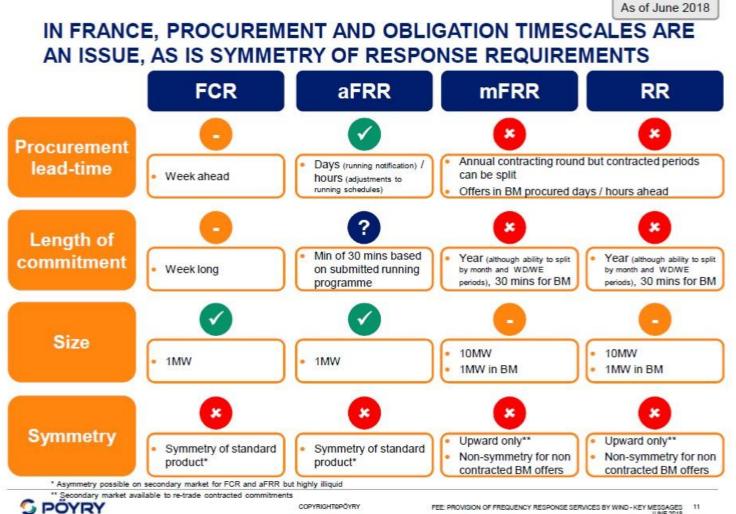








State of play of French rules for frequency response services









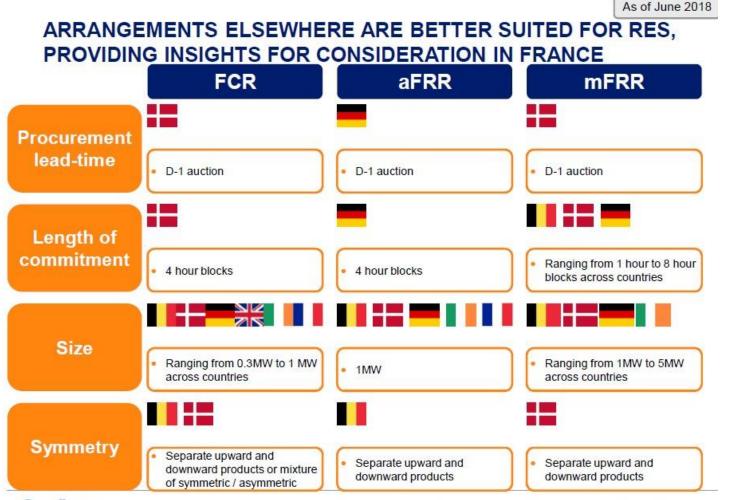








"Wind friendly" reserve arrangements: best practices in Europe



Benchmark has been made among the following countries:

- Belgium
- Denmark
- Germany
- Ireland
- Great Britain















Cross-border initiatives should reduce some barriers

As of June 2018 BUT SOME BARRIERS LINKED TO TIMESCALES ARE BEING REDUCED BY CROSS BORDER INITIATIVES **aFRR mFRR** RR **FCR** (MARI) (TERRE) (PICASSO) **Procurement** Gate Closure of Gate Closure of 55lead-time 8am D-1 better than <=60mins before real <=30 minutes 60mins before real current time (uncontracted) Length of Validity Period to be commitment 4 hour products more Validity Period of 15 Defined by BSP within considered in next workable mins or max 1 hour 15-60min phase* Size 1MW 1MW 1MW 1MW Symmetry Symmetry of standard Non-symmetry via Symmetry of standard product (but views to Upward only Balancing Mechanism (TERRE is symmetric) be sought in future) * Minimum provision is for 5 mins but not maximum duration agreed to date















Barriers can be removed in changing market & regulatory rules

MODIFYING PRODUCT CHARACTERISTICS AND PROCUREMENT ARE A MUST TO REDUCE BARRIERS. IMPROVING INTERACTION WITH RES SUPPORT WOULD ALSO HELP EARLY PARTICIPATION

- Allow separate upward and downward products
- Allowing asymmetric products will <u>increase and diversify the pool of providers</u> available to TSOs to secure reserve requirements, facilitating security of supply and more efficient procurement of services
- Reduces reliance on illiquid secondary market and de facto need for aggregation (improved transparency and liquidity of secondary market also helpful)
- Make capacity procurement as close to real time as possible (day-ahead or preferably later)
- . Day (hour)-ahead wind forecasts are accurate enough for producers to commit to frequency reserve service provision (when wind conditions are favourable)
- 2. Shorter procurement timescales <u>increase the pool of potential resource from</u>
 which TSOs can undertake efficient procurement
- Shorten duration commitment
- Shorter block (1, 2, 4, 6 hour) commitments will increase compatibility with wind (and more generally intermittent renewables) generation patterns
- 2. Shorter commitment periods increase the pool of potential resource from which TSOs can undertake efficient procurement
- Explore
 accommodation of
 frequency service
 provision in RES
 support¹
- 1. Address participation constraints (regulatory, economic) linked to RES support
- 2. Allow for remuneration of TSO instructed reserve provision through <u>adjusting basis</u> <u>for market premium payment</u> (avoids opportunity cost bidding)
- 3. Ensuring RES (like other technologies) is no worse off if providing reserve

MARKET RULES

REGULATORY RULE

In case of a downward participation in France, the market premium is lost for RES under support scheme → Opportunity Cost!

1. This issue is common, with support arrangements not taking account of impacts of reserve provision on basis for support payment.















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END OF PRESENTATION

THANK YOU FOR YOUR ATTENTION!

QUESTIONS?