PICASSO (aFRR) – Stakeholder Workshop

Thursday, 5 October 2017 from 10:00 to 16:00

Berlin

Agenda

	SUBJECT	WHO	TIMING
1	**Welcome**	Esther & Benjamin	10:00 - 10:15
2	**INTRO – GLEB with aFRR focus** • Merit-Order-Based-Activation & CMOL • European aFRR platform • TSO-TSO-Model & Electricity Balancing Guideline (EB GL) Q & A	Julien	10:15 – 10:45
3	**INTRO - PICASSO as a project** • Project description • Objective & Principles • Internal organization & Overall timeline • Governance & Interaction with ENTSO-E Q & A	Benjamin	10:45 - 11:15
4	**DESIGN - Harmonizing aFRR markets (Part 1)** • Standard product (FAT & bids) • Non-contracted bids • BEGCT Q & A	Markus Esther	11:15 – 12:30
	Lunch		
4	**DESIGN - Harmonizing aFRR markets (Part 2)** • Pricing • Other harmonization topics Q & A	Paul & Esther Pieter-Jan	13:30 – 14:45
5	**DESIGN - Integrating aFRR markets** • AOF & TSO-TSO exchange • Cross-zonal capacity and congestion management • Cost-Benefit-Analysis (CBA) Q & A	Thomas Julian	14:45 – 15:45
6	**Next steps (Timeline & Phase 1)**	Julien	15:45 – 16:00

Note: No further questions received after stakeholder workshop.

Remark: Questions and views are mentioned in the sequence shared during the workshop.

Disclaimer: This document is released on behalf of PICASSO TSOs only for the purpose of documentation of the stakeholder workshop in order to foster a common understanding and does not in any case represent a firm, binding or definitive position on the content.

1. Welcome

Below mentioned questions and views are shared during the meeting:

- Several stakeholders: List of abbreviations would be appreciated.

2. INTRO – Guideline on Electricity Balancing (GLEB) with aFRR focus

Below mentioned questions and views are shared during the meeting and clustered by chapter:

Merit-Order-Based-Activation & CMOL

- Energie-Nederland represented by Ruud Otter (The Netherlands): How do you address interactions between BSPs and BRPs?
    - Answer: BSP-BRP-Interaction is considered within several investigations addressed later in the workshop, e.g. Balancing Energy Pricing Period (BEPP). Harmonization of imbalance settlement process is out of scope for PICASSO.
- [Webcast] Fortum Power and Heat Oy represented by Jussi Karttunen (Finland): How much time is needed between the moment when TSO knows the aFRR demand and when BSP receives the signal, after TSO-Platform communication and processing of AOF? In MARI project estimated times are “Communication TSO-Platform = 0.5’”, “Processing time platform (algorithm) = 1’” and “Communication Platform-TSO = 1’”
    - Answer: The different process steps between submission of bid and start of delivery period is currently under investigation. Especially communication between TSOs needs to be clarified. Stakeholders will be informed. In general, since aFRR is a real-time process, high requirements are present (eg. 2s for iGCC latency, processing time max +/- 8s & delay of local controllers to be accounted for.

European aFRR platform

- AEGGSI represented by Marco Pasquadibisceglie (Italy): Would it be possible to merge governance processes of PICASSO and MARI?
    - Answer: In regards of governance and all TSOs proposal required by GLEB, processes of PICASSO and MARI are distinguished. Interaction between both projects is mostly on technical provisions and IT implementation.
- AEGGSI represented by Marco Pasquadibisceglie (Italy): In regards of changing from pro-rata to merit-order activation, is the aFRR Target Platform taking into account different import and export limits of bidding zones?
    - Answer: Yes. Two countries within PICASSO are currently using pro-rata activation and will implement merit-order activation with aFRR Target Platform. Import and export limits of bidding zones (e.g. ATC) are handled by the Activation Optimization Function (AOF), explained later in the workshop.
- ENDESA represented by Eloisa Porras Muñoz (Spain): Is merit-order activation required according to GLEB?
    - Answer: Merit-order activation is required according to GLEB. At least this is PICASSO’s interpretation of GLEB. Unless proven by an all TSO CBA-analysis, then a deviation of implementation of merit order activation is possible, but the latter is not the starting point. Cfr. GLEB Whereas (11).

3. INTRO - PICASSO as a project

- Südvolt GmbH represented by Leo Pilgerstorfer (Germany): When is go-live of aFRR Target Platform planned?
    - Answer: According to GLEB, go-live of aFRR Target Platform needs to be four years after entry into force (EiF) of GLEB. Within two years after go-live of aFRR Target Platform, all TSOs need to be connected to aFRR Target Platform. Detailed implementation timeline is under development and stakeholders will be informed.
- Eurelectric represented by Ioannis Retsoulis (EU): Is the risk of two conflicting Intermediate Versions handled?
    - Answer: PICASSO MoU foresees close alignment between Intermediate Versions.
- Several stakeholders welcome a joint stakeholder workshop between PICASSO and MARI.
    - Answer: Public consultations for PICASSO and MARI are planned simultaneously. Stakeholder's request for joint workshop among PICASSO and MARI is acknowledged and will be discussed among TSOs and ENTSO-E.

4. DESIGN - Harmonizing aFRR markets

Below mentioned questions and views are shared during the meeting and clustered by chapter:

Standard product (FAT & bids)

Full Activation Time (FAT)

- Energie-Nederland represented by Ruud Otter (The Netherlands): Harmonization is most important requirement from BSPs, e.g. ramping approach vs. FAT-approach. The question is what is a sufficient level (regarding level of harminaztion) and where do TSO see a decrease in social welfare coming from?
    - Answers: Harmonization might be costly and might result in decreased social welfare. TSOs sees harmonization as described in the standard product as sufficient.
- Energie-Nederland represented by Ruud Otter (The Netherlands): Question related to the system activation time change because of harmonizing the FATs of PICASSO countries.
    - Answer: As the FAT is not transferred into a minimum ramp-rate, this is not the case.
- Vattenfall represented by Daniel Nordgren (Germany): How often will the set-point be changed?
    - Answer: This depends on the national situation. From an operational point of view, different LFC controller duration is not required to be harmonized among the particpating TSO. Additionnally, for both ramping & FAT approach the setpoints are changed each few seconds because it's always required to be a real-time process for each of the LFC-areas. This is why no harmonization in this regards is planned within PICASSO. Technical harmonization would have major impacts on BSPs.
- Energie-Nederland represented by Ruud Otter (The Netherlands): Less harmonization endangers the level playing field.
- EFET represented by Jérôme Le Page (EU): What do you harmonize technically?
    - Answer: In the stakeholder workshop mentioned topics.
- ENGIE represented by Olivier van den Kerckhove (Belgium): Harmonization of ramping approach vs. FAT-approach is key element and key criterion for level playing field.
    - Answer: Harmonization might be costly and might result in decreased social welfare. TSOs sees harmonization as described in the standard product as sufficient.
- EDF represented by Pierre Castagne (France): EDF is in favour of a longer FAT in order to increase market liquidity.
    - Answer: One objective of FAT Economical Assessment is to assess impact on market liquidity. Stakeholders will be asked in public consultation to share their views.
- EDF represented by Pierre Castagne (France): How do you want to conduct a FAT Technical Assessment in a fast changing environment?
    - Answer: Refer to procedure stated in the backup of the presentation.
- Next Kraftwerke GmbH represented by Sarah Hoolt (Germany): What happens if a DSO interrupts aFRR activation with congestion management measures?

- Answer: This is a particular case dealing with national congestion management. National processes will apply here. However, TSOs emind here here that in case of BSP failure or DSO constraints, BSP and/or DSO shall notify the TSO as soon as possible in order to guarantee the validity of aFRR common aFRR processes..

- Energie-Nederland represented by Ruud Otter (The Netherlands): Are the FAT Economical – and Technical Assessments conducted within PICASSO or within ENTSO-E?
  - Answer: FAT assessments will be done within ENTSO-E. Impact on liquidity and price will be asked from stakeholders in public consultation.

Bid resolution (time)

- Energie-Nederland represented by Ruud Otter (The Netherlands): Validity period of 15 minutes is supported and shorter validity periods increases transparency.
- EnBW Energie Baden-Württemberg AG represented by Stefan Janson (Germany): Are there really more options than 15 minutes possible, taking boundaries from other processes into account (e.g. mFRR etc.)? .)? And if so, what are the decision criteria for the validity period?
  - Answer during workshop: There are some boundaries for the validity period, for example the BEGCT and the other balancing processes. Motivation is to give market parties the opportunity to react to changes in the market as close as possible to real-time.
- WEB Windenergie AG represented by Florian Mader (Germany): In favour of shorter periods (both BEGCT lead time and lenght of validity period) in order to decrease forecasting errors.

Bid granularity (volume)

- Vattenfall represented by Daniel Nordgren (Germany): Minimum bid size should reflect administrative cost for one bid. With a fixed fee any desired minimum bid size would be supported.
- Energie-Nederland represented by Ruud Otter (The Netherlands): Harmonization is more important than the actual figure.

Non-contracted bids

- In addition to capacity auction, TSOs are planning to introduce non-contracted energy bids.
  - Stakeholder discussion:
    - This should increase competition for energy bids.
    - Complexity of IT systems might increase, if optimisation step decreasing. However, bid prices for longer periods of time would remain possible.
    - Besides basic activation processes, IT system would need to take price signals into account.
- Südvolt represented by Leo Pilgerstorfer (Germany): Can you please summarize the auction process?
  - Answer: Capacity auction process is mainly handled on a national basis. Within PICASSO energy auction process will be discussed. More information will be provided in the consultation document.

- Südvolt represented by Leo Pilgerstorfer (Germany): For each of the discussed topics, a comparison of aFRR Target platform with national situation, highlighting planned changes, would be appreciated.
- UNKNOWN PARTICIPANT: What would be the volume of non-contracted-bids per auction?
    - Answer: Non-contracted-bids are mandatory to be allowed by all TSOs pursuant to GLEB and are an opportunity for BSPs to offer energy bids on short notice, hence there is no dedicated volume. After BEGCT, non-contracted-bids would be merged into CMOL together with contracted bids – without discrimination – meaning both will be in full competition based on their unity prices
- ENGIE represented by Olivier van den Kerckhove (Belgium): Are contracted capacity bids released after being replaced by non-contracted-bids?
    - Answer: To cover capacity obligation contracted bids are mandatory to be offered by BSPs to the TSOs and compensated according to the pricing schema. Contracted bids replaced by non-contracted-bids might be released, depending on national processes (cf GLEB 20 (10)).

BEGCT

- BDEW Bundesverband der Energie- und Wasserwirtschaft e.V. represented by Matthias Grote (Germany): Conflict between Intraday- and balancing markets is seen. GCT of different markets needs to be aligned.
- Vattenfall represented by Daniel Nordgren (Germany): Could you consider giving BSPs the option to offer their capacity in one system, regardless if it is used as aFRR or mFRR?
    - Answer: This is part of the whole BEGCT discussion between the different product/project teams about aFRR,mFRR & RR. It is currently not foreseen to have automated bidding / IT-links between platforms because of high complexity & loss of transparency. However, a final answer cannot be given yet.
- Energie-Nederland represented by Ruud Otter (The Netherlands): Do all TSOs have the same intention?
    - Answer: Yes, but some overlaps are expected and therefore some arbitrage might be needed from BSPs. During public consultation stakeholder's priorities will be requested.
- BDEW Bundesverband der Energie- und Wasserwirtschaft e.V. represented by Matthias Grote (Germany): Why is harmonization of GCTs needed?
    - Answer: In order to establish a level playing field for each of the balancing products (aFRR, mFRR, RR).

Pricing

- Energie-Nederland represented by Ruud Otter (The Netherlands): This creates a money flow between TSOs, although they should be neutral and in a zero-sum game. Are the incentives right in this system?
    - Answer: Examples will be given first. After the examples, it becomes clear that money flows from TSO of area 1 through the TSO of area 2 to the activated BSP of area 2. This creates a zero-sum game.
- Energie-Nederland represented by Ruud Otter (The Netherlands): Will congestion rent affect BRP price?

- Answer: Congestion rent is still under discussion and impact of congestion rent on BRP price is taken into account. Stakeholders will be informed.

- Energie-Nederland represented by Ruud Otter (The Netherlands): What do you mean with “all countries benefit from platform”?
  - Answer: General studies (to be confirmed by CBA) has shown, that social welfare in each county for each time step is equal or higher with the platform, compared to situation today.
- Next Kraftwerke GmbH represented by Sarah Hoolt (Germany): How do you handle changing energy bids after BCGCT?
  - Answer: Please refer to validity period of bids & BEGCT topic
- EnBW Energie Baden-Württemberg AG represented by Stefan Janson (Germany) & thereafter also EFET represented by Jérôme Le Page (EU): Harmonization of BRP settlement is important for level playing field and should be discussed within PICASSO.
  - Answer: PICASSO sees it as overarching discussion among all projects.

BEPP

- EnBW Energie Baden-Württemberg AG represented by Stefan Janson (Germany): Is settlement based on metered values or requested values?
  - Answer: PICASSO considers pricing only. Settlement is handled on a national basis.
- Energie-Nederland represented by Ruud Otter (The Netherlands): Multiple questions/statements the netting sequence and capacity calculation.
- EFET represented by Jérôme Le Page (EU): Applying a four second price would be more akin to pay-as-bid than to marginal pricing and for that reason, I wonder if it is indeed compliant to EBGL which requires marginal pricing.
  - Answer during workshop: We will take your comment into account.
  - Answer: In this section, marginal price definition for aFRR activation within Bid validity period (of 15 minutes for instance) is adressed, and its potential influence on TSO-BSP settlement and Imbalance settlement.
- Energie-Nederland represented by Ruud Otter (The Netherlands): In regards of simplicity, 15 minutes should be the preferred solution.
- BDEW Bundesverband der Energie- und Wasserwirtschaft e.V. represented by Matthias Grote (Germany): Further analysis are seen as necessary for 15-min BEPP, expecting enormous money flows between BSP and BRPs.
- ENGIE represented by Olivier van den Kerckhove (Belgium): First point, some of the advantages of using marginal pricing e.g. Pay-as-Cleared might be lost in a system where a bid can be activated every minute with varying prices. In such a system, it is difficult for BSPs to set a bid price. Second point, please be careful when using the bids of the German Merit Order List, which is currently Pay-as-Bid, as a reference for the prices in a marginal pricing e.g. Pay-as-Cleared system.

Other harmonization topics

- Energie-Nederland represented by Ruud Otter (The Netherlands): Regarding FAT-approach and ramping-approach, how to deal with the uncertainties created by the FAT-approach as it is unknown exactly how fast a BSP would respond?
    - Answer: More suitable way to consider this is not more uncertainty, but rather a higher compliance area. The fastest reaction of a BSP is still known in advance, and the FAT-approach gives the proper incentives to a BSP to be as close as possible to the fastest reaction.
- [Webcast] Peeks Power represented by Hugo van der Heijden (The Netherlands) – Harmonization: As the use of windmills for R2 is currently not possible in Germany, what are the thoughts on enabling asset owners to enter their assets on foreign balancing markets or for foreign ancillary services.
    - Remark: Question is not addressed during the stakeholder workshop.
    - Answer:
        - BSPs can offer their flexibility to their connecting TSO (aggregation is possible) – after having passed prequalification first. All aggregated flexibility in a certain bid should remain in the same scheduling area – according to GLEB – so at least stay in the LFC-area in order to avoid polluting ACE-values between different LFC-areas.
        - The windmills in Netherlands can offer aFRR to Tennet-NL for instance – which afterwards via the CMOL (using a TSO-TSO model) – can be accessed for activation by other TSOs as well.
        - Theoretically and for a limited period of time, a TSO-BSP model could be possible – but this is not the target model and would require cross zonal capacity reservation on the border(s) in order for this service to be continuously available (requirement of each bid = 100% available during firmness period).

5. DESIGN - Integrating aFRR markets

Below mentioned questions and views are shared during the meeting and clustered by chapter:

AOF & TSO-TSO exchange

- [Webcast] Fortum Power and Heat Oy represented by Jussi Karttunen (Finland) - Determining aFRR demand: How is aFRR demand of each LFC Area calculated? How long is the period of ACE history taken in the demand calculation? How is above mentioned communication delay in activation taken into account?
    - Remark: Question is not addressed during the stakeholder workshop.
    - Answer:
        - aFRR demand is calculated for each control cycle of the local TSO (between 1 and 8 s) in same way for most TSOs – it is the sum of local ACE and current aFRR activation (measured or simulated). Local ACE is the dP measured at the tie-lines compared to the schedules, and corrected for the K*dF component in order not to have aFRR counteract the FCR reaction. The aFRR demand includes already previous taken RR or mFRR measures (as these measures are included in the ACE). The aFRR demand is calculated based on the most resent ACE calculated value and aFRR activation delivery individually for each time step (on control cycle basis) without taking into account any history (history is implicitly included within the aFRR activation amount). The aFRR demand itself is forwarded to the AOF – in order to determine the Pcorr values (optimal dispatch of demands determined by AOF).

- ENGIE represented by Olivier van den Kerckhove (Belgium): Can you clarify the interdependency between ramping approach and FAT-product?
    - Answers: Interdependency is currently under investigation. Stakeholders will be informed.
- AEGGSI represented by Marco Pasquadibisceglie (Italy): Is netting still needed with aFRR Target Platform and IGCC?
    - Answer: This depends of the geographical scope and sequence of netting processes. As long as there will be a different geographical scope between IN & XB aFRR platforms, then yes.
- ENDESA represented by Eloisa Porras Muñoz (Spain): Does the ACE adjustment process take a chain of countries into account?
    - Answer: Yes, a multilateral ACE adjustment process is under development.

Cross-zonal capacity and congestion management

- UNKNOWN PARTICIPANT: Is with congestion management, cross-zonal congestion management meant?
    - Answer: Yes.

Cost-Benefit-Analysis (CBA)

- EnBW Energie Baden-Württemberg AG represented by Stefan Janson (Germany): Using historical prices to assess a new market design might lead to not optimal results.

- EnBW Energie Baden-Württemberg AG represented by Stefan Janson (Germany): What is your intention performing such a CBA?
    - Answer: Justification for implementation cost on a national basis, and provision of volume exchange of aFRR among the countries.
- Energie-Nederland represented by Ruud Otter (The Netherlands): What kind of decisions are affected by the CBA?
    - Answer: Results will be mainly used to justify implementation costs on a national basis.
- EFET represented by Jérôme Le Page (EU): The added value for BSPs from a CBA is questionable.
    - Remark: BSPs can expect rough estimation of volumes transferred between the countries.
- UNKNOWN PARTICIPANT: Joint simulation across FCR, aFRR and mFRR might make sense.
    - Remark: Specifications of each product might be quite different. Additional effort might outweigh the added value of a joint simulation.

6. Next steps (Timeline & Phase 1)

- EnBW Energie Baden-Württemberg AG represented by Stefan Janson (Germany): Level playing field might be impacted negatively by having an Intermediate Version with different BEGCT.
- ENTSO-E represented by Kjell Arne Barmsnes (EU): GLEB gives the possibility to make a change proposal after three years. The intermediate version would give the opportunity to gain experience which serves as input for a possible change proposal afterwards.
- EnBW Energie Baden-Württemberg AG represented by Stefan Janson (Germany): <reacting to previous statements> The crucial items to be harmonized must be defined, also for the intermediate version. I think FAT, BEGCT, and penalties for non-delivery are examples of this. This needs to be considered beyond the purely technical parameters, namely towards creating a level playing field.
- UNKNOWN PARTICIPANT: Each national and regional change (e.g. Intermediate Versions) causes additional efforts and costs for BSPs. Aligned changes among national and regional parties would be appreciated and would most likely decrease efforts and costs for BSPs.
- UNKNOWN PARTICIPANT: Coordination among Intermediate Versions seems to be required.
- Energie-Nederland represented by Ruud Otter (The Netherlands): Are there any other Intermediate Version foreseen besides the Austrian-German Cooperation with France and Belgium intention to join?
    - Answer: It is obvious that TTN is for the time being the only TSO not sharing the intention to join Austrian-German Cooperation. TTN sees harmonization of aFRR markets as prerequisite.

Is there a topic you have in mind, which was not discussed today?

- ENGIE represented by Olivier van den Kerckhove (Belgium): Coordinated changes among TSOs towards BSP would be welcome in order to decrease effort and costs for IT changes for BSPs.
- Several stakeholders: Examples including graphs contribute to a common understanding.
- EFET represented by Jérôme Le Page (EU): What timing for the consultation survey do you have in mind?
    - Answer: Current tentative planning foresees public consultation period from 20 November 2017 to 20 December 2017.

List of abbreviations

ACE/FRCE	Area Control Error/Frequency Restoration Control Error
aFRR	Automatic Frequency Restoration Reserves
AOF	Activation Optimization Function
BEGCT	Balancing Energy Gate Closure Time
BEPP	Balancing Energy Pricing Period
BRP	Balancing Responsible Party
BSP	Balancing Service Provider
CACM	Capacity Allocation and Congestion Management
CBA	Cost-Benefit-Analysis
CMO	Common merit order
CMOL	Common Merit-Order List
EG	Expert Group
FAT	Full Activation Time
FCP	Frequency Containment Process
FCR	Frequency Containment Reserves
FRP	Frequency Restoration Process
FRR	Frequency Restoration Reserves
GLEB	Electricity Balancing Guideline
GLSO	System Operator Guideline
IG	Implementation Group
IGCC	International Grid Control Cooperation
ISP	Imbalance Settlement Period
mFRR	Manual Frequency Restoration Reserves
MOL	Merit-Order List
MoU	Memorandum of understanding
MP	Marginal Price
NRA	National Regulatory Authority
RR	Replacement Reserves
RRP	Replacement Reserves Process
SC	Steering Committee
TSO	Transmission System Operator
XB IP	Cross-border imbalance pricing
XB MP	Cross-border marginal pricing