

## EFET response to the NRA survey on Flow Based Market Coupling



30 June 2014

The European Federation of Energy Traders (EFET) welcomes the publication of the CWE NRA survey document on Flow Based Market Coupling (FBMC). While EFET has supported the CWE FBMC project since its beginning, we believe that a number of promised improvements are still pending and various implementation measures still need to be checked. Some essential information is missing to explain FBMC results and the FB model is still subject to substantial evolutions. The stability of the model and the quality of the information provided remains uncertain. Market participants need to test the full stable FBMC tool with promised transparency in order to declare technical readiness.

**1. What kind of improvements do the FB(I) principles and implementation bring for the whole market and for you as a market participant?**

The FB(I) principles aim to be closer to the physical reality through the implementation of a zonal market model. As a result, this project should allow to reduce TSOs security margins on the cross-border capacity allocations, leading to a more efficient use of the network resources and increase market liquidity, as well as, market welfare for the CWE region.

For the whole market, the advantages of FB(I) are the following:

- 1) Better transparency on where the Critical Branches will be located;
- 2) Increased price convergence, even though, (financial) benefits tend to be limited compared to the current ATC method and the complexity of the model;
- 3) Expected increased TSOs coordination.

As market participants, the Flow Based method will introduce more complexity and the need to update our tools and processes. As a consequence, a well-designed “market interface” is essential in making sure that the expected benefits are realised.

From a theoretical point of view, the impact of implementing FB(I) will highly depend on the activity type (producer or consumer) and in which country most of the activities are located.

**2. Are there improvements in other areas than transparency you would like to suggest the project partners to implement before Go-Live?**

First, **robustness** should be improved. Project partners are still publishing parallel run results with missing days leading to a lack of trust in the FB(I) methodology and the industrialized tool.

Second, **stability** should be improved. The “CWE FBMC Steering Committees” have a lot of freedom to decide any minor or major methodological changes (reference to §14 of the documentation of the consultation) without informing market participants. Moreover, any methodological change should be transparently announced and subject to a parallel run period, in order to familiarise the market with the impact of the change. It should not be up to TSOs to decide whether to publish or not changes in their methodology: they should be systematically published, together with TSOs’ assessment of the potential effect on FB(I) results. Market participants will struggle to run statistical analysis and correlations if the fundamental information on changes in the software algorithm are not published.

Also, without that information and an adequate transition time, historic data used for the calibration of statistical models, as well as the model itself, will become obsolete or of lesser relevance. As a consequence, market participants will not be able to understand the implications of changes in the model and market confidence will decrease while risk premiums will increase, thus directly deteriorating the overall benefits of the methodology for the market.

Even if this approach would oblige TSOs to run two different processes in parallel, providing time to market participants to get familiar with significant changes is seen as highly important. EFET still believes that a lot of improvements are possible in the D2CF process (e.g.: some TSOs are directly correcting positions on generators, other TSOs are correcting positions on load, other TSOs on balancing units, etc.), GSK process (e.g.: different approaches to model the generation units by looking at Pmin/Pmax, pro rata or by technology, etc.), and FAV process. Only sparse monitoring information is provided but not really explained in the consultation document.

It is essential that a **Stakeholder Committee** (consisting of market participants), as per the Guideline on Governance of the CACM network code, is established before go-live to monitor the methodological changes decided in the “CWE FBMC Steering Committees”. This Stakeholder Committee (SC) should have an advising role to TSOs and PXS as well as to NRAs. The SC should monitor the well-functioning of FBMC and should be involved in proposed changes in the FBMC process and algorithm. For that purpose, PXs and TSOs must be obliged to provide detailed information to the SC. This SC is necessary because of the technical and organisational complexity of FBMC. Each national PX already has a similar Committee; however it is now apparent that a single SC must be established for the whole region covered by FBMC, as acknowledged at the last Electricity Regulatory Forum of 20-21 May 2014.

Third, the FB(I) model should **take account of the 50Hz and APG grids** and should ensure that market results can be dispatched without redispatch measures that would outweigh the benefits of FB(I). Market results should also be checked by PSE and CEPS before go-live. This would otherwise be inefficient in terms of welfare optimisation and could potentially lead to network security problems if TSOs don't have the necessary redispatch tools available (such as cross border redispatch).

Fourth, **more explanation on the spanning margin calculation model** is needed (reference to §4.6 of the consultation document). This model gives discretion to the TSOs in case more than 3 hours are missing for the next day. This methodology leaves too much leeway to the TSOs as they cannot commit to the "n" value. The conversion process from LTA+n towards flow based constraints is not reliable neither sufficiently controlled by NRAs. Also, a quantitative estimation of the number of fall-back hours and of their effect in decreasing the social welfare should be made. This would provide some quality indicators with maximum limits on which TSOs should be obliged to report to regulators (the monthly analysis seem insufficient in that respect), thus avoiding substantial welfare destruction.

Fifth, **ATCs shadow auctions should be tested before go-live**, including tests on the ability of market participants and Market Coupling Operators to efficiently manage simultaneous shadow auctions and to produce reliable price results. Flow Based will indeed create a 100% correlation on fall-back modes across CWE compared to the possibility to decouple one border in the current ATC environment, and could also arguably increase the likelihood for fall-back. It is therefore important for this critical process to be tested before go-live.

Sixth, **parallel runs with the "reference flow based domain"** should be proposed before go-live (see footnote 8 in §4.1.6 of the documentation of the consultation). From the consultation document, it seems that NTC will disappear with FBMC and be replaced by a "reference flow based domain". The "reference flow based domain" is not properly explained and will only be proposed after go-live, without firm commitment on a date of delivery of this tool.

Finally, the **responsibility and liability of the Project Parties** in case of erroneous results should be well defined and NRAs should provide appropriate supervision in that regard.

**3. Are there improvements in other areas than transparency you would like to suggest the project partners to implement for a future Flowbased 2.0?**

EFET still sees significant room for improvement as the process is not fully mature yet. We strongly advocate for a robust and stable Flow Based 1.0, addressing the above-mentioned elements (see answers to questions 1 and 2) and ensuring that market participants are really given the minimum tools, transparency and explanations to efficiently trade in a FB(I) environment **before go-live**, and prior to any discussion on a potential second release. As an example, discussion have not started on forward trading, especially in M-1 or W-1, for which

scenarii were supposed to be published. Also the promised D+2 publications would need to be checked in terms of format, quality, completeness, with changes still to be potentially requested before go live. The lack of progress in such areas prevent market participants to declare technical readiness for the moment.

It seems that various improvements proposed by the Project Parties for a 2.0 version should in fact be reclassified as basic market needs to be implemented and tested before go-live.

**4. Do you have any preferences for the Flow-Based plain or Flow-Based intuitive market coupling? For additional information we refer to annex 13 of the Approval Package.**

FB-plain

**FB Intuitive**

no preferences

**Please state why:**

Day-ahead welfare differences between Flow Based plain and Flow Based Intuitive are rather limited, but starting with Flow Based Intuitive could nevertheless be important with regard to public acceptance. Cross-border capacities made available in intraday should be consistent with what is allocated in day-ahead. Therefore, the preferred solution could be Flow Based Intuitive with a recalculation (instead of shifting) of the Flow Based domain after Day-ahead clearing in case we keep ATC in intraday.

However, Flow Based Intuitive will require the application of an additional iterative process in the EUPHEMIA market coupling process (“intuitive patch”). The process of the “intuitive patch” in the EUPHEMIA algorithm should be detailed and applied in a non-discretionary way by TSOs. Any extra calculation time on the optimisation algorithm needs to be assessed (i.e. solution within 10 minutes), and the potential impact of Paradoxical Rejected Blocked Orders (PRBs) has to be analysed.

**5. Do you understand the capacity calculation model presented?**

informal level

**intermediate, I understand the explanation of most technical parameters**

high, I understand the explanation of all technical parameters very well

EFET members understand the capacity calculation model presented and most of the technical parameters used. However, there is a lack of understanding of all specific interventions by TSOs that will influence the results and market outcomes (e.g.: D2CF process, GSK process, FAV process including usage of Remedial Actions, etc.). Also, the analysis provided on the Flow Reliability Margin (FRM) is limited and does not compare the results with what is needed or used today in the current ATC allocation process via the Transfer Reliability Margin (TRM).

Finally, releasing the whole Common Grid Model (CGM) to the market would definitely increase market confidence, as it would forge a better understanding of the outcomes of certain results via ex-post analysis.

**If applicable, which additional information to the capacity calculation model and/or the explanation of all technical parameters do you need?**

Network information is part of the fundamental market information that impact prices. Therefore, all network information needs to be published. This includes:

- the Common Grid Model
- the GSK methodology
- FRMs
- the list of Critical Branches
- the base case assumptions
- the standard processes for the application of remedial actions

All the data that determines the PTDF matrices needs to be published as early as possible. EFET would also request that even after go-live, a parallel publication of ATC values remains available for at least 3 months in order to further facilitate the transition and the adaptation to the flow-based environment. Also, TSOs total (forecast) import and export constraints should be made available to market parties. In the parallel runs, these are constraining prices more than 20% of the time. As those values should be rather constant, they could be published “ex-ante”.

Also, the market should be informed of any special parameters or events that influence the (historical) PTDFs. Finally, a list where each Remedial Action is link to a specific event would be essential in order to have a view on the potential change on the Flow Based domain.

**6. Do you understand the spot and forward price formation under FB(I) MC?**

- informal level
- intermediate**
- high/expert

Spot prices under FB(I) MC remain very opaque and it is unclear how exactly the process of the “intuitive patch” works in the EUPHEMIA algorithm.

Forward prices theoretically anticipate the future spot prices, but contain a certain premium that covers the uncertainties of the future. Because FB(I) MC still has to gain in maturity, transparency, robustness and experience, and because its results are difficult to predict and may still include errors, it could result in additional risk premiums being taken by market participants in the various timeframes as long as the full trust in the methodology is not established.

For the sake of completeness, and as rightly explained on p. 130 of the approval package, Flow Based can only be computed in day-ahead. Having a long-term Flow Based grid model does not

make sense : NTC/ATC methods should be the only ones used in the forward timeframe. Their articulation with FB parameters should therefore be further explained before go-live.

**If applicable, which additional information related to price formation under FB(I) MC you wish to be published?**

See above contributions, including quality indicators, spanning methods and fall-back FB(I) parameters, changes in the methodology or software and any price significant evolutions. The “intuitive” patch to be used in the FBI MC should be clarified and published.

**7. Do you consider you will be in a position to bid properly in the Flow-Based environment from the Go-Live date now expected at the end of 2014? Please explain and make a link with the studies or tools you may have developed to be prepared for Go-Live.**

Not at the moment. The change of environment may significantly disrupt forward trading in W-1 and M-1 in case of insufficient transparency or unavailability of simplified tools requested by market participants.

Even if the launch of FB(I) MC should not affect the bidding behaviour of market parties for standard assets, the decrease of understanding in price formation will affect the quality of the order books for all assets managed under usage value constraints and may also deter non asset-backed participants from participating in the day-ahead market.

Also, in case of lack of market confidence (due to insufficient transparency, lack of robustness, impact on PTRS, etc.), there is a risk that an insufficiently prepared Flow Based go-live will affect market liquidity and reduce volumes on Power Exchanges. This could also be the case if the outcome of the Flow Based process is significantly different from the one anticipated during the parallel run. Market participants might then look for safer alternative solutions on the OTC market. Market understanding and confidence are therefore essential for a successful go-live.

**8. Is the current proposal for data publication sufficient for your daily Flow-Based operation?**

Yes

No

**In your opinion, which data, if any, should be additionally published, and why would this data be essential for you? Could you explain in which way it could be more useful than the one the project currently proposes to publish?**

EFET strongly disagrees with the statements made by the Project Parties under §10.5.2 of the consultation document, where publishing the common grid model is identified as a risk of market abuse and a problem related to the security of critical infrastructure. Such arguments are not valid as this data is already available in some European countries. EFET expects a quick harmonisation of the transmission data published by TSOs in Europe and does not understand why this data would be confidential in certain countries and not in others. Moreover, it is the responsibility of the NRAs to monitor any potential market abuse. Also, in case of critical infrastructure, there may be specific solutions to avoid misuse of such information.

9. If applicable, are there additional studies / indicators you would like to be processed during FB(I) implementation on the market side either before or after Go-Live? Please explain why.

Additional studies / indicators **before** Go-Live:

1. Operational Report on the ability to detect errors<sup>1</sup> and to correct them within a tight time schedule (including the ability to switch to fall-back or “spanning” modes): 3 months minimum without error detections and daily publication within the deadline;
2. Impact assessments on forward trading and intraday cross-border capacities calculation;
3. Indicator of the extra-calculation time needed for including the “intuitive patch” in the EUPHEMIA algorithm and impact analysis on the Paradoxical Rejected Blocked Orders (PRBs).
4. Impact study including 50Hz and APG in the capacity calculation process to analyse the impact on market results;
5. Check of parallel run results by PSE and CEPS in order to avoid network security problems and redispatch measures that would outweigh the benefits of FB(I) after go-live;
6. Sensitivity analysis on the FRM: what would be the impact on the FB results? What would be the additional amount of remedial actions needed?;
7. Sensitivity analysis on the CB level from a PTDF threshold of 5% to 6% or 7%: what would be the impact on the FB results? What would be the additional amount of remedial actions needed? This would ensure that the adequate parameters have been chosen before go-live and that changes after go-live are limited as much as possible (cf. potential direct impacts on market prices and requirement for parallel run, see our answer to question 2);
8. The parallel run so far only compared ATC/FB in the CWE region. However, as prices in the CWE region change with FB, they will also affect prices and cross-border flows with the other regions (Nordic, UK, Iberia); some additional parallel run analysis to include these regions seems to be appropriate, as well as the publication of parallel run prices for these markets (already requested several times) and the guarantee from these markets that no specific patch will be included after go-live (i.e. that parallel run prices are representative of future market prices under similar conditions);
9. Compatibility with CEE FB and ability of the methodology to couple with the CEE region.

Additional studies / indicators **after** Go-Live:

1. Publish FB and FBI outcomes in order to be able to compare results;
2. Report on the operational and market efficiency of the FB method;
3. Analysis on the quality of order books;
4. Update monitoring studies already provided (intuitiveness, etc.).

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<sup>1</sup> Today, many errors are detected by market participants ex-post through Q&A questions, FBUG meeting discussions, etc. Such a situation cannot continue after go-live since it would mean that some mistaken prices have been published and it would certainly lead to complaints from market participants.

**1. In terms of parallel run performance and the outcome of the Member Testing, what do you consider as criteria for the Go Live? Please consider performance of the regular FBMC as well as the FBMC under fallback conditions (see section 4.6 of the Approval Package).**

1. **Robustness:** market participants need to know they can trust the methodology and results of FB(I) MC, especially considering that it should be implemented throughout Europe in the mid to long term. Hence, the process has to be robust and a high availability is required. The probability to use fall-back solutions should be close to zero. We require at least 6 months of daily parallel run results without missing days (lead time) and at least one year of reliable dataset, with explanations on methodology changes and non-anonymised critical branches;
2. **Stability** of the constraints / methodology;
3. **Transparency:** relaunch the FB user group expert meetings to finalise discussions on the remaining open questions and to provide the necessary tools and transparency allowing for the successful go-live of Flow Based:
  - Information on special parameters or events, or changes in the methodology that influence(d) the (historical) PTDFs;
  - Typical PTDF based on scenarios of supply/demand;
  - TSOs total (forecasts) import and export constraints;
  - Constant ID number on the Critical Branches in D+2 (checking format, quality, completeness, etc.) and improvements if needed;
  - Further information on the fall-back methodology used in the spanning margin calculation model ("LTA+n" value);
  - Continued software/methodology debugging by analysing technical issues or inconsistencies, not only in missing days or negative welfare creation days but also in maximum welfare days or normal welfare days;
  - At least one typical PTDF matrix forecasted every month of the year related to the following month (12 forecasts on PTDF matrixes per year) reflecting stable market conditions and taking into account planned grid maintenances.
4. **Daily parallel runs with shadow ATC values;**
5. Publication of essential parts of **NRA monitoring reports** (e.g.: FAV, etc.) before Go-Live.

**2. What type of technical event or market results, linked to FB(I) MC implementation, should potentially trigger a rollback to the ATC market coupling? Please be as specific as possible. Please note that the Rollback triggering will be a JSC decision**

Two types of technical events or market results should potentially trigger a rollback to the ATC market:

1. Any incidents regarding the FB capacity to deliver on a daily operational basis (within the deadline and without the use of fall-back or spanning techniques) and/or problems of results consistency (e.g.: no market results, unacceptable grid or market results);



2. When the risk to continue with the FB(I) MC is estimated too high or when a suspension would be needed to improve the methodology / implementation of FB(I) MC.

EFET would recommend a rollback activation period of at least one year, even though the gains from such a phase-out are not clear since ATC values are needed for the fall-back procedures and potential shadow auctions. Also, it would be interesting to keep ATC after implementation of Flow Based for at least 3 months in order to compare both models and ensure maximisation of welfare.

**3. Do you have any other or more general comments concerning flow based market coupling?**

Commission Regulation (EU) 543/2013 on Fundamental Market Data Transparency obliges TSOs to publish a broad variety of data related to congestion management. Specifically for Flow Based, the transparency regulation foresees in its article 11§1 that *“TSOs, for their control areas or, if applicable, transmission capacity allocators, shall provide all the ‘relevant’ flow based parameters sufficiently in advance of the allocation process”*. Therefore, Flow Based parameters such as GSK, CB, FAV, FRM, etc. should be publicly available.

A minimum of 3 months between the confirmation of the go-live date and the actual go-live date are needed (minimum adaptation time) and a more reliable visibility on when FB(I) is likely to start would be needed.

Market participants should test the FB(I) fall-back mode (ability to produce reliable prices in CWE and neighbouring countries).

Also, non-limiting constraints, not only the capacity domain, should be published in a non-anonymised way, otherwise it would be impossible to realise reliable statistics if existing but non-limiting constraints are hidden.

Finally, a recalculation (instead of a shift) of the Flow Based domain should be performed after day-ahead clearing to maximise the allocation of the intraday cross-border capacities.