Review of methodological changes implemented during the parallel run

CWE Flow Based Market Coupling project

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Related documents

Attachments

Contents

1 Purpose of this note

This document is aimed at providing a synthetical overview of the methodological changes that were applied by CWE TSOs in the course of the Flow Based parallel run. CWE partners wish to remind that the capacity calculation process applied during the parallel run is consistent with the approval package (AP):

http://www.casc.eu/media/CWE%20FB%20Publications/Approval%20Documents/130801%20CWE%20Flow%20Based%20MC%20solution%20Approval%20document.pdf

In this respect, each item depicted below is associated with a reference to the former document. Should the case arise, a brief market impact assessment is proposed.

2 Methodological changes

2.1. External constraints (EC)

2.1.1. Description of "EC" within the approval package

EC, that take the form of import and export thresholds per bidding area, are implemented by all CWE TSOs as a necessary complement of "classical" critical branches. EC are not associated to physical elements of the grid but translate specific constraints that TSOs need to cover for security reasons (mainly, voltage and grid stability issues, which cannot be directly linked to any specific element of the grid and which can't be computed by the DC load-flow module of the FB methodology). EC are the results of deterministic studies and are meant to avoid unacceptable situations for TSOs. In this respect, EC are systematically implemented by CWE TSOs as inputs to the FB market coupling process, which does not mean that these constrains will systematically limit the market, The method followed by each TSO to design and implement its EC is depicted in section 4.1.9 (p. 44) of the AP.

2.1.2. Implementation and market impact

EC have been implemented by respective CWE partners at the following dates:

- Elia: EC implemented since the beginning of the experimentation.
- RTE: EC implemented in November 2012, that is before the start of the // run publications.
- TenneT NL: EC implemented as of mid February 2013. TenneT has increased both thresholds (import and export) by 100 MW with respect to values given in the approval package in February 2014. This update belongs to a natural process of critical review and analysis performed by all TSOs. It has been applied in the operational ATC methodology and consequently for the FB parallel run as well.
- German TSOs: Amprion, TenneT DE and Transnet BW have coordinated and implemented their EC at the end of February 2013, that is shortly after the launch of the parallel run publications.

CWE partners wish to remind that contrary to classical critical branches, EC are perfectly identifiable in the parallel run publications and their impact on the market is completely transparent. Assessing quantitavely the market impact of these constraints is in practice not possible as it would require to recompute FB Parameters by removing these limits, which would lead to unrepresentative results as it has been explained before that TSOs absolutely need to systematically use these constraints for security reasons. We can only note that in the period between 1 March 2013 and 31 December 2013 an EC restricted the market outcome 36% of the time (the origin of the ECs was BE: 0%, DE : 7%, FR: 1%, NL: 28%). I.e. relaxing these constraints would therefore impact these hours.

2.2. Generation Shift keys

2.2.1. Description of GSKs within the approval package

GSK are widely described in section 4.1.7 (p. 32) of the AP. CWE partners just wish to remind that GSK are mainly composed of two parts, on the one hand the "starting point" (that is the generation pattern in the base case) and the "key" itself that correlates linearly variations of the generation pattern with cross border exchanges within CWE. Because each TSO faces specific operational constraints and generation pattern, the GSK include local variants that are described and justified within the AP.

2.2.2. Implementation and market impact

All TSOs strictly apply the GSKs that are depicted within the AP. It has to be noted that RTE used to apply a slightly different method until June 2013, and then switched to the exact method of the AP.

The change implemented by RTE was meant to align its practice with the one depicted in the approval package and to make a step towards harmonization. This step consisted in including all units within the GSK while some of them were excluded before. The change has been accompanied by a thorough analysis, presented to CWE NRAs, which demonstrated that the market impact was negligible. This allows CWE partners to confirm that the first months of the parallel run (before November 2013) remain therefore representative in this respect.

2.3. Flow Reliability Margins (FRM)

2.3.1. Description of FRM within the approval package

FRM are widely described in section 4.1.8 (p. 40) of the AP.

2.3.2. Implementation and market impact

All TSOs have implemented end of 2012 the FRM values used during the parallel run, to the exception RTE that has updated its values together with its new GSK approach. As explained above, the changes had marginal impact on the values.

2.3.3. Foreseeable changes during the parallel run

It is part of the method to update regularly the FRM values in order to take into account changing operational conditions. CWE TSOs have come to the conclusion that a yearly update was a good compromise between the time/resource required to perform the study and to gather a representative statistical sample. The FRM values that will be used at Go Live will be deployed end of May. Assessing the market impact is obviously not possible, but a detailed report (including single FRM values for the most constraining CBs) will be communicated to NRAs.

2.4. Final Adjustment Value (FAV)

2.4.1. Description of FAV within the approval package

FAV are depicted in section 4.1.4 (p.21) of the AP. They consist in manual adjustments made by TSO in case some complex grid situations cannot be embedded in the FB model (example: complex remedial actions).

2.4.2. Implementation and market impact

While FAV were somehow used by TSOs since the beginning of the parallel run, their systematic usage has become possible with an upgrade of the FB prototype as of June 2013. Assessing distinctively their market impact is not possible as it would require to recompute ex-post FB Parameters, a process which would imply to loose representativeness of the results.

CWE partners however wish to remind that:

- On the one hand FAV usage is object to reporting towards NRAs.
- On the other hand, so far, FAV have only been used to increase the margins of the FB CB, therefore creating a positive effect for the market.
- The implementation of a systematic LTA coverage (c.f. below) within the FB system results in a drastic decrease of FAV usage.

2.5. Long Term Allocations (LTA) coverage

2.5.1. Description of LTA coverage within the approval package

LTA coverage is justified and depicted in section 4.2.6 (p.55) of the AP.

2.5.2. Implementation and market impact

LTA coverage was implemented in the FB industrialized system, therefore systematically applied as of February 12th 2014. Market impact is also difficult to assess specifically, but it needs to be reminded that :

- LTA coverage results in an "increase" of the FB domain through the addition of a set of virtual FB parameters that are not related to physical elements of the grid. CWE TSOs confirm that this enlargement results in situations remaining safe, but can be necessary to take into account grid situations not perfectly modelled by FB concepts (in this respect, this notion is comparable to the usage of FAV). LTA coverage is also the object of a close monitoring.

2.6. Operational process

2.6.1. Overview of the operational process within the approval package

An overview of the operational process is given in section 4.2.2 to 4.2.5 (p.52) of the AP.

2.6.2. Continuous evolution of the capacity calculation process performed by TSOs.

CWE partners want to remind here that the capacity calculation process is constantly subject to minor evolutions and improvements which go beyond FB implementation, and therefore cannot be associated to definite timely milestones linked to the CWE FB project.

As far as the parallel run is concerned, the year 2013 has been the field of continuous operational improvements (mainly linked to the gain of operational expertise using prototype tools), that have been consolidated in 2014 with the usage of an industrialized system as of February 12th.

It can be noted that FB implementation is particularly facilitating this continuous improvement framework by fostering operational coordination between TSOs.

3 Summary/ Conclusions

Based on the described methodological changes and the points in time for the respective introductions, TSOs consider the results of the external parallel run stable from the method point of view as of February 2013.