
2nd Report on the progress and potential problems with the implementation of Single Day- ahead and Intraday Coupling

6 February 2017

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1. Introduction

Article 82(2)(a) of the Commission Regulation (EU) 2015/1222 of 24 July 2015 establishing a guideline on capacity allocation and congestion management (hereafter referred to as the “CACM Regulation”) requires ENTSO-E to monitor the progress and potential problems with the implementation of the day-ahead and intraday coupling, including the choice of different available options in each country. To fulfil this requirement ENTSO-E has committed, under its Monitoring Plan¹, to provide ACER with a report (hereafter referred to as the “Report on the progress and potential problems with the implementation of Single Day-Ahead and Intraday Coupling”) six months after the delivery of the Monitoring Plan, and thereafter every six months.

The [first report](#) was delivered in August 2016 specifically covering the period from the date of entry into force of the CACM Regulation (August 14th 2015) onwards. This second report is to be delivered in February 2017 building upon the first report with a special emphasis on the six months following the initial report delivery.

Market coupling allows for the allocation of cross-zonal capacities to be optimised via a coordinated calculation of prices for each bidding zone. The report takes stock of the progress achieved so far in the coupling of electricity markets through the different projects in place before the entry into force of the CACM Regulation and which became leading projects following the entry into force of this Regulation. These are the day-ahead market coupling project (namely the multi-regional coupling (hereafter referred to as “MRC”) project) and the intraday market coupling project (namely the cross-border intraday (hereafter referred to as “XBID”) project). The report also provides an account of the current state-of-play and the challenges in the implementation of single day-ahead and intraday coupling. Moreover, extensions of the MRC project and accessions to the XBID project are covered.

The report is organised into the following four chapters: Chapter 2 introduces the transversal progress of the single day-ahead and intra-day coupling based on the various tasks put upon all TSOs and all nominated electricity market operators (hereafter referred to as “NEMOs”). Chapter 3 recounts the progress made to date and the potential problems with the implementation of coupling day-ahead markets in Europe via the MRC project. Chapter 4 recounts the progress made to date and the potential problems in integrating intraday markets through the XBID project. Chapter 5 contains a concise summary of the previous chapters. A glossary is included at the end for convenience.

¹ Prepared and submitted by ENTSO-E to ACER on 12 February 2016 in accordance with Article 82(3) of the CACM Regulation, hereafter referred to as the “Monitoring Plan”.

2. Transversal progress for single day-ahead and intraday coupling

The CACM Regulation requires TSOs and NEMOs to develop deliverables for the implementation of the single day-ahead and intraday coupling. Several of these deliverables progressed since August 2016. This Chapter lists the state of play of the pan-European deliverables of all TSOs and NEMOs. Attention will be extended to regional deliverables in the next Report on the progress and potential problems with the implementation of Single Day-Ahead and Intraday Coupling.

2.1. All TSOs deliverables

Capacity calculation regions. On 13 November 2015, all TSOs submitted to their national regulatory authorities (hereafter referred to as “NRAs”) for approval the [all TSOs proposal on capacity calculation regions](#)² (hereafter referred to as “CCRs”), developed in accordance with Article 15 of the CACM Regulation. NRAs did not reach an agreement on the all TSOs proposal, and the proposal was referred to ACER. On 17 November 2016, ACER issued its [decision](#) on the all TSOs CCR proposal. The decision approves the CCRs proposed by all TSOs, but for one amendment. It merges the Central West Europe (hereafter referred to as “CWE”) and Central Eastern Europe (hereafter referred to as “CEE”) regions in a single step into a combined CCR, namely the “CORE CCR”. The configuration of each CCR is described in [Annex I of the ACER decision](#). The implementation of this decision will be monitored in ENTSO-E biennial report on capacity calculation and allocation constraints, whose first edition is due by August 2017 in accordance with Article 31 of the CACM Regulation. This decision is the starting point to ascertain potential delays for other deliverables for the single day-ahead and intraday coupling.

Common grid model methodology and generation and load data provision methodology. On 14 June 2016, all TSOs submitted to their NRAs for approval the all TSOs proposals for [a common grid model](#) (hereafter referred to as “CGM”) methodology and [a generation and load data provision methodology](#) (hereafter referred to as the “GLDPM”), developed respectively pursuant to Articles 17 and 16 of the CACM Regulation. All NRAs decided to commonly approve the GLDPM on 28th October 2016. They shall individually approve the GLDPM before the 11th of January 2017. On 13th December 2016 all NRAs decided to request TSOs to amend their CGM methodology proposal. All TSOs are in the process of amending the concerned methodology, for submission to NRAs at the latest by 11th of March 2017.

Congestion income distribution. On 20 July 2016, all TSOs submitted to their NRAs for approval the all TSOs proposal for a [Congestion Income Distribution methodology](#), developed in accordance with Article 73 of the CACM Regulation.

Day-ahead firmness deadline. On 14th December 2016, all TSOs submitted to their NRAs for approval the all TSOs proposal for the [day-ahead firmness deadline](#), developed in accordance with Article 69 of the CACM Regulation.

Intraday cross-zonal gate opening and gate closure times. On 14th December 2016, all TSOs submitted to their NRAs for approval the all TSOs proposal for [intraday cross-zonal gate opening and gate closure times](#), developed in accordance with Article 59 of the CACM Regulation.

Calculation of scheduled exchanges resulting from single intraday and day-ahead coupling. On 14 December 2016, all relevant TSOs submitted to their NRAs for approval the all

² The explanatory document to the all TSOs CCR proposal is available [here](#).

TSOs proposals for calculating scheduled exchanges resulting from single [day-ahead](#) and [intraday](#) coupling, developed in accordance with respectively Articles 43 and 56 of the CACM Regulation. The latter was submitted for information purposes and only by some TSOs to their NRAs as the scheduled exchanges resulting from single intraday coupling have not been in place yet.

2.2. NEMOs deliverables

Plan for the market coupling operator function. on 14 April 2016, all NEMOs submitted to all NRAs for approval their proposal for the setting-up and performance of the market coupling operator (hereafter referred to as “MCO”) function, developed in accordance with Article 7(3) of the CACM Regulation. All NRAs asked All NEMOs to review and amend the MCO plan, thus delaying the approval process, which would formally make the MRC project and the XBID project the pan-European solutions for day-ahead and intraday market coupling. On 14 December, all NEMOs submitted to all NRAs their amended proposal.

Day-ahead and intraday algorithms. The CACM Regulation requires All NEMOs to develop price coupling and continuous trading matching algorithms for the day-ahead and intraday markets. All TSOs provided All NEMOs with a proposal for a common set of requirements for efficient capacity allocation to enable the development of the price coupling algorithm and of the continuous trading matching algorithm, in accordance with Article 37 of the CACM Regulation.

Maximum and minimum prices. All NEMOs are developing a proposal on harmonised maximum and minimum clearing prices to be applied in all bidding zones which participate in single day-ahead and intraday coupling, in accordance with Articles 41 and 54 of the CACM Regulation. All NEMOs are cooperating with relevant TSOs in the preparation of this deliverable.

Back-up methodology. All NEMOs are preparing, in collaboration with All TSOs, a back-up methodology in accordance with Article 36 of the CACM Regulation.

Products accommodated. All NEMOs are developing a proposal on products that can be taken into account in the single day-ahead and single intraday couplings, in accordance with Articles 40 and 53(4) of the CACM Regulation.

The above draft All NEMO deliverable proposals, except for the plan of the market coupling operator function, have been submitted for [public consultation](#) on 3 November 2016, in accordance with Article 12 of the CACM Regulation. The final proposals shall be submitted by all NEMOs to all NRAs for approval by 14 February 2017 at the latest.

3. Progress, challenges and current status of single day-ahead coupling and the way forward

3.1 Background

The aim of the MRC project is to create a cross-zonal day-ahead market in Europe. The MRC project is the basis for the implementation of the pan-European single day-ahead coupling under the CACM Regulation. Currently, the MRC project covers 19 countries³, representing over 85 % of European electricity consumption. This is illustrated in Figure 1 below.

MRC makes use of a common price coupling algorithm, called EUPHEMIA, to calculate electricity prices across Europe and to implicitly allocate auction-based cross-border capacity.

Under the single day-ahead coupling, two approaches for calculating cross-zonal capacity inputs for an implicit capacity allocation are possible pursuant to the CACM Regulation: coordinated⁴ net transmission capacity (hereafter referred to as “CNTC”) and flow-based (hereafter referred to as “FB”). Up until 2015, all single day-ahead market coupling projects applied the net transmission capacity (hereafter referred to as “NTC”) methodology. In May 2015 the CWE region introduced FB in MRC operations which was extended to cover Austria in November 2016.⁵

In parallel, the 4M Market Coupling project (hereafter referred to as “4M MC”) which also applies EUPHEMIA, went live in November 2014. This day-ahead, price coupling project based on NTC covers the Czech, Slovak, Hungarian and Romanian markets as well as the borders between these bidding zones.

EUPHEMIA algorithm is currently operated with one power exchange per country⁶.

Figure 1 below provides an illustration of the current state-of-play in the coupling of European day-ahead electricity markets as of January 2017. Croatia, Bulgaria, Greece, Ireland and Northern Ireland are in general highlighted as progressing towards market coupling, reflecting the ongoing work in these countries (e.g. electricity market reform in line with CACM Regulation requirements).

³ The 19 countries are Austria, Belgium, Denmark, Estonia, Finland, France, Germany, Italy, Latvia, Lithuania, Luxembourg, Norway, Portugal, Slovenia, Spain, Sweden, The Netherlands, GB, and Poland. Please note that the TSO of Poland is currently in the process of joining to the project.

⁴ The level of coordination to be agreed by the relevant parties.

⁵ Starting with the delivery day 09 November 2016, APG is fully integrated in the flow-based capacity calculation processes of the CWE region.

⁶ Except in GB, where two power exchanges participate to the market coupling.

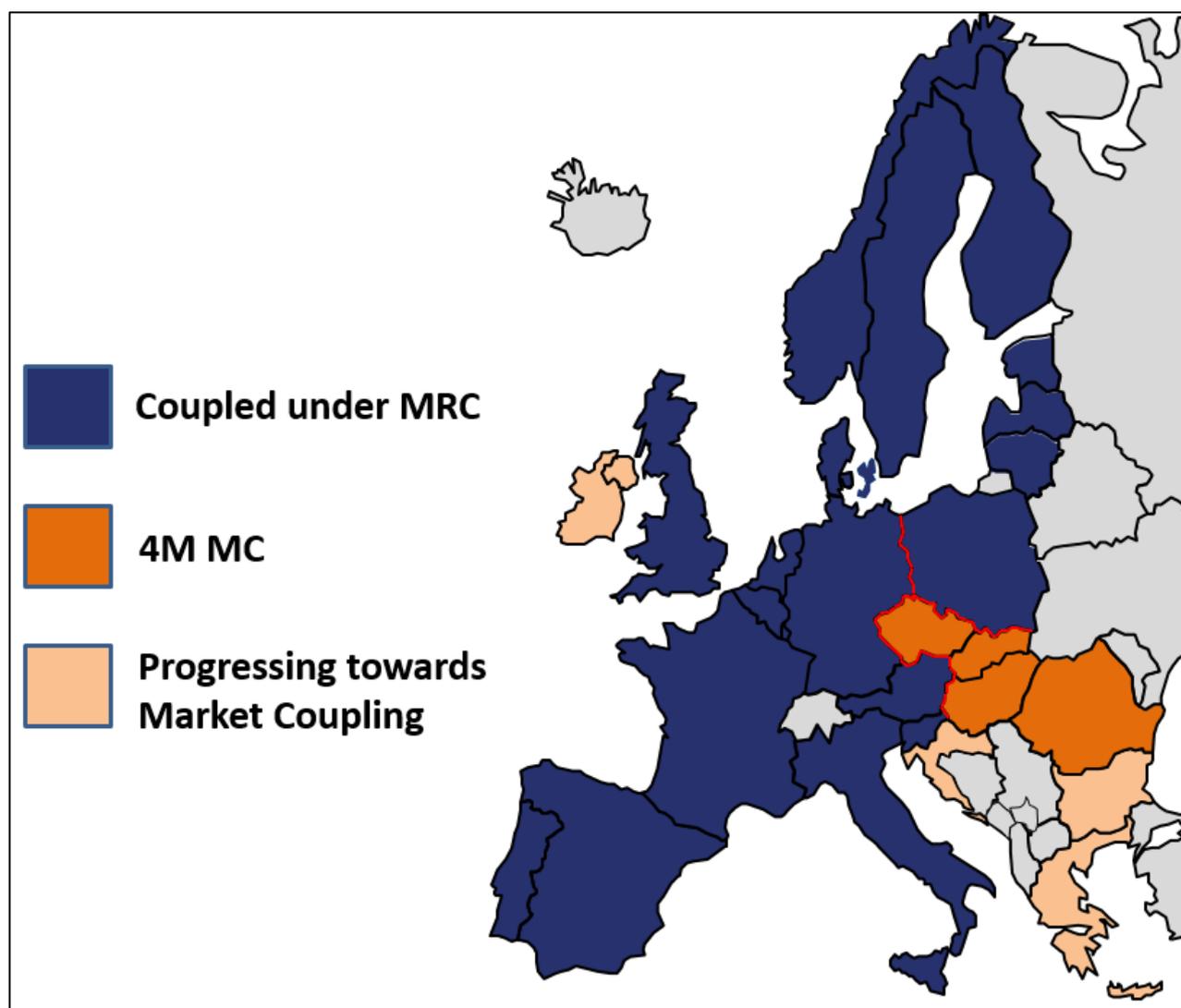


Figure 1: State-of-play in pan-European Single Day-Ahead Coupling as of February 2017⁷

3.2 Current status of the MRC project

The MRC project continues to successfully operate single day-ahead coupling without major incidents (i.e. full / partial decoupling). In light of increasing operational complexity, improvements to the IT systems are frequently introduced (e.g. continuous update of EUPHEMIA algorithm).

Table 1 below provides a concise list of MRC project achievements since August 2016. Table 2 below provides a summary of the quantity of major (i.e. full/partial decoupling) and minor incidents (e.g. delay of publication) in MRC operation since August 2016.

⁷ Red line highlights that borders are not coupled between Austria, Germany, Poland, Slovenia, Czech Republic, Hungary and Slovakia.

| Quarter | Progress / Operational Achievements |
|---------|---|
| Q3 2016 | <ul style="list-style-type: none"> ▪ EUPHEMIA V9.4 fix 2 in operation |
| Q4 2016 | <ul style="list-style-type: none"> ▪ CACM Regulation analysis in respect to changing the Day Ahead Operational Agreement (DAOA) ▪ Evolution of MRC operational capabilities (e.g. Euphemia 9.5 release) |

Table 1 – MRC Progress / Achievements since August 2016

Adaptation to the CACM Regulation obligations is ongoing within the MRC project. Another key challenge is the handling of multiple NEMOs and implementation of related multi-NEMO arrangements, which is currently under evaluation in the relevant sub-regional coupling initiatives.

| Quarter | Major Incidents (i.e. full/partial decoupling) | Minor incidents (e.g. delay of publication) |
|---------|--|---|
| Q3 2016 | 0 | 7 |
| Q4 2016 | 0 | 7 |

Table 2 – MRC Major and Minor Incidents⁸

3.3 Extending the MRC project after the CACM Regulation entry into force

The MRC project is well underway (e.g. SI-AT border is in MRC operation as of July 2016, contractual steps for coupling of SI-HR border via day-ahead Italian Northern Borders project are in progress) despite the fact that some delays have been identified (e.g. extensions to IT-CH, CH-AT, CH-DE, CH-FR; commercialization of BeDeLux Interconnector).

ENTSO-E appointed a high-level project manager in June 2016 in order to proactively manage MRC extensions in CEE and South-Eastern Europe (hereafter referred to as “SEE”) regions. The core objective of this project manager is to support the coordinated, consistent and timely delivery of extension projects by TSOs. Further details are provided in the succeeding sub-chapters.

In addition to the initiatives in the CEE and SEE regions, the reformation of the Irish and Northern Irish electricity market to enable integration with the rest of Europe via the MRC project is on track for go-live in May 2018.⁹

3.3.1 Progress in the CEE region

Regarding the MRC extension project in the CEE region held by the high-level project manager, as introduced in the previous part, the CEE TSOs acknowledged during this reporting period that no unanimous decision could be reached on launching a joint project aiming at establishing an interim NTC-based market coupling between MRC and 4MMC countries plus Poland due to different understandings of the timings and the risks among the Parties. They agree on concentrating their efforts on the implementation of the Flow Based Market Coupling in the CORE region.

⁸ Full disclosure of operational information (including incidents) is provided to NRAs on a regular basis.

⁹ In November 2016, the Irish and Northern Irish Regulators (CER and the Utility Regulator) announced their intention to extend the I-SEM Project go-live date from the 1st of October 2017 to the 23 May 2018.

3.3.2 Progress in the SEE region

The SEE region continues to have the least developed plans for market coupling as described in the first report on the progress and potential problems with the implementation of single day-ahead and intraday coupling.

It is worth recalling the conclusions of the Vienna Summit held in August 2015, where the Western Balkan 6¹⁰ (hereafter referred to as “WB6”) Energy Ministers committed their countries towards regional market coupling and a regional balancing market. As a follow-up the WB6 TSOs successfully negotiated and concluded on 27 April 2016 a “Memorandum of Understanding on regional electricity market development and establishing a framework for other future collaboration” ([MoU](#)). The WB6 MoU sets two main objectives: (1) coupling of national organised day-ahead markets with at least one neighbouring WB6 or EU country by July 2018; and (2) the finalisation of the project implementation agreements; and implementing a cross-border balancing cooperation between the WB6 countries by 31 December 2018. Both projects shall support wider regional and European integration processes. The concerned parties are working together intensively to find the best solution for the given objectives.

As it stands currently, NEMOs have been nominated, in line with CACM Regulation requirements, in Bulgaria, Romania, Croatia and Greece. In WB6 only Serbia has a power exchange (hereafter referred to as “PX”) and Albania has also contracted a consultant with the help of WB6 to develop a PX. The only realistic way, as suggested by the high-level project manager, is to build on national initiatives and to coordinate the steps of the countries to ensure compatibility of the markets.

3.3.3 Next steps of MRC extensions

In the timeline shown in Table 3 below, the steps for extending the MRC are depicted in chronological order. In line with the CACM Regulation, the targets for the extension can be either: (a) CNTC based capacity inputs; or (b) FB; or (c) CNTC based and FB in succession. In any case the displayed target times are indicative and do not account for contingencies. Moreover some of the extensions might partially or fully change and/or be cancelled in favour of alternatives.

| CNTC / FB | Description | Borders | Target time |
|-----------|---|--|-------------|
| CNTC | HVDC Links between the SEM (Ireland and Northern Ireland) and GB joining MRC project (CACM (Article 83) transitional exemption for Irish market reform) | EirGrid (Ireland) – NG (GB); SONI (Northern Ireland) – NG (GB) | May 2018 |
| CNTC | HVDC Link between Greece and Italy joining MRC project (following Greek market reform) | IPTO (Greece) – Terna (Italy) | July 2018 |

¹⁰The WB6 consists of Albania, Bosnia and Herzegovina, Kosovo*, FYROM, Montenegro and Serbia. These six countries are part of the so-called “Berlin Process” with a political aim to facilitate connectivity with EU (for energy and transport) as a step towards future integration. Designation to Kosovo* is without prejudice to positions on status, and is in line with UNSCR 1244 and the ICJ Opinion on the Kosovo declaration of independence.

| | | | |
|------|--|--|-------------------------|
| CNTC | CNTC MC through IBWT as interim coupling step with MRC | ELES (Slovenia) – HOPS (Croatia) | 2017 |
| FB | NWE-CEE FB Market Coupling joining MRC | 50Hertz (Germany) – ČEPS (Czech); APG (Austria) – ČEPS (Czech); APG (Austria) – MAVIR (Hungary); ČEPS (Czech) – Tennet (Germany); 50Hertz (Germany) – PSE (Poland); ČEPS (Czech) – PSE (Poland); SEPS (Slovakia) – PSE (Poland); ELES (Slovenia) – HOPS (Croatia) ¹¹ ; ELES (Slovenia) – APG (Austria) ¹² ; ČEPS (Czech) – SEPS (Slovakia); SEPS (Slovakia) – MAVIR (Hungary); MAVIR (Hungary) – Transelectrica (Romania); MAVIR (Hungary) – HOPS (Croatia) ¹³ ; MAVIR (Hungary) – ELES (Slovenia) ¹⁴ | July 2018 ¹⁵ |
| CNTC | “Western Balkan 6” coupling joining MRC through neighbouring countries | EMS (Serbia) – HOPS (Croatia); EMS (Serbia) – MAVIR (Hungary); EMS (Serbia) – NOS BiH (Bosnia and Herzegovina); EMS (Serbia) – Transelectrica (Romania); HOPS (Croatia) – NOS BiH (Bosnia and Herzegovina); EMS (Serbia) – CGES (Montenegro) | July 2020 |
| CNTC | Greece, Bulgaria and Romania coupling within MRC | ESO (Bulgaria) – IPTO (Greece); ESO (Bulgaria) – Transelectrica (Romania) | July 2020 |
| CNTC | “Western Balkan 6” full coupling within MRC | CGES (Montenegro) – NOS BiH (Bosnia and Herzegovina); CGES (Montenegro) – OST (Albania); EMS (Serbia) – ESO (Bulgaria); EMS (Serbia) – KOSTT ((Kosovo*)); EMS (Serbia) – MEPSO (FYROM); IPTO (Greece) – OST (Albania); IPTO (Greece) – MEPSO (FYROM); KOSTT (Kosovo*) – MEPSO (FYROM); Terna (Italy) – CGES (Montenegro); ESO (Bulgaria) – MEPSO (FYROM) | July 2022 |

Table 3 – MRC extension next steps / indicative timelines

¹¹ HOPS’ accession to the project is in progress.

¹² Borders already coupled within MRC using NTC.

¹³ HOPS’ accession to the project is in progress.

¹⁴ Expected to be commissioned before NWE-CEE-FB MC project’s go-live date.

¹⁵ Roadmap under investigation due to ACER Decision No 06/2016 and related establishment of a CORE region.

4. Progress, challenges and current status of single intraday coupling and the way forward

4.1 Background

The aim of the XBID project is to create a cross-zonal intraday market in Europe. The XBID project is the basis for the implementation of the pan-European single intraday coupling under the CACM Regulation. Currently, the XBID project is comprised of members from 14 European countries as illustrated in Figure 2 below.¹⁶

This intraday market coupling solution will enable continuous cross-border trading across Europe and will be based on a common IT system with a shared order book (hereafter referred to as “SOB”), a single capacity management module (hereafter referred to as “CMM”) and a shipping module (hereafter referred to as “SM”). The common IT system will accommodate the continuous matching of bids and orders from market participants in one bidding zone with bids and orders coming from its own bidding zone and from any other bidding zone within the project’s reach while cross-zonal capacity is still available. It furthermore allows for the participation of multiple NEMOs per country.

There are three distinct work streams associated with the XBID project, namely: (1) the XBID project itself which is the basis of the pan-European XBID solution; (2) the local implementation projects (hereafter referred to as “LIPs”) by current members; and (3) the XBID accession stream (hereafter referred to as “AS”) facilitating future members of the XBID project.

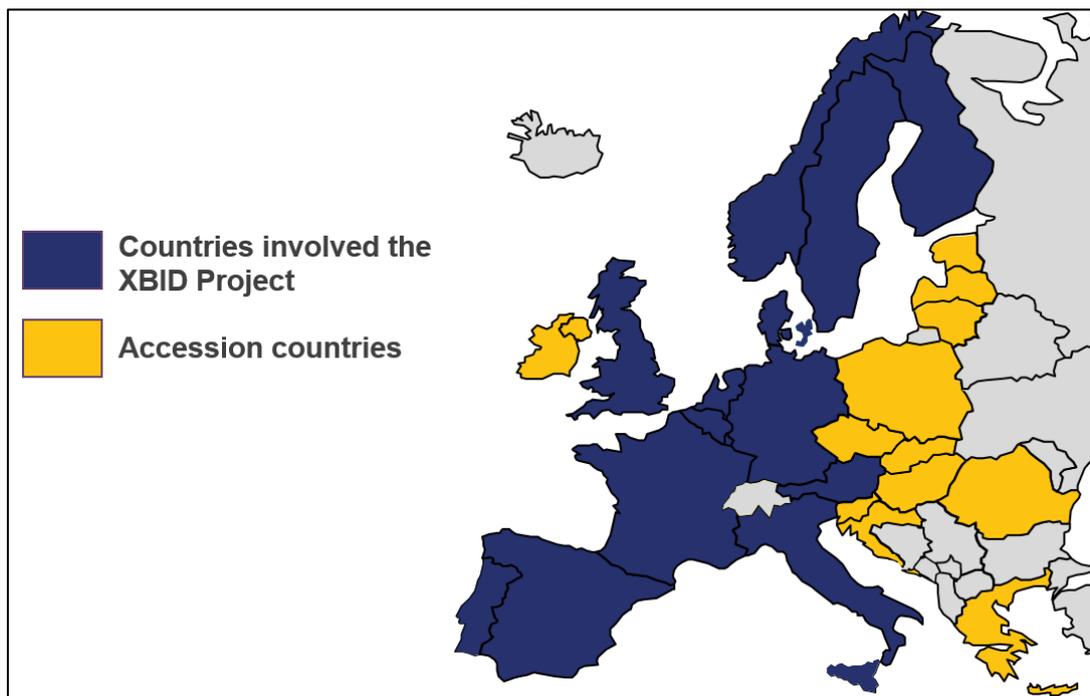


Figure 2: State-of-play in pan-European Single Intraday Coupling as of February 2017

¹⁶ The 14 countries are: Austria, Belgium, Denmark, Finland, France, Germany, GB, Italy, Luxembourg, Norway, Portugal, Spain, Sweden, and The Netherlands. Please note that the TSOs of Italy, Portugal and Spain are currently not members of the XBID project. GME (the Italian NEMO) and OMIE (the Spanish and Portuguese NEMOs) are full members of the XBID Project. REE (Spain) is a direct observer since 2014 and REN (Portugal) as well as Terna (Italy) are in the XBID Accession Stream.

4.2 Current status of XBID project

The XBID solution, i.e. the SOB, CMM and SM modules, is developed exclusively by Deutsche Börse AG (hereafter referred to as “DBAG”). DBAG and NEMOs are jointly the contracting parties for the XBID solution. TSOs involved in the XBID solution contract directly with the relevant NEMOs covering TSO-only related issues (e.g. CMM obligations).

In 2016 the development of the CMM, SM as well as the SOB was completed. All phases of factory acceptance testing (hereafter referred to as “FAT”) have been successfully completed for CMM, SM and SOB. TSO, NEMO and SM integration acceptance testing (hereafter referred to as “IAT”) has been completed and further testing phases are in progress. Additionally, pre-UAT performance test phases have been completed and the user acceptance testing (hereafter referred to as “UAT”) phase I completed is foreseen to be signed off in January 2017, providing some outstanding issues are resolved. Moreover the implementation of the TSO secure communications channels have been successfully completed with the relevant service provider. Furthermore, after extensive and challenging negotiations the XBID solution infrastructure contracts (i.e. for hosting and maintenance) are in a final stage between NEMOs and DBAG. Also the ECP hosting and maintenance contract needed to secure TSO communication channels is foreseen to be finalized by the end of January 2017.

In Table 4 below, major milestones of XBID developments are displayed in chronological order.

| Quarter | Progress / Achievements |
|---------|--|
| Q3 2016 | <ul style="list-style-type: none"> ▪ TSO decision that preferred shipper setup will be used as the interim shipping model with confirmation of support from NRAs. This default solution need to be confirmed at LIP level. Most of the LIPs hav indicated whether this default option will be used or not. ▪ TSO IAT, NEMO IAT, SM IAT, Pre-UAT Performance Test |
| Q4 2016 | <ul style="list-style-type: none"> ▪ Commencement of UAT Phase I (first functional test) |

Table 4 - XBID Progress / Achievements since August 2016

Several challenges are still to be overcome before a successful XBID go-live. These challenges can be categorized into two groups: 1. Go-live preparation; and 2. Future evolution of the XBID solution.

In respect to go-live preparation, LIP readiness is a key challenge in order to ensure a timely start of intraday cross-zonal coupling. In order to ensure the readiness of the LIPs which intend to go-live in the first phase, a stringent testing process needs to be successfully completed in line with the agreed criteria.¹⁷ This is monitored on a monthly basis by NEMO and TSO test coordinators. A full report on the LIP readiness will be available in Q2 2017. Another key challenge is the handling of multiple NEMOs in the relevant shipping arrangements. In Q3 2016, project members opted for the “preferred shipper option” meaning that the preferred Shipping Agent designated by the source PX would be used by default all along the path, ensuring equal treatment amongst competing PXs. However, modifications to the model need to be made in respect to the shipping between competing NEMOs and monopolistic NEMOs (eg. France-Spain or North Italian borders) or areas with single NEMO (eg. Baltic region).

In order to mitigate this challenge, relevant LIPs are currently assessing suitable setups within the interim shipping solution in order not to risk a delay to their go-live.

¹⁷ Main focus of LIP testing is to validate the end-to-end readiness of the borders/interconnectors for which the LIPs are responsible. Based on internal readiness (i.e. back-end systems ready, meeting defined defect criteria, test sets ready), a LIP will start testing on the LIP testing environments.

Regarding the future evolution of the XBID solution, the full compliance to CACM Regulation requirements is the key challenge (e.g. the pricing of intraday capacities, the handling of direct current (hereafter referred to as “DC”) losses or the application of flow-based capacity calculation will not be considered for the go-live and will need to be fully specified and included by use of change requests towards DBAG at a later stage). Moreover, additional investments in the XBID modules as well as the technical infrastructure are likely to be needed in order to be able to handle additional usage of the solution. In order to have early visibility on these matters, a framework to align the requirements between current and future XBID project parties needs to be setup.

Additionally, by mid 2017, an intraday operation agreement (hereafter referred to as “IDOA”) which will become the agreement for the cooperation of NEMOs and TSOs regarding the operation of the XBID solution, shall be agreed by all participating NEMOs and all participating TSOs. However, it may be that initially only the current project partners and the parties going live in the first release sign the agreement. This IDOA shall then be submitted to the NRAs. The IDOA and its annexes shall be compatible with terms, conditions, plans and methodologies developed under CACM Regulation.

Figure 3 provides a diagrammatic overview of the project planning until go-live of the XBID project, predominantly for current members.

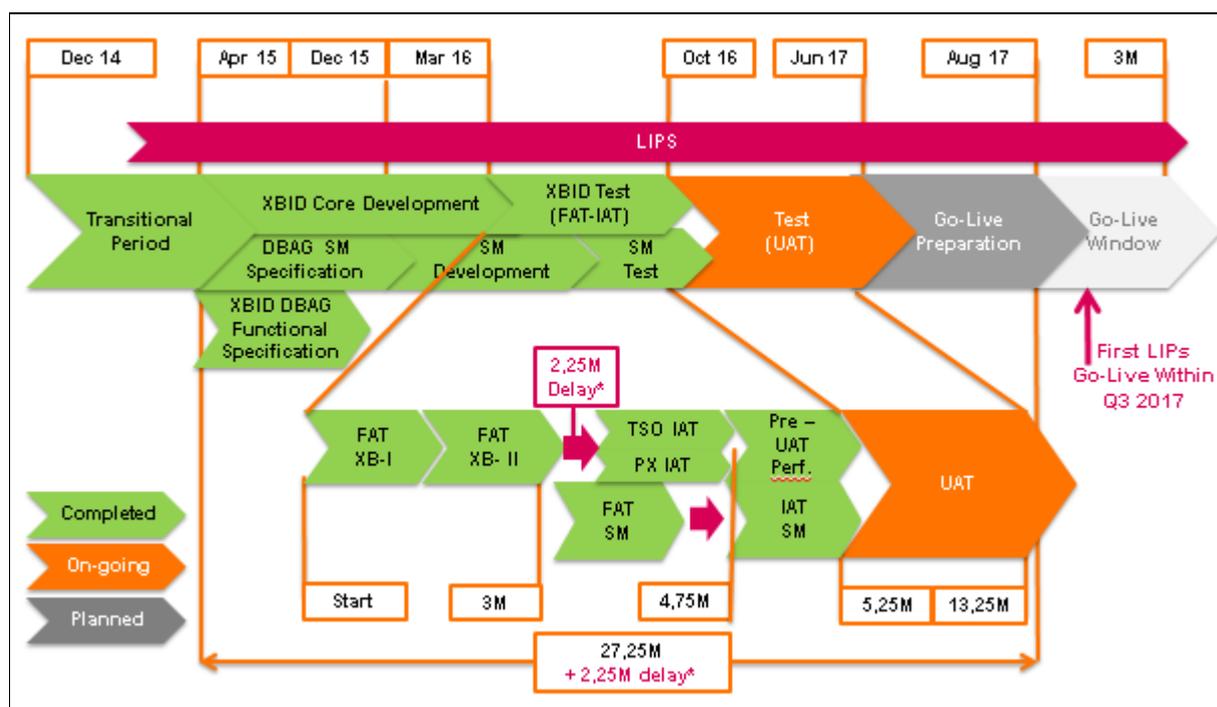


Figure 3: XBID project plan¹⁸

¹⁸ Additional information to the figure: * Delayed commencement of IAT by 9 weeks due to late start of 3rd party support. Time used efficiently to progress important gaps & change requests.

The XBID project continues to be a complex project to deliver. The XBID go-live has been delayed by nine weeks. The go-live, relevant to the LIPs specified in chapter 4.3, is still within the previously planned Q3 2017 (1st Phase of go-live), but will now take place towards the end of Q3.

4.3 XBID LIPs (1st phase of XBID go-live)

In total 10 LIPs are currently participating in the readiness testing in order to be able to take part in the 1st Phase of go-live which will be executed starting in Q3 2017 until the end of 2017 (i.e. a three month window). It is possible that not all LIPs will meet the agreed testing criteria and will therefore go-live in a later phase. The following paragraphs describe each LIP of the 1st Phase and its participants, which takes into account that LIP 7 (BritNed), LIP 10 (IFA) and LIP 14 (Italian Northern Borders) are planned to go-live in a subsequent step.

LIP 1 is called NORDIC LIP and covers all borders within the NORDIC region (i.e. Denmark, Finland, Sweden and Norway). The TSOs Energinet.dk, Svenska kraftnät, Statnett and Fingrid as well as the NEMOs EPEX and Nord Pool are participants to this LIP.

LIP 2 is referred to as DK2/DE (Kontek) and covers a Danish (DK2) and German border. Kontek is the high voltage direct current (hereafter referred to as “HVDC”) cable between Germany and the Danish island Zealand. The TSOs Energinet.dk and 50Hertz are involved in the LIP as well as the NEMOs EPEX and Nord Pool.

LIP 3 is referred to as DK1/DE, DE/NL and covers a Danish (DK1) and German border as well as the border of Germany and the Netherlands. The TSOs Energinet.dk, TenneT Netherlands, TenneT Germany and Amprion, as well as the NEMOs EPEX and Nord Pool, are participants to this LIP.

LIP 4 is called NorNed and covers the border of Norway and the Netherlands. NorNed is the HVDC cable connecting both countries. Statnett and TenneT NL are the participating TSOs here and the NEMOs are EPEX and Nord Pool.

LIP 5 covers the German – French and German – Austrian borders. The participating TSOs are Amprion, TenneT Germany, TransnetBW, APG and RTE. The NEMOs EPEX and Nord Pool are involved. LIP 5 of the 1st Phase of XBID go-live will provide access to explicit capacity allocation via the CMM.

LIP 6 covers the Netherlands and Belgian border and the TSO members are Elia and TenneT Netherlands. the NEMOs involved are EPEX and NordPool.

LIP 8 covers the French and Belgian border. Elia and RTE are participating TSOs and the NEMOs involved are EPEX and NordPool.

LIP 9 and LIP 12 cover the borders of Spain and France as well as Spain and Portugal. REE, RTE and REN are the TSOs involved and the NEMOs OMIE, EPEX and Nord Pool are participating.

LIP 13 is covers the Baltic region as well as the DC interconnectors to the Nordics. The TSOs Elering, Litgrid, AST, Fingrid (for Estlink) and Svenska Kraftnät (for NordBalt) as well as the NEMO Nord Pool are participating to this LIP.

A geographic overview of the LIPs, 1st and 2nd Phase, is illustrated in Figure 4 below.

4.4 Extending XBID project

4.4.1 XBID accession stream

The XBID project initiated an AS with the objective to increase transparency on the pan-European intraday project and to prepare accessions for a timely extension of the project to all TSOs and NEMOs in line with CACM Regulation.

AS parties have decided to formally set-up the group defining and adhering to the AS terms of reference (hereafter referred to as “ToR”), which basically defines the objectives, principles, responsibilities and the decision making process. The parties that have adhered to the AS ToR are: the TSOs and NEMOs PSE and TGE (Poland), Transelectrica and OPCOM (Romania), ELES and BSP (Slovenia), CEPS and OTE (Czech Republic), HOPS and Cropex (Croatia), IPTO and Lagie (Greece), MAVIR and HUPX (Hungary), EirGrid and SONI (in their roles as TSOs and NEMOs for Ireland and Northern Ireland) as well as the TSOs Elering, REN, AST, Litgrid and Terna and the NEMOs OKTE, EXAA and IBEX.¹⁹

The AS is mobilised with regular management events. The transfer of knowledge from current to future XBID parties has been managed through a series of five workshops in 2016.

AS parties are able to participate as observers in all XBID working groups and have also contributed to define some requirements, such as the topology definition for the realistic test scenario (hereafter referred to as “RTS2”). In particular, AS members will actively participate in the definition of the enduring solutions that impact TSOs and NEMOs subject to the CACM Regulation (e.g. the IDOA or the enduring Shipping solution).

4.4.2 XBID LIPs (after go-Live)

AS parties have estimated their next steps of accession, in particular the phases when they intend to go-live. These can be classified in four groups:

1. go-live in the 1st Phase (See Section 4.3);
2. go-live in 2nd Phase;
3. go-live in 3rd Phase; and
4. parties/LIPs who did not express their targets by end of 2016.

In respect to the 2nd Phase of XBID go-live the following LIPs have been formally established or are intending to establish a LIP shortly:

LIP 7 is called the BritNed LIP and incorporates the BritNed HVDC interconnector and the borders of Great-Britain and the Netherlands. The participating TSOs are BritNed Development Ltd, National Grid and TenneT Netherlands. EPEX is the participating NEMO.

LIP 10 is called the IFA LIP and covers the French and GB borders via the HVDC interconnector named Interconnexion France-Angleterre (hereafter referred to as “IFA”). RTE and National Grid are participating in the project as TSOs. EPEX and Nord Pool are participating NEMOs.

LIP 14 Italian Northern Borders (hereafter referred to as “IBWT”) covers the borders IT-FR, IT-AT, IT-SI, IT-GR as well as AT-SI. The parties to this LIP are the TSOs Terna, RTE, Eles, IPTO and

¹⁹ The following TSOs/NEMOs do not yet adhere to the AS ToRs: EMS, Seepex, Sepsas as well as IBEX.

APG. The involved NEMOs are GME, EPEX, EXAA, Nordpool, BSP and Lagie. Similar to the process in the day-ahead market this LIP is likely to go-live on a border-per-border basis.

The 4M parties (consisting of TSOs (CEPS, SEPS, MAVIR and Tranelectrica) and NEMOs (OTE, HUPX, OPCOM and OKTE)) are discussing the possibility of the establishment of a LIP. This accession will only cover borders between the above mentioned parties.

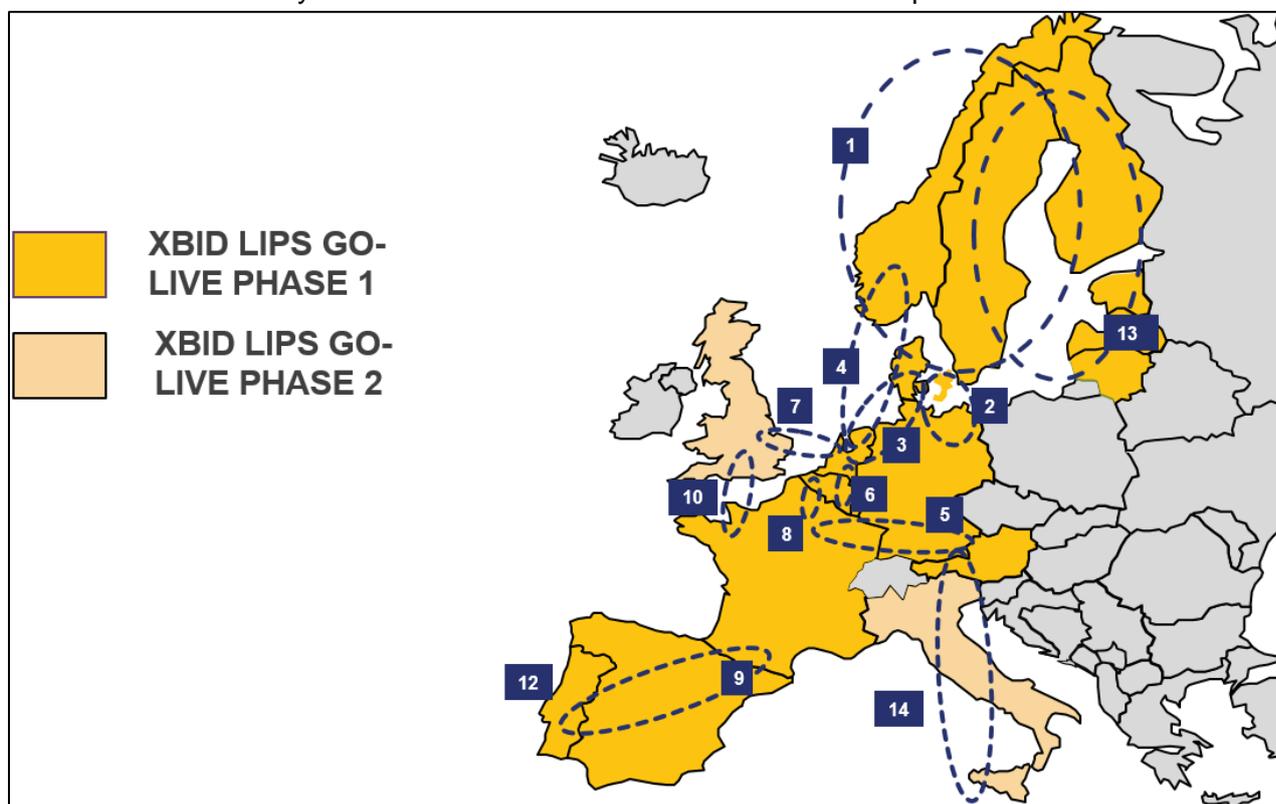


Figure 4: XBID local implementation projects (Phase 1 and 2)

With respect to the 3rd Phase of XBID go-live, the following parties have explicitly stated their willingness to establish a LIP: HOPS and CROPEX (Croatia), as well as the TSO PSE (Poland)²⁰ and the NEMO EXAA (Austria). No formal feedback has been received during this period from the remaining parties (e.g. SEE region).

An interim intraday solution in Ireland and Northern Ireland is currently being developed since the XBID project will not be available for I-SEM go-live in May 2018. It is the intention that this solution will include cross-border auctions.

²⁰ In case of Poland, if possible it will be 2nd phase.

5. Summary

This is the second report to be delivered in compliance with Article 82(2)(a) of the CACM Regulation, which requires ENTSO-E to monitor the progress and potential problems with the implementation of the day-ahead and intraday coupling across Europe. In line with the ENTSO-E Monitoring Plan, this “Report on the progress and potential problems with the implementation of Single Day-Ahead and Intraday Coupling” will be delivered to ACER in February 2017 and covers the period from August 2016 onwards.

The report begins by highlighting the transversal progress in day-ahead and intraday coupling in terms of All TSO and All NEMO deliverables under the CACM Regulation. Particularly, on 17th November 2016, ACER approved the All TSOs CCR proposal subject to an amendment which merges the CWE and CEE regions in a single step to a combined “CORE” CCR. The decision to establish the CORE CCR in a single step is a major challenge for all involved parties including TSOs, NEMOs and NRAs.

The MRC project for pan-European day-ahead coupling covers nineteen countries, representing over 85 % of Europe’s electricity consumption. The MRC project continues to operate day-ahead coupling without major incident (i.e. full / partial decouplings). Progress and achievements include the extension of flow-based in MRC operations to Austria in November 2016.

The XBID project for pan-European Intraday Coupling is comprised of members from 15 European countries. Despite the XBID project being a complex project to implement, in 2016 the development of the SOB, the CMM and the SM was completed followed by several phases of successful testing. Go-live remains on target for Q3 2017, although expected towards the end of this quarter.

Three go-live phases have been agreed within the XBID project. 10 LIPs are currently participating in the readiness testing in order to be able to take part in the 1st phase of go-live. In respect to the 2nd phase of XBID go-live, several LIPs have either already been formally established or intend to establish a LIP shortly. The preparations for the 3rd phase have commenced and are being progressed by the relevant parties.

6. Glossary

| | |
|-------|---|
| 4M MC | 4M Market Coupling |
| ACER | Agency for the Cooperation of Energy Regulators |
| AS | XBID Accession Stream |
| CACM | Capacity Allocation and Congestion Management |
| CMM | Capacity Management Module |
| CEE | Central Eastern Europe |
| CNTC | Coordinated Net Transmission Capacity |
| CWE | Central Western Europe |
| DBAG | Deutsche Börse AG |
| DC | Direct Current |
| EU | European Union |
| FAT | Factory Acceptance Test |
| FB | Flow based |
| FYROM | Former Yugoslav Republic of Macedonia |
| HVDC | High Voltage Direct Current |
| IAT | Integration Acceptance Testing |
| IFA | Interconnexion France-Angleterre |
| LIP | Local Implementation Project |
| MRC | Multi Regional Coupling |
| NDA | Non-Disclosure Agreement |
| NEMO | Nominated Electricity Market Operator |
| NTC | Net Transmission Capacity |
| NWE | North Western Europe |
| PX | Power Exchange |
| SM | Shipping Module |
| SEE | South-East Europe |
| SOB | Shared Order Book |
| SWE | South Western Europe |
| TSO | Transmission System Operator |
| UAT | User Acceptance Testing |
| XBID | Cross-Border Intraday |

The terms used in this document have the meaning of the definitions included in Article 2 of the CACM Regulation.