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Accompanying the document

**REPORT FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT AND
THE COUNCIL**

**on the development of single day-ahead and intraday coupling in the Member States and
the development of competition between NEMOs in accordance with Article 5(3) of
Commission Regulation 2015/1222 (CACM)**

{COM(2018) 538 final}

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I. Introduction

On 14 August 2015 the Commission Regulation (EU) 2015/1222 establishing a Guideline on Capacity Calculation and Congestion Management (CACM) entered into force¹. Pursuant to Article 5(3) of CACM the Commission shall forward a report (Report) to the European Parliament and the Council in accordance with Article 24 of Regulation (EC) No 714/2009 on the development of single day-ahead and intraday coupling in the Member States, with particular emphasis on the development of competition between nominated electricity market operators (NEMOs).

Pursuant to Article 5(3) CACM the Commission shall, on the basis of that Report, notably evaluate if the exemption to allow national legal monopolies or the continued refusal of a Member State to allow cross-border trading by a NEMO designated in another Member State is still justified. In case the Commission deems that this is not the case, it may consider appropriate legislative or other appropriate measures to further increase competition and trade between and within Member States. The Commission shall also evaluate the governance of the single day-ahead and intraday coupling, with particular emphasis on the transparency of the market coupling operator (MCO) functions carried jointly by the NEMOs. If the Commission deems that there is ambiguity in carrying out the monopolistic MCO functions and other NEMO tasks, the Commission may consider appropriate legislative or other appropriate measures to further increase transparency and efficient functioning of single day-ahead and intraday coupling.

The CACM Regulation establishes the principle of competition between NEMOs regarding their competitive activities (i.e. trading services in day-ahead and intraday markets, pre- and post-coupling activities), both (a) by providing that several NEMOs can in principle be designated in one Member State and (b) by allowing NEMOs to offer services in a Member State other than the Member State of designation, without being designated as NEMO in such other Member State ("passport approach"). At the same time it assigns certain tasks to NEMOs for developing and operating the so-called MCO functions for the single day-ahead and single intraday coupling. The MCO function is not part of the competitive activities of the NEMOs. The MCO function is designed as a regulated function that ensures the efficient matching of orders within and across bidding zones for all NEMOs in the European Union through the implicit allocation of cross-zonal capacity. CACM sets the legal and regulatory framework for the performance of the MCO function by the NEMOs accompanied by regulatory oversight. The CACM framework shall be complemented by certain technical methodologies and terms and conditions to be developed by NEMOs and/or transmission system operators (TSOs) and approved by national regulatory authorities (NRAs) at a pan-European, regional or national level. The MCO is obliged to ensure equal treatment of all participating NEMOs in this process.

The Commission's experience with NEMOs competition remains limited at this date, notably due to the delay in the implementation of all regulatory and technical steps necessary to allow competition among NEMOs in the single day-ahead and the single intraday coupling. A comprehensive report on the experience with NEMOs competition and governance of the single day-ahead and single intraday coupling is, therefore, not possible at this stage. The Report and this accompanying staff working document provide a first summary of the preliminary experience with the market coupling framework

¹ OJ L 197, 25.7.2015, p. 24–72.

gathered to date. This analysis is without prejudice to possible future conclusions based on further experience notably with the implementation of the single intraday coupling.

As part of the monitoring of the progress made in the last years and in accordance with Article 5(3) of the CACM Regulation, the Commission forwards this staff working document together with the Report to the European Parliament and the Council. This staff working document focuses and provides more detailed information on the development of competition between NEMOs (II). The Commission also provides a preliminary assessment and evaluation of the governance of single day-ahead and single intraday coupling established by the CACM Regulation, with particular emphasis on the transparency of the MCO functions carried jointly by the NEMOs (III). The Commission's preliminary conclusions are set out in section IV of this staff working document.

II. Development of the single day-ahead and intraday coupling

In accordance with CACM, all designated NEMOs proposed to implement the single day-ahead and single intraday coupling building on contractual arrangements, processes and technical systems that have already been established in existing regional projects. This NEMOs' proposal is included in the so-called "MCO plan" which was approved by all NRAs on 26 June 2017 and it has an impact on the chosen technical solutions but also the governance of the future single day-ahead and single intraday coupling. The approval of the MCO plan confirmed:

- the adoption of the Price Coupling of Regions (PCR) solution as the basis for pan-European single day-ahead coupling;
- the adoption of the Cross-Border Intraday (XBID) solution as the basis for pan-European single intraday coupling; and
- the role of the NEMO Committee as the body representing all NEMOs and responsible to oversee the future establishment, development and operation of the MCO functions.

NEMOs shall implement the MCO plan within one year after its approval.² The Agency for the Cooperation of Energy Regulators (Agency) had to report to the Commission on the progress made in establishing and performing the MCO functions one year after entry into force of CACM³. The Agency has also the right to assess the effectiveness and efficiency of establishment and performance of the MCO function at any time. In case the assessment shows that the requirements are not fulfilled, the Agency may recommend to the Commission further measures for timely delivery of the single day-ahead and single intraday coupling.⁴ Such measures may include appointing another entity or entities with the respective tasks.⁵

² See related documentation in <https://www.europex.org/all-nemos/all-nemos-mco-plan/> and more on the governance aspects of the MCO function below in Chapter III.

³ The Commission received this report on 9 August 2016 and two others thereafter. Due to the fact that the implementation was in very early stage, the Agency was not in a position to evaluate whether the progress made was satisfactory and make a recommendation for additional measures.

⁴ Article 7(5) CACM.

⁵ Article 7(6) and recital 15 CACM.

Apart from the MCO plan implementation, which focuses more on regulatory and contractual arrangements⁶, CACM requires some highly complex and detailed technical rules to be further detailed in TSOs' or NEMOs' proposals which have to be approved by the relevant NRAs at pan-European, regional or national level⁷. A number of such methodologies and terms and conditions have been developed by TSOs or NEMOs and approved by the relevant NRAs, whereas other important methods are still under development or approval. Only if the main methodologies and terms and conditions have been developed, approved and implemented, the effects of CACM can be fully measured and evaluated. In order to avoid delays in the establishment of the single day-ahead and single intraday coupling, CACM includes specific provisions regarding the cooperation between TSOs, NEMOs and regulatory authorities, such as a specific decision-making framework introducing a qualified majority voting rule for the majority of the proposals to be agreed among TSOs and NEMOs, as well as rules for the decision-making process by the regulatory NRAs and, if no agreement between is possible, the Agency.⁸

Even though not yet fully implemented and despite some delays in the development of individual methods, the implementation of CACM has already at this stage brought tangible positive results.

1. Development of the single day-ahead coupling

The "Price Coupling of Regions" (PCR) solution, designed by a regional project before the entry into force of CACM, served as basis for the implementation of the pan-European single day-ahead coupling. PCR uses a governance structure based on a co-ownership agreement and a co-operation agreement among power exchanges⁹. Currently, PCR is applied in 23¹⁰ countries, representing over 85% of the European electricity consumption.

⁶ See under Chapter III of this document regarding the governance of single day-ahead and intraday coupling.

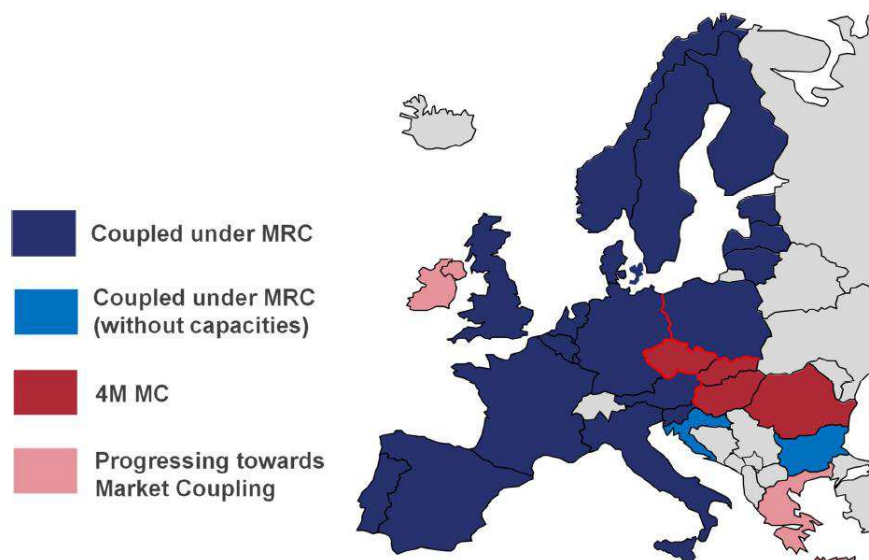
⁷ There are more than 20 methodologies and terms and conditions to be developed and approved at pan-European level as well as several ones in each capacity calculation region (CCR) or at larger/smaller regional or national level. CACM requires the definition of CCRs in the Union within which TSOs will have to apply the same capacity calculation methodologies and cooperate closely in order to meet the objectives of CACM. See for example Article 20 CACM regarding the TSOs proposal for a common coordinated capacity calculation methodology in each CCR or Article 7 CACM regarding all NEMOs proposal for the price coupling algorithm (in day-ahead) and the continuous trading matching algorithm (in intraday) in accordance with the requirements developed by both TSOs and NEMOs. In addition, local i.e. national arrangements need to be put in place as national cost recovery provisions or redesigning of national markets to make them compatible with the CACM target model.

⁸ See Article 9 CACM.

⁹ EPEX SPOT, GME, Nord Pool, OMIE, OPCOM, TGE and OTE, see <https://www.europex.org/all-nemos/all-nemos-mco-plan/>.

¹⁰ The 23 countries are Austria, Belgium, Denmark, Estonia, Finland, France, Germany, Italy, Latvia, Lithuania, Luxembourg, Norway, Poland, Portugal, Slovenia, Spain, Sweden, the Netherlands, Great Britain, and Poland. Croatia and Bulgaria are connected to the PCR via the relevant technical tool (EUPHEMIA) but without interconnector capacities.

Figure 1: State of play in pan-European Single Day-Ahead Coupling as of July 2017¹¹



PCR uses a common price coupling algorithm commonly known as EUPHEMIA (acronym for *Pan-European Hybrid Electricity Market Integration Algorithm*¹²) to calculate electricity prices across Europe and to implicitly allocate cross-border capacity. CACM requires that a "flow based" approach¹³ is used as default method in capacity calculation in all CCRs, unless the TSOs in a certain CCR apply for a "coordinated net transmission capacity" (NTC) approach, which may still be used under certain conditions.¹⁴ The NTC approach is currently still the main approach used for calculating the cross-zonal capacity to be offered through implicit allocation across Europe. In May 2015, the Central West Europe (CWE) region¹⁵ introduced the flow-based approach for capacity calculation in the CWE region, which was then extended to cover Austria in November 2016. In parallel, the so-called "4M market coupling project" (4M MC) went live in November 2015, covering Czech Republic, Slovakia, Hungary and Romania and also applying EUPHEMIA algorithm, based on a NTC approach. Furthermore, some Member States are in the process of redesigning their electricity markets in order to be able to meet the CACM objectives, *i.e.* in order to couple their day-ahead and intraday markets with neighbouring Member States¹⁶. The extension of the flow-based approach to other Member States in the same or other CCRs will be challenging and is necessary in order to fully implement CACM.

¹¹ See [3rd Report on the progress and potential problems with the implementation of Single day-Ahead and Intraday Coupling](#), ENTSO-E, August 2017, page 9.

¹² See public description of the algorithm <https://www.europex.org/all-nemos/all-nemos/>.

¹³ The flow-based capacity calculation method tries to optimise the calculation of cross-border capacities by a more sophisticated analysis of possible cross-border transmission and is particularly useful in areas with highly meshed grids.

¹⁴ Article 20(1) and (7) CACM.

¹⁵ Belgium, France, Luxemburg, Germany and the Netherlands.

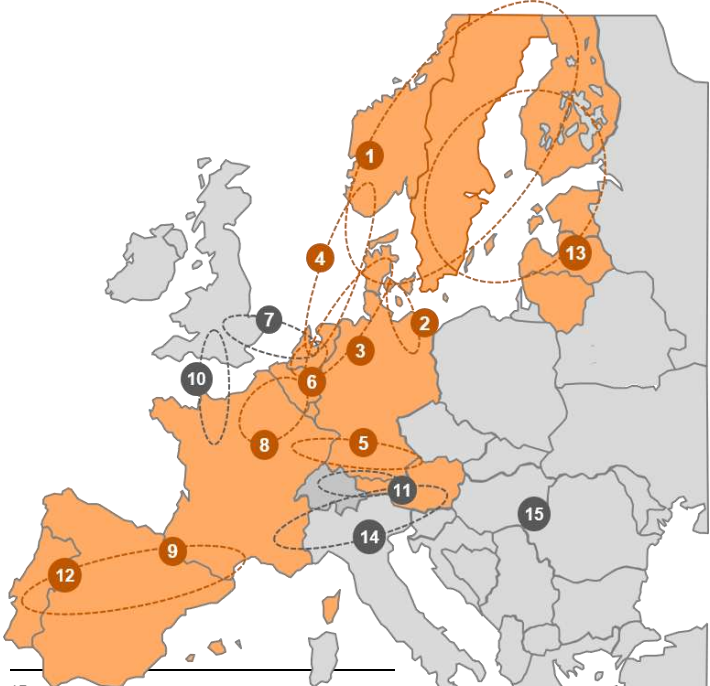
¹⁶ In particular Ireland, Northern Ireland and Greece needed to undergo significant reforms in order to comply with CACM and enable integration with the rest of Europe. Whereas Ireland and Northern Ireland announced the market coupling by May 2018, Greece is also in the process of redesigning the local market.

Technically the PCR in its current form continues to successfully operate day-ahead coupling, with only minor operational incidents. None of these incidents has led to decoupling of any bidding zones. However, in light of increasing operational complexity, improvements to the IT systems needed to be frequently introduced, and further changes are still necessary (for example, the EUPHEMIA algorithm can only accommodate one power exchange per bidding zone¹⁷, which needs to be changed with a view to enabling the inclusion of multiple NEMO arrangements (MNAs), as explained in section II.1. below.

2. Development of the single intraday coupling

The Cross-Border Intraday (XBID) project is the basis for the implementation of the pan-European single intraday coupling under CACM. The XBID became operational on 12 June 2018, comprising as a first step certain but not all bidding zone borders¹⁸. Until the launch of the XBID on 12 June 2018 the project was comprised of TSOs and NEMOs from 14 European countries¹⁹ while all other EU TSOs and NEMOs adhered to the project in order to comply with CACM and the MCO plan.

Figure 2: State of play in XBID project as of 15 June 2018 (Phase 1)²⁰



¹⁷ In Great Britain specific provisional arrangements have been put in place to allow competition between NEMOs in the day-ahead market until the PCR solution is updated.

¹⁸ The XBID project parties launched the first phase of XBID with 10 local implementation projects allowing continuous trading of electricity across the following countries: Austria, Belgium, Denmark, Estonia, Finland, France, Germany, Latvia, Lithuania, Norway, the Netherlands, Portugal, Spain and Sweden.

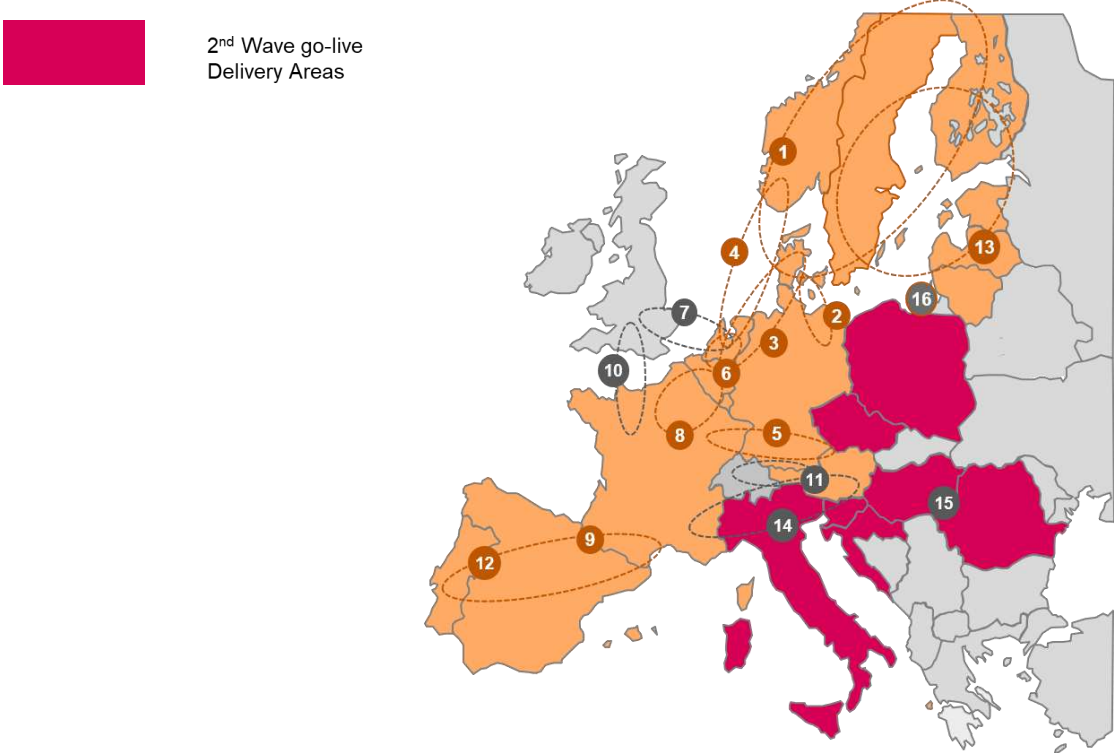
See <https://www.entsoe.eu/news/2018/06/14/european-cross-border-intraday-xbid-solution-and-10-local-implementation-projects-successful-go-live/>.

¹⁹ The 14 countries were Austria, Belgium, Denmark, Finland, France, Germany, Great Britain, Italy, Luxembourg, Norway, Portugal, Spain, Sweden and the Netherlands. See [3rd Report on the progress and potential problems with the implementation of Single day-Ahead and Intraday Coupling](#), ENTSO-E, August 2017, page 18.

²⁰ See https://ec.europa.eu/energy/sites/ener/files/documents/180530-31_xbid_florence_forum_slides_vfinal_0.pdf.

Most other European countries are considered to take part in XBID with additional local implementation projects in a second phase in 2019.

Figure 3: XBID local implementation projects (Phase 1 and 2)²¹



The XBID project enables the single continuous intraday trading across the European Union and is based on a common IT system with three main elements, that is the shared order book (SOB), the single capacity management module (CCM) and a shipping module (SM). The common IT system accommodates 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. Where single continuous trading is in place, existing cross-zonal implicit allocation is replaced. Cross-zonal explicit allocation may continue to exist as a transitional intraday arrangement, in accordance with the requirements of CACM.²² Complementary regional actions may also be implemented on certain bidding zone borders if the CACM criteria are fulfilled²³.

²¹ See https://ec.europa.eu/energy/sites/ener/files/documents/180530-31_xbid_florence_forum_slides_vfinal_0.pdf.

²² Articles 64 - 67 of CACM.

²³ Article 63 of CACM.

The NEMOs appointed a service provider²⁴ to develop the common IT tool on their behalf. As the development of the IT tool includes also TSO-relevant aspects (e.g. the CMM), TSOs and NEMOs have concluded respective agreements regarding the development and operation of the IT tool.

The original contractual arrangements of the XBID project included agreements between the involved power exchanges as well between power exchanges and the XBID service provider or with involved TSOs. These agreements will be complemented by new ones in order to fully comply with the CACM legal framework²⁵.

The XBID project allows for the participation of multiple NEMOs per country as explained below under section II.3, but ensuring its full compliance with the CACM requirements will remain a challenge. Main elements to implement in the future are the pricing of intraday capacities, the incorporation of direct current (“DC”) losses and the ability to accommodate flow-based parameters as cross-zonal capacities in the intraday timeframe.

3. Development of competition between NEMOs

Member States should ensure that all interested NEMOs do not face any legal or de facto barriers to be designated or apply the passport approach. Where a monopoly NEMO exists, Member States may exceptionally refuse the trading services by other NEMOs under certain conditions²⁶.

The possibility to apply the monopoly model and to refuse the trading services by a NEMO designated in another Member State is an exception to the default competition model and should be of a transitional nature. A transitional period can for example be justified as long as the single day-ahead and single intraday coupling has not been extended to certain isolated or less coupled Member States. In certain cases it may be effective to combine the adaptation to the competitive model with the change of arrangements necessary for joining the PCR and XBID system.

On the other hand, given that energy markets are becoming more and more coupled, maintaining legal monopolies functions in the future may have adverse effects on competition in other related activities. Under CACM, NEMOs acting as legal monopolies in a Member State may not be allowed to offer trading services in Member States where the NEMOs' competition model applies²⁷. However, such monopoly entities may develop other business in secondary markets in the latter Member States, indirectly competing with the competitive NEMOs in services not strictly related but indirectly connected with the NEMOs tasks (e.g. IT infrastructure services by the monopoly NEMO to another NEMO in a Member State where the competitive model applies).

Under CACM, NRAs and competition authorities should therefore monitor closely any risk of cross-subsidisation to avoid that NEMOs protected by a legal monopoly abuse their position in secondary markets on which they are not yet dominant. In any event, the monopoly NEMO exception under the CACM does not impair or limit in any way the application of the competition rules enshrined in the Treaty on the Functioning of the European Union (Treaty). In particular, the application of the Treaty's provisions on competition is not confined to risks of cross-

²⁴ Deutsche Börse AG (DBAG).

²⁵ See below under section III.

²⁶ Articles 4(6) and 5 CACM.

²⁷ According to Article 4(6)(d) of CACM the relevant NRA may refuse the trading services in its Member States by a NEMO granted a monopoly status in another Member State.

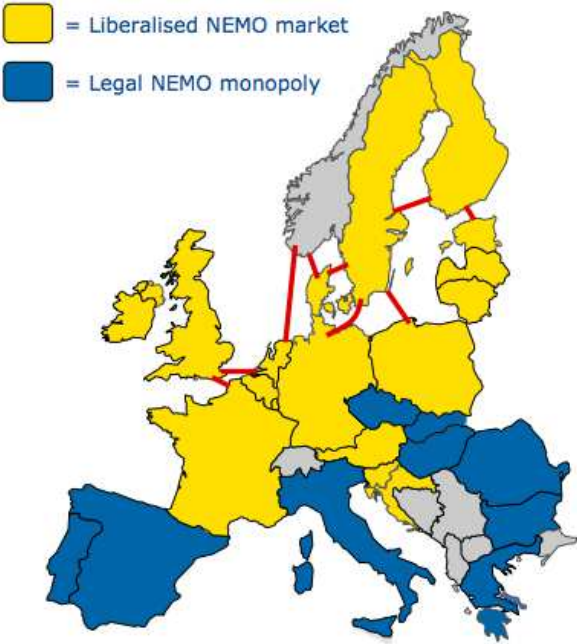
subsidisation, but they apply more broadly to the conduct of the NEMOs on the market and any Member State measure granting NEMO's exclusive rights.

Status of NEMO designations

In accordance with CACM, all Member States bound by it²⁸ have designated at least one NEMO. CACM includes among its objectives the fair and non-discriminatory treatment of NEMOs and TSOs as well the creation of a level playing field for NEMOs.²⁹ So far 17 Member States have decided to apply a competitive NEMO model whereas 9 Member States have introduced a legal monopoly. In this regard, Ireland is a Member State that has changed the status from a legal monopoly to competition among NEMOs. Two NEMOs were designated in Ireland and Northern Ireland and will compete in future once market coupling has been introduced.

Where competition will be applied in the single day-ahead and single intraday coupling, NEMOs may exercise their right to offer trading services in another Member State (passport approach) without a need for designation as a NEMO in that Member State. Several NEMOs have already expressed interest to use the passport approach (e.g. in Austria, France, Germany, the Netherlands, Belgium, Poland and Great Britain).³⁰

Figure 4: Status regarding NEMOs' competitive model in the Union as of April 2018



As shown above, the majority of the Member States bound by CACM decided to apply a competitive NEMO model, i.e. the default model for NEMO designation as prescribed in CACM. Since the entry into force of CACM the number of power exchanges which are willing to become active in other Member States has increased. However, competition in the single day-ahead and single intraday

²⁸ CACM does not apply on islands where the transmission system is not connected with other transmission systems via interconnections, i.e. Cyprus and Malta.

²⁹ Article 3 of CACM.

³⁰ See full list of designated NEMOs here: https://acer.europa.eu/en/Electricity/FG_and_network_codes/CACM/Pages/NEMO%20list.pdf.

coupling will, once applied, still be limited, due to the existence of legal monopolies in several countries. The Commission has received several stakeholder complaints concerning the exclusion from markets as a result from legal monopolies, as well as about administrative problems in the designation process of NEMOs or discriminatory treatment of NEMOs willing to use the passport approach. In particular national rules which still exist in some Member states in parallel to the (exclusive) CACM rules on NEMO-designation raise concerns in this respect (e.g. obligations to establish a local entity even if when the passport is requested, obligations to obtain additional licences, financial and shareholding requirements etc.).

Competition between power exchanges has shown clear advantages in some local markets in the Union. In the UK, competition among power exchanges has been implemented since several years and experience shows positive results, e.g. more transparency and better services.³¹ It seems further that where competition among trading platforms exists, innovation is fostered. In the local UK and German markets where competition among power exchanges but also between power exchanges and over-the-counter (OTC) platforms exists, the markets are characterised by a high degree of product innovation.³² Where monopolies are established, trading opportunities in terms of platforms, innovative products and close to real time trading to allow further integration of renewable sources appear to be more limited.

Implementation of multi-NEMO arrangements (MNA)

Moving from a monopolistic to a competitive model on the basis of CACM requires some technical adjustments of existing solutions and contractual modifications of existing agreements. From the technical side, Articles 45 and 57 of CACM require that, for both day-ahead and intraday timeframes respectively, TSOs in cooperation with NEMOs develop proposals for cross-zonal capacity allocation and other necessary arrangements for bidding zones where more than one NEMO is designated and/or offers trading services³³. These arrangements are called "multi-NEMOs arrangements" (MNA). They are meant to ensure that in such bidding zones NEMOs and interconnectors provide the necessary data and financial coverage for cross-zonal capacity allocation and other arrangements.

The technical implementation of the MNA is a precondition for the functioning of the single day-ahead and single intraday coupling with more than one NEMO in a bidding zone. TSOs and the MCO should treat NEMOs in a non-discriminatory way when establishing these rules and during their execution to ensure compliance with the objectives of CACM³⁴. The status of the MNA implementation differs between the single day-ahead and the single intraday coupling as presented below.

The single day-ahead coupling is based on implicit auctions during which all NEMOs within a bidding zone shall have equal access to cross-zonal capacity. The price coupling algorithm must take into account all orders of each NEMO equally when allocating cross-zonal capacity across bidding zones,

³¹ See data on the UK wholesale market: <https://www.ofgem.gov.uk/data-portal/wholesale-market-indicators#thumbchart-c9407274809200317-n95199>.

³² E.g. introduction of the UK 30 minute intraday auction in 2015 or the 15 minutes settlement product on the German market, designed to better serve consumer needs without, in these cases, putting into danger the homogeneity of the single coupling scheme.

³³ The same applies also to bidding zones where interconnectors exist which are not operated by TSOs certified in accordance with Article 3 of Regulation (EC) No 714/2009.

³⁴ See in particular Article 3(e)(h)(i), Article 38 and Article 51 CACM.

but the current PCR algorithm cannot yet accommodate more than one NEMO in one bidding zone (PCR was developed before the entry into force of CACM). In line with the approved MCO plan, the PCR algorithm still needs to be adapted to accommodate all aspects of multi-NEMO arrangements as established in each bidding zone. The Commission has received complaints regarding the delays in such adaptation and follows closely the developments to ensure that no further unjustified delays occur.

Regarding the intraday timeframe, CACM foresees continuous trading as the target model which is based on a shared order book (SOB) and the capacity management module (CMM)³⁵. The SOB, as developed within the XBID project, can accommodate all orders from all bidding zones and all NEMOs. At the same time, the CMM can ensure that cross-zonal capacity is allocated accordingly to each order coming from the SOB based on the first-come first-served principle. The XBID solution was designed to accommodate multiple NEMOs in each bidding zone from the beginning and does therefore not raise the concerns expressed for the day-ahead timeframe.

Some aspects related to competition between NEMOs and the MNA have been reported to the Commission which are particularly challenging. They still need to be clarified and potentially harmonised in the MNA or in other arrangements for the day-ahead as well as the intraday timeframes. Such issues are the cost sharing and cost recovery of TSOs' and NEMOs' costs for the development and operation of the single day-ahead and single intraday solutions, the agreement on some post-coupling arrangements (clearing and settlement) or the sharing of NEMOs' order books in case of decoupling³⁶. At the point of drafting this document, no final agreement among the relevant parties on these issues was found. It therefore remains to be seen whether and to what extent applying different NEMO rules between bidding zones may hamper competition among NEMOs.

Cost sharing and cost recovery arrangements

The new framework established by CACM had also an impact on cost sharing and cost recovery arrangements for NEMOs and TSOs. While main principles are set in CACM³⁷, decision on cost issues remains a national responsibility. Whereas previous pilot projects were fully recovered by TSO tariffs, such cost recovery arrangements had to be reassessed and partially modified in several Member States. The question how costs should be shared (e.g. among Member States, between TSOs and NEMOs and between NEMOs where competition applies) has been discussed in length and is to a certain extent still open, leading to delays and hampering, to a certain extent, the cooperation between TSOs and NEMOs³⁸.

Clearing and settlement arrangements

Article 68 CACM contains rules on so-called post-coupling activities, i.e. clearing and settlement of all matched orders. Every NEMO, in order to be designated, shall be able to act as a central counter party to market participants and to each other and provide necessary clearing and settlement services with financial resources required to perform its tasks. Shipping agents may also act as counter party

³⁵ See details under section II.3. of this document.

³⁶ The sharing of the order books in case of decoupling is obligatory based on the MNA in the Nordic region but not in the CWE region.

³⁷ See articles 75 to 80 CACM.

³⁸ See on potential governance reforms below, III.

between central counter parties (i.e. NEMOs) if the relevant parties conclude a specific agreement to do so.

In order for healthy competition to develop within and across Member States and the objectives of Article 3 CACM to be complied with, Article 77 CACM provides that relevant costs fall under regulatory scrutiny. The provision requires that clearing and settlement arrangements are put in place by central counterparties and shipping agents. The costs related to these tasks may be recovered in accordance with CACM if they are reasonable and proportionate. The clearing and settlement arrangements should avoid unnecessary costs and take into account the risk entailed in these operations. In accordance with Article 77(2) CACM the cross-border clearing and settlement arrangements, if any, should be approved by all relevant NRAs.

Two main different approaches are applied currently regarding the performance of the clearing and settlement tasks: Whereas a NEMO may perform itself the function of a central counter party and shipping agent, another NEMO may choose to delegate such tasks to another entity, capable to perform the said tasks. CACM allows both models to be applied, whereas the rule concerning the cost recovery of fees as presented above shall be respected in all cases. Thus, fees imposed by NEMOs or third parties on their behalf which do not fulfil these criteria cannot be recovered and should, therefore, be avoided.

III. CACM governance of single day-ahead and single intraday coupling

For efficiency reasons and in order to implement the single day-ahead and single intraday coupling as soon as possible, CACM provides that existing market operators and existing solutions should be used where appropriate and without precluding competition from new operators. At the same time, it is expressly mentioned in CACM that the Commission, in cooperation with the Agency for Cooperation of Energy Regulators (Agency), may create or appoint a single regulated entity to perform common MCO functions relating to the market operation of single day-ahead and intraday coupling.³⁹

The existing solutions (PCR and XBID) had a governance structure agreed by the project parties, whereby a group of TSOs and power exchanges was jointly leading these early implementation projects. Building on the existing arrangements, CACM provides that all NEMOs must cooperate closely with each other, and with TSOs where required, to implement CACM. The CACM Regulation sets only a general framework for such cooperation and provides some principles to avoid discrimination⁴⁰, while the development of the details of the cooperation was left to the NEMOs, in cooperation with TSOs. Such framework includes in particular the following arrangements.

The MCO plan

A milestone for the future governance of the single day-ahead and single intraday coupling is the MCO plan⁴¹. The deadline for the implementation of the MCO plan is one year after its approval, i.e. June 2018. By then the technical and contractual tasks described therein have to be completed.

³⁹ See recitals 14 and 15 CACM.

⁴⁰ See e.g. Article 7(4) CACM.

⁴¹ Article 7(3) CACM.

The main objective of the MCO plan is to provide clarity regarding the technical solutions, the contractual arrangements as well as main principles for the operation of the single day-ahead and single intraday coupling algorithms.

The proposed day-ahead and intraday MCO arrangements build on contractual arrangements, processes and systems that have already been established in the PCR and the XBID project. The MCO tasks include the development and maintenance of the single day-ahead and single intraday algorithms, systems and procedures for single the day-ahead and single intraday coupling, processing input data on cross-zonal capacity and allocation constraints provided by coordinated capacity calculators, operating the price coupling and continuous trading algorithms and validating and sending single day-ahead and single intraday coupling results to NEMOs.

The governance structure proposed in the MCO Plan includes the following contracts:

- a) the “All NEMO Cooperation Agreement” (ANCA);
- b) for the single day-ahead coupling, the NEMO DA Operational Agreement which will govern the cooperation between the NEMOs, the service provider and the assets owners;
- c) for the single intraday coupling:
 - i. the NEMO ID Operational Agreement which will govern the cooperation between the NEMOs;
 - ii. the intraday operational agreement between all NEMOs and all TSOs including the back to back agreement between NEMOs and TSOs due to the fact that only NEMOs are in direct contractual relationship with the service providers which affects partially TSOs tasks (e.g. the capacity allocation functions of the algorithm); and
 - iii. various contracts with the relevant service providers.

The existing contractual arrangements for the PCR and XBID projects are the basis for the governance structure proposed with the MCO plan and need to be updated in order to fully comply with CACM while NEMOs and TSOs, not yet parties to these agreements, need to adhere to the new agreements.

Day-to-day management

The success of the single day-ahead and single intraday coupling depends not only on the proper development of the said solutions, but also on a well-functioning management of the day-to-day operation. TSOs and NEMOs are in the process of developing arrangements for such management which should, for example, provide for regular meetings to discuss and decide on day-to-day operational issues.

Development of methodologies related to the single day ahead and single intraday coupling

In addition to the MCO Plan, CACM requires the development of several methodologies and terms and conditions in order to complete the design of the single day-ahead and single intraday coupling. Some shall be developed by TSOs, others by NEMOs (due to the target model set by CACM which is based on implicit allocation). However, even if the single day-ahead and single intraday coupling is highly linked to the methodologies developed by TSOs, the implementation and execution of such methodologies is dependent on the performance and governance of the MCO function, which is, pursuant to the current CACM concept, a NEMOs responsibility. The cooperation between TSOs and NEMOs has proven challenging in some fields, in particular where some aspects of the cooperation

are left open in CACM, such as the cost sharing and cost recovery rules as presented below, the prioritisation of tasks and certain governance aspects.

As an example, the NEMOs shall propose a description of the algorithms for the day-ahead and intraday timeframe, and technical requirements taking into account technical requirements developed by the TSOs⁴². How the technical requirements will be set and how the implementation will take place (i.e. which change will be given priority when updating the algorithms) may differ, depending on the interests of TSOs or NEMOs. Another important deliverable under CACM, the TSOs' regional proposals on the respective capacity calculation methodologies for single day-ahead and intraday coupling in each region are not yet approved, and their implementation is not expected before 2019 or later in some regions.

Challenges regarding governance

The increased number of the parties involved in the implementation of single day-ahead and intraday coupling, the new arrangements for cost sharing and cost recovery in accordance with CACM and other governance issues as decision making rules present challenges for all NEMOs and all TSOs as well as NRAs. Such challenges have not been experienced to that extent when the number of parties was smaller in the pilot projects, neither in other cases of NC implementation, as for example during the establishment of the single allocation platform under Commission Regulation (EU) 2016/1719 establishing a guideline on forward capacity allocation (FCA).

In general and in order to avoid deadlocks, CACM establishes rules to prevent that certain proposals are blocked by individual TSOs or NEMOs, i.e. a qualified majority voting principle applies for the majority of pan-European proposals and regional proposals where a region is composed of more than five Member States.⁴³ However, some proposals shall be decided upon based on unanimity by the relevant TSOs, a process that may lead to additional delays in the submission of certain methodologies. Once a proposal is submitted, relevant NRAs shall agree on the approval of the TSOs/NEMOs proposals or in case of disagreement, the decision making is referred to the Agency. In many cases, the relevant NRAs have requested for amendments of submitted methodologies whereas in a significant number of cases the decision had to be taken by the Agency. Such a lengthy development and approval process linked to the complex governance structure of TSOs, NEMOs and NRAs has delayed the timely implementation of CACM.

Challenges may arise also in terms of efficiency in the operation of the algorithm with the increase of number of NEMOs competent to perform these tasks. Regarding day-ahead coupling, the PCR algorithm is run by several NEMOs in a rotating way, whereas in the XBID project the operation of the continuous market algorithm, once it is put in operation, is assigned to a service provider. NRAs have to ensure the ability of the NEMOs or of a third party assigned with this task to be able to perform the MCO function in accordance with CACM.

A complexity in the implementation of the MCO plan lies also in the fact that the latter is binding upon NEMOs while some respective methodologies and contractual arrangements need the contribution and/or agreement by all TSOs. This is because the single day-ahead and single intraday

⁴² NEMOs also proposed rules on maximum and minimum clearing prices, back up methodologies and products which have been approved by all NRAs. See relevant information and the detailed methodologies in <https://www.europex.org/all-nemos/all-nemos/>.

⁴³ Article 9 CACM.

coupling is a process where collected orders are matched and cross-zonal capacity is allocated simultaneously for different bidding zones in the given timeframe. As CACM appoints the NEMOs as mainly responsible for the development of the single-day ahead and single intraday coupling solutions, while the TSOs are mainly responsible for the calculation and allocation of cross-zonal capacity, a clear determination of tasks, responsibilities and cost sharing/cost recovery arrangements is required. In particular cost sharing and cost recovery is only partially harmonised across the Union based on principles set in CACM. The concrete arrangements depend on TSOs/NEMOs proposals and approvals at pan-European, regional or sometimes national level. Experience gathered so far shows that legal uncertainties around cost sharing and cost recovery and lack of harmonisation led to delays and significant disagreement among relevant parties at several occasions.

In addition to the challenges faced when implementing the MCO plan, the implementation of the proposals on the description of the algorithm, including technical requirements and the proposals defining the products has shown challenges. While deciding on these matters, it is essential to ensure that NEMOs are treated in a non-discriminatory way and that the current solutions are compliant with the CACM requirements (or they can be further developed to be compliant). They also need to allow for geographical extensions so that all bidding zone borders between Member States are coupled as soon as possible. The chosen solutions as designed and partially applied so far have not been designed to cover all CACM requirements, all bidding zone borders in the Union and all kinds of complex products offered to market participants. Potential changes to update the current technical solutions may address this challenge in the long term. Until this happens, robust governance ensuring a level playing field and fair treatment of all parties is required. A balance has to be found, for example, between complex products applied in the bidding zones and the geographical extension of the current solutions to cover the entire Union. Cost sharing and cost recovery as well as decision-making rules need to be clearly defined in order to deal with the further development of the technical solutions in a timely manner.

Having identified the above challenges in particular on the XBID project, the Commission has started work with the relevant parties in order to assess the need for improvement of the current governance. The first workshop of the XBID Working Group on Governance took place on 8 December 2017 and the second one followed on 23 February 2018. The meetings identified the points of discussion and focused until now on the improvement of the contractual relationship between the XBID service provider and the NEMOs/TSOs, as well as the NEMOs/TSOs governance in the intraday timeframe. Follow-up workshops will be organised within 2018, with a view to discussing progress made by the parties as well as any necessary measures towards a more efficient organisation of the MCO function.

IV. Conclusion

Regarding the abolishment of the NEMO monopoly model

From the preliminary experience so far, notably in the field of day-ahead market coupling, the competition model has been implemented by the majority of Member States in the Union without major obstacles. Thus, there are no manifest reasons to change the approach chosen by CACM and to exclude competition, notably given the benefits evidenced in competitive Member States towards Member States with monopoly NEMOs regarding more advanced markets and more innovation regarding products and trading opportunities.

As CACM is still under implementation at the time of publication of the Report and the staff working document and NEMOs competition has not yet started or shown its full effect in the Member States where no monopoly exists, the Commission will not take a conclusive view at this stage on whether it is justified to abolish the possibility for Member States to provide for a legal monopoly. The possibility to apply the monopoly model and to refuse the trading services by a NEMO designated in another Member State is still considered as an exception to the default competition model.

However, the monopoly NEMO exception under the CACM does not impair or limit in any way the application of the competition rules enshrined in the Treaty on the Functioning of the European Union (Treaty). In particular, the application of the Treaty's provisions on competition apply broadly to the conduct of the NEMOs on the market, including risks of cross-subsidisation, and any Member State measure granting NEMO's exclusive rights. Therefore, as non-discrimination and a level playing field among competitive and monopoly NEMOs need to be ensured, the Commission will continue to monitor the progress of day-ahead and intraday market coupling, as well as the effects of NEMO competition in the European Union.

Regarding the progress of the single day-ahead and intraday coupling

The potential to increase competition and trade between and within Member States depends on the full and timely implementation of market coupling. As concerns the governance structure of the parties organising market coupling, this includes notably the completion of the various TSOs/NEMOs/NRAs tasks, the adaptation of the current technical solutions to the CACM requirements and the extension of the current day ahead and intraday coupling to the entire European Union. In particular, a focus will be the full extension of the single day-ahead coupling to South East Region as well as the future extensions of the XBID project to other bidding zone borders. The Commission underlines the priority of the extension of market coupling to all Member States before the current solutions are updated (e.g. to include more complex products). A simplification of cross-zonal trading products can be a short- to mid-term solution to accommodate such extensions, accompanied by a longer term update of the IT solutions.

The preliminary analysis of the progress made in the development of the single day-ahead and intraday coupling shows that the roles and responsibilities of NEMOs and TSOs in the development and operation of the coupling solutions need to be better clarified. While CACM appoints NEMOs with the main responsibility for these tasks, TSOs should be more involved and have a decisive role in technical requirements related to capacity calculation and allocation. Such an involvement should be balanced by appropriate and clear cost sharing and cost recovery mechanisms. Roles and responsibilities need to be clarified regarding clearing and settlement as well the function of the shipping agent.

Moreover, the experience shows that the MCO function plays a central role for the completion of the target model and the enhancement of NEMOs' competition. The Commission sees a need to discuss the challenges faced so far and assess the various options for a potential change in the governance of the MCO function. Similar to other platforms in other timeframes, as the single allocation platform in forward capacity allocation or the pan-European balancing platforms in the balancing timeframes, the responsibility for the MCO function could be more clearly regulated with separate governance, accounts, decision making, cost-sharing and costs recovery rules. Such a structure would ensure that no NEMO can benefit from unjustified economic advantages through participation in MCO functions,

that TSOs would be sufficiently involved and clearly assigned with specific tasks whereas cost issues would be clarified. Pre- and post-coupling activities like clearing and settlement or shipping could remain outside such a regulated MCO function, thereby fully preserving the scope for NEMOs to compete.

Further implementation in the next months and years will allow drawing better conclusions. Regarding the single day-ahead coupling the implementation of the multi NEMO arrangements will show whether measures regarding the governance in the day-ahead timeframe are appropriate. Based on the ongoing discussions in the XBID working group on governance, the Commission may also consider changes to the existing governance of the single intraday coupling.

The Commission remains strongly committed to continuing the work towards the creation of the single day-ahead and single intraday coupling in order to bring further benefits to European citizens through market integration. When it comes to fully reaping the potential of cross-border trade, the best recipe remains the full and timely implementation of CACM.