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COMMISSION DE REGULATION
DE L'ELECTRICITE ET DU GAZ

STUDY

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on

'the governance of power exchanges: competition or regulation?'

30 January 2014

EXECUTIVE SUMMARY

Governance of the day-ahead and intraday markets is a key element of the implementation of the EU target model. The finalisation of the Capacity Allocation and Congestion Management Network Code triggered a lot of discussion on possible paths for this governance. With this study, the CREG takes the opportunity to presents its views on this important issue.

This study focuses only on the activity of power exchanges linked to the day-ahead and intraday markets where market players take physical positions. It does not concern other activities of PXs linked to forwards and futures and to other commodities.

The EU target model for congestion management foresees the implementation of a day-ahead Market Coupling (hereinafter “MC”) covering the whole Europe. The entity or entities organising the Market Coupling – the Power Exchanges (hereinafter “PXs”) – will in this market design control the access to the transmission capacity between bidding zones (very often countries) in D-1. As the PXs are the sole actors providing such access, they will act from a monopoly position, which makes the issue of how they are governed the more crucial. The manner in which PXs are currently governed in Europe is varied, with regulated, semi-regulated and commercial PXs active in the various Member States. The European Commission’s own thinking on the governance issue has changed recently. In the version of the draft network code on Capacity Allocation and Congestion Management (hereinafter “CACM NC”) of the beginning of 2013, the proposed governance structure for PXs falls half way between a regulated activity and an activity subject to some competition. However, in the context of a competition law investigation of PXs activities, the European Commission proposes today governance based on competition between PXs in the same bidding zone on a mandatory basis.

This study pleads in favour of a regulated structure for PXs, provided the regulatory status quo is not acceptable. It argues that the European Commission’s concept of mandatory competition between PXs is undesirable, as it threatens the further integration of the internal market and the implementation of the target model. The study will show that the benefits linked to the competition are indeed far outweighed by the drawbacks caused by it.

The study also pleads in favour of the creation of an Market Coupling entity (hereinafter “MCO entity”) for the speedy implementation of the EU target model. In this particular case, a competition between locally remaining PXs activities related to the day-ahead and intraday may be envisaged, even if related benefits are not proven.

Electrical laws of physics have as consequence that coordination and harmonization of traded products together with adequate locational information is mandatory for an efficient use of the transmission network and for an efficient market outcome.

The European Target model foresees the introduction of a flow based market coupling performing the coordinated clearing of properly delimited zonal markets in day-ahead. No cross-border OTC trade is allowed. The role of PXs cannot be separated from the role of the TSOs for market coupling related activities (MCO function). National PXs (NEMOs) condition the access to the transmission capacity, which is a clear TSO responsibility. And for efficiency reasons, the EU Target Model gives a monopoly role to the PXs in day-ahead and intraday for accessing cross-zonal transmission capacities. For these three reasons, PXs have to be regulated (fees, products definition, costs recovery and monitoring). In the case of the creation of an MCO entity (which is not the case today), competition between residual local NEMOs activities may be acceptable.

The current differences in national market designs do not allow the establishment of a level playing field for competing PXs. Competition between PXs will result in product differentiation that will lead to further market segmentation and inefficient market outcome. Competition between PXs may also result in (small) fee differentiation that may reduce the efficiency of competition between market players, increase the cost for trading and deteriorate locational price signal and price reference. Finally, mandatory competition between PX will endanger the implementation of the EU target model and increase overall implementation costs.

If the current governance arrangements are not acceptable and if the monopoly character of the PXs activity in day ahead and in intraday is considered a fundamental problem that has to be tackled, it is recommended that instead of moving towards mandatory competition between several PXs in the same bidding zones, (national) PXs should be regulated by (national) NRAs/MS in line with Third package arrangements.

This national regulation should constitute an intermediate step or solution towards the creation of a pan-European regulated MCO entity.

INTRODUCTION

Governance of the day-ahead and intraday markets is a key element of the implementation of the EU target model. The finalisation of the Capacity Allocation and Congestion Management Network Code triggered a lot of discussion on possible paths for this governance. With this study, the CREG takes the opportunity to presents its views on this important issue.

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This study pleads in favour of a regulated structure for PXs, provided the regulatory *status quo* is not acceptable. It argues that the European Commission’s concept of mandatory competition between PXs is undesirable, as it threatens the further integration of the internal market and the implementation of the target model. The study will show that the benefits linked to the competition are indeed far outweighed by the drawbacks caused by it.

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This study is divided in 9 sections. The fundamentals of electricity trading are explained in section 1. The role of PXs is examined in section 2. The issue of non-discrimination is presented in section 3. The EU target model and the corresponding governance of PXs is presented in section 4. In section 5, some information on the Project Coupling of the Regions is provided. In section 6, the governance proposed by the European Commission the 22 of November is presented. Section 7 explains why, if a status quo is non-acceptable due to the creation of *de facto* monopolies, the regulation of PXs should be the rule. Section 8 analyses the impact of mandatory competition between PXs on the internal market. In the "Conclusions", all arguments are summarised.

This study has been approved by written procedure starting on January 29 and ending on January 30, 2014.

I. FUNDAMENTALS OF ELECTRICITY TRADING

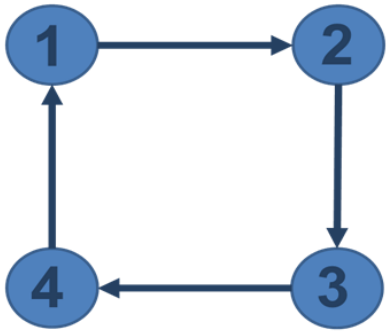
1. Electricity is a special commodity that cannot be stored and that cannot (or only with difficulties) be transported. These two characteristics have a direct impact on market design and its organisation. This impact will be illustrated with a synthetic example.

I.1. Kirchhoff laws and synthetic example

2. Kirchhoff has established two laws describing the way how electricity flows in meshed network. The first law specifies that the algebraic sum of currents in a network of conductors meeting at a point is zero. The second law states that the sum of all the voltages around a closed loop is equal to zero. These two laws allow saying that in a meshed network of nodes and links, an electricity exchange (trade) between two nodes will follow all possible paths between the two nodes, and the path with the lower resistance (the “shortest electrical” path) will carry the most important part of the exchange (trade).

3. A synthetic example of a power system is used in this study to illustrate the impact of electricity trade on the flows in the transmission network. This synthetic example, presented at the picture below, is made of 4 lines (L_{12}, L_{23}, L_{34} and L_{41}; lines have an origin and a destination used as reference for indicating the direction of flows) and 4 nodes (labelled 1,2,3 and 4) which are only places for injecting/taking electricity. The technical characteristics of the system are the maximum capacity of the power lines, respectively 1000 MW, 1000 MW, 1000 MW and 80 MW for the lines L_{12}, L_{23}, L_{34} and L_{41} and the impedance of these lines which are all equal.

4. These impedances are translated in a Power Transfer Distribution Factor (“PTDF” hereinafter) which represents the impact of a power transfer from a node x to node 1 used as reference on a given line. This matrix is presented at the picture below.



PTDF Matrix: node to node on line

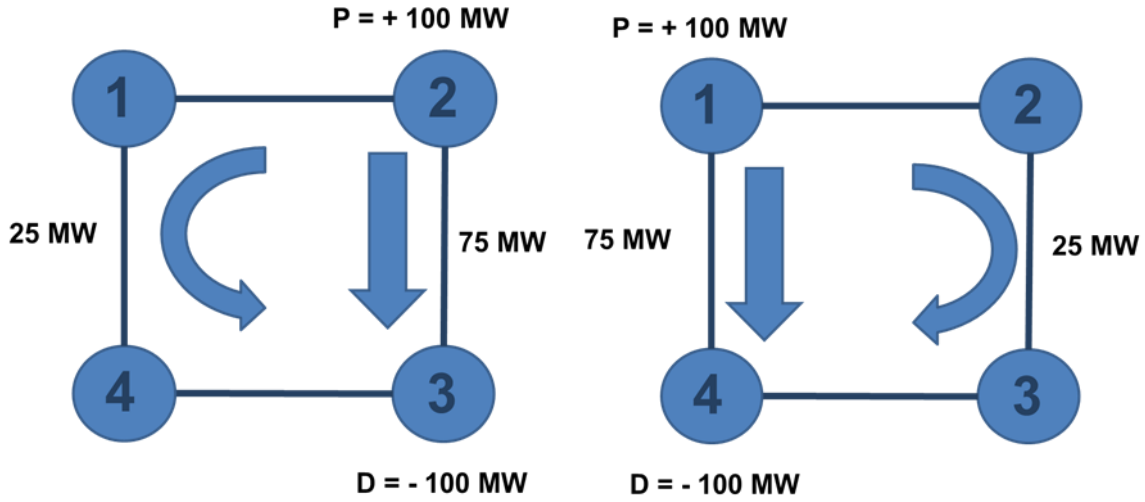
Line	Transactions (node to hub)			
	1 => 1	2 => 1	3 => 1	4 => 1
L12	0	-0,75	-0,5	-0,25
L23	0	0,25	-0,5	-0,25
L34	0	0,25	0,5	-0,25
L41	0	0,25	0,5	0,75

5. The impact of one trade of 100 MW from node 2 to node 3 on system flows is presented in the left part of the picture below (it is assumed that the network is empty before this trade is made). Corresponding physical flows are spread through the whole transmission network, and not only via the direct line $L_{23,}$ The physical flows going through lines L_{12}, L_{41} and L_{34} are very often called “loop-flows”. These loop-flows are a source of externalities for economists.

6. It is important to realize that **one** bilateral trade between a producer (seller) and a consumer (buyer**) affects** the possibilities of trade of all other possible consecutive bilateral trades due to the physical laws of electricity in all parts of the transmission network, some of them being located very far[1]. In other words, any trade between two nodes of the system modifies the remaining possibilities of trade inside the whole transmission network. So, one trade **conditions the access** to the transmission network.

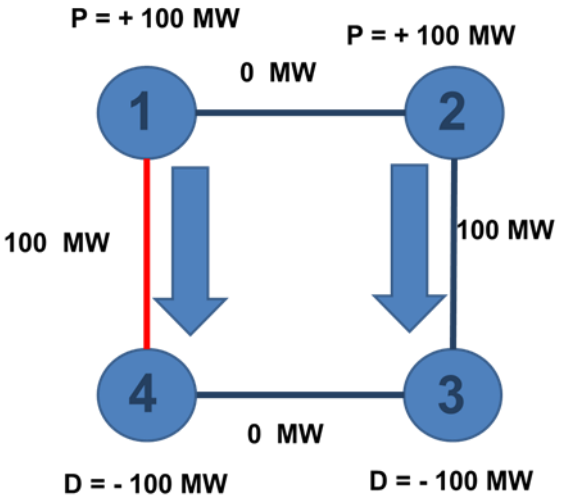
7. This is the reason why the EU legislation has always provided much attention in the conditions required by the Transmission System Operators (“TSOs”) for providing a non-discriminatory third party access to the transmission network and in particular to the necessary unbundling and the prohibition for TSOs to be involved in trading activities.

8. On the right part of the picture below, an exchange (trade) of the same magnitude is made from node 1 towards node 4. This trade produces a symmetrical flow pattern in the transmission network. It will be shown in section 4 below that even if the two trades make a similar use of the transmission network, their treatment (and priority) will be differentiated in function of their cross-border or internal (to a country or a zone) nature.



[1] The concern related to the impact of trade on other systems is covered by Art. 1.7 and 1.8 of the “Guidelines on the Management and Allocation of Available Transfer Capacity of interconnections between national systems” , ANNEX1 of Regulation (EC) N° 714/2009

9. The following picture shows the physical flows resulting from a simultaneous implementation of the two trades (of 100 MW from hub 2 to hub 3 and from hub 1 to hub 4). Following the laws of physics, it can be shown that the resulting or total flow in a network element is equal to the sum of the flows resulting from a separate implementation of the different trades. This rule is called the superposition principle. Line L_{41} indicated in red is overloaded: the current resulting from the two trades is equal to 100 MW, which exceeds the maximum line capacity of 80 MW[2].



10. The picture above indicates that both trades are not simultaneously feasible, as line L14 has only a capacity of 80 MW. It is the role of the TSOs (collectively) to **provide** (refuse) a **non-discriminatory access** to the transmission network as this transmission network is a public good of limited capacity.

11. Congestion Management (CM) is the tool to be used by the TSO to allocate available transmission capacities to market players and the way to choose between trades. The CM Guidelines indicate that the transmission capacity should be offered to the market players that better value this capacity[3].

12. At this stage, it is important to indicate that the two existing forms of trade, bilateral (or Over the Counter "OTC") and trade cleared by a PX, have exactly the same (physical) impact on the transmission network.

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[2] It is also important to note that flows in lines L12 and L34 are equal to zero in this case. So, a situation with more commercial trade leads to lower physical flows in some network elements. This property may be very interesting if those two lines constitute bottlenecks of the transmission system. This characteristic may be used in flow-based systems based on an adequate definition of bidding zones. This feature also explains why congestion management may be seen as a complementary good problem (see section 1.2 below).

[3] See Articles 1.6, 2.1 and 2.7 of Annex 1 Regulation (EC) N° 714/2009

I.2. Complementary trade problem

13. In order to fully grasp the nature of electricity trade, it may be interesting to have a look from a different perspective. Achieving efficient trade in electricity may be considered as a complementary goods problem. Complementary goods are goods that are consumed together and when the demand of one good increases, so does the demand of the other good. As an example, trade of left shoes increases the demand of right shoes. In electricity trading, complementarities arise when two production facilities are separated by a congested portion of the transmission network. In such circumstances, additional trade does not necessarily exacerbate network congestions (more trade in electricity may correspond to lower physical flows). This makes desirable to "pair" transactions that alleviate congestions with transactions that (otherwise) would create it. So, if we go back to our shoes analogy, the game is to find the right shoes (complementary trade) corresponding to a given left shoe!

14. So, the challenge posed by network externalities (the loop-flows) for efficiency is that all complementary trades have to be identified and consummated. Furthermore, the information required for efficient trade in electricity corresponds to the characteristics of the network (topology, link capacities and impedances) together with each market player's willingness to buy and sell a given product[4] at a given location. In organized markets, this discovery of efficient trades is done by a « formal aggregating device », like a central matching algorithm taking into account localised bids & network constraints. In the European target model, this "formal aggregating device" corresponds to the Market Coupling Operator (MCO hereafter)[5] applying Flow Based Market Coupling on the basis of adequate zone delimitation (for locational information).

15. To make it short, in electricity, organised and coordinated markets trading harmonised products, with adequate locational information, are mandatory for an efficient trading of electricity and for an efficient use of the transmission network[6].

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[4] But this will never be done if the nature of the product forbids/makes nearly impossible its matching or its comparison with other products or if the information that products provides is not adequate (ex. for intraday: cross-zonal OTC, hourly & 15' products, iceberg products,…).

[5] MCO: Market Coupling Operator in charge of the matching of bids/offers taking into account network constraints. The question if this MCO is an entity or a function is not fixed yet.

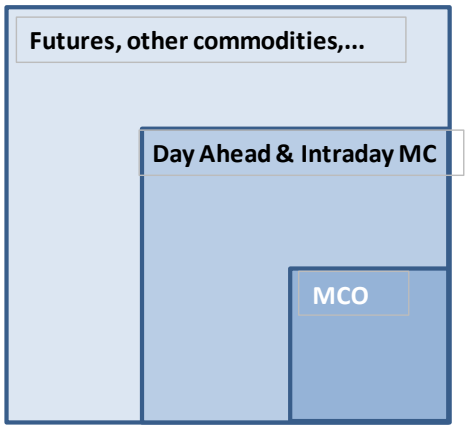
[6] To get more information on complementary trade issue applied to electricity, it is recommended to have a look to the paper E.T. Mansur and M. W. White which link is provided hereafter: http://bpp.wharton.upenn.edu/mawhite/papers/MarketOrg.pdf. The importance of the revelation of adequate information for an efficient outcome of electricity markets is further explained in the paper of J. K. MacKie-Mason: http://citeseerx.ist.psu.edu/viewdoc/summary?doi=10.1.1.39.4868 . Finally, the need for "organised markets" for efficient electricity trading, together with a comprehensive study of electricity market mechanisms is explained in the study commissioned by CREG to Prof. Y. Smeers

II. POWER EXCHANGES IN DAY-AHEAD AND INTRADAY

16. Power Exchanges appeared in some countries with the liberalisation process. Some PXs were regulated and some were considered as commercial activities. PXs where created very often as national[7] trading platform where electricity is traded as a commodity to be delivered the next day at wholesale level and where participants take physical positions.

17. Today, the activity of the power exchange also covers other commodities than electricity together with forward and future separated from the day-ahead and intraday market with physical delivery.

18. It is important to recall that Capacity Allocation and Congestion Management Network Codes only cover activities of Power Exchanges linked to the day-ahead and intraday markets, where market players take physical positions. Therefore, this study only concerns the activity of the PXs linked to these day-ahead and intraday markets covered by the CACM NC. Activities related **to forward and futures are not** covered. The picture below gives a graphic representation of the different areas of activities covered by PXs.



19. In the MCO box are grouped all activities related to the Market Coupling Operator function, as described by the CACM NC version distributed in November 2013 and in particular the development and the operation of the MCO algorithm whitch calculates

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that can be found on the CREG website : http://www.creg.info/pdf/Etudes/F810UK.pdf .

[7] Belpex constitutes an exception to this rule and was settled simultaneously with the launch of the Trilateral Market Coupling between France, Belgium and the Netherlands.

("clears" or run the auction) at the same time the volumes of trade and of flows in the system (a TSO responsibility) and the prices at the different locations (zones) of the system. It is important to indicate here that the costs related to this activity, in particular for the intraday timeframe, are increasing very fast and are not under control, due to the lack of cooperation between PXs and that the introduction of competition between PXs will have no impact on these costs.

20. In the day-ahead and intraday box are included activities related to the local implementation of the MCO function such as the bids and asks collection, the interface and the local settlement. The costs related to these activities are much lower than the costs related to the development and operation of the MCO.

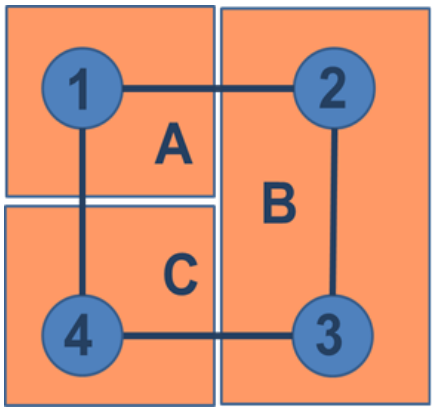
21. In the outside box are grouped activities of the PX related to future and forwards in electricity and to activities related to other commodities and not directly related to the electricity market (gas,...).

22. The advantages of trading on a PXs compared to bilateral trade[8] is a reduction of costs for the search for counterparties, anonymity of trades and a transparency on prices and volumes and a reduction of counterparty risk (the risk of not receiving payment of the counterparty).

23. But all these activities seen from a national perspective only are based **on the fallacy of the copper plate model** of national networks.

24. The picture below shows the delimitation of the different bidding zones of our synthetic example. In continental Europe, the current delimitation of bidding zones is mainly based on country borders. So in the synthetic example, countries A and C are constituted by only one node, and country B is made of two nodes and one internal line L_{23}. Lines L_{12}, L_{34} and L_{41} are cross-border lines or interconnections.

[8] Other advantages are linked to the implementation of a cross-zonal market coupling and the efficiency of this solution for the management of congestions. See section IV on the target model.



25. A copper plate has an unlimited transmission capacity and zero impedance. Country B[9] may be considered as a copper plate if the capacity line $L_{23} = \infty$ and if the resistance of line $L_{23} = 0$. In this particular case, all flows will go through the line L23 and no loop-flows will be observed in the remaining part of the system (the other lines, which have a non zero impedance).

26. In reality, country B does not correspond to a copper plate and trade cleared on the "national" PX of country B has an impact on the possibilities of trade on the whole transmission network of countries A and C, depending of the origin and destination of the trade. Indeed, a trade cleared on the PX may correspond to a trade between a seller and a buyer located in the same nodes, inducing zero loop-flows into the system, or may correspond to a sell in node 2 and a buy in node 3, which induces a (loop-) flow from node 1 to node 4 in the interconnection line L_{41} or to a sell in node 3 and a buy in node 2 which induces a (loop-) flow in the opposite direction in the interconnection line L_{41}.

27. But such a locational information inside a zone (ie. node 2 or node 3) is by principle not used by the "zonal" clearing algorithm which induce uncertainty on the effective use of the transmission network (see the change of the direction of flows in line L_{41}). Therefore, TSOs of countries A and C take very often additional security margins when managing the congestion on line L_{41}.

28. So PXs provide by default the conditions to **access** the transmission network, which is clearly a **TSO responsibility[10],** with no specific consideration towards non-discrimination between internal and cross-border exchanges (see section III below)

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[9] Countries A and C of this example correspond de facto to "copper plates" as they are constituted by one node only

[10] The issues mentioned here justify why PXs acting as service provider for their respective TSOs may correspond to a valid governance scheme for PXs, where TSOs keep the full responsibility of the

29. In addition to the cross-border (cross-zonal) impact described above, trading on a PX has also an internal impact. And due to the fact that line L_{23} has no infinite capacity, and as no limitation is applied on the volume of trade cleared by the PX of country B, flows resulting from trade of country B on line L_{23} may force the TSO of country B to re-dispatch some units inside country B.

30. As already indicated, PXs are very often, in the continental part of Europe, **separated** from the TSO. PXs make (non-regulated) **benefits** using the transmission network (a public good) without **paying for related costs** (of the transmission network, for the reduction of cross-border capacities and for re-dispatching)[11].

31. In terms of governance, the role of PXs in the access to the transmission network pleads in favour of PXs acting as "service provider" for TSOs who keep the full responsibility of the access to the transmission network and of congestion management. This is more or less the case in the framework of the current governance arrangements sets by the Congestion Management Guidelines[12]

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access to the transmission network.

[11] It may be argued here that OTC makes a similar use of the transmission network as PX. But this activity is organized by the TSO and related benefits are regulated!

[12] Annex 1 to Regulation 714/2009

III. NON DISCRIMINATION FOR THE ACCESS TO THE TRANSMISSION NETWORK

32. Trading on PXs has an impact on the transmission network and on the conditions for accessing the transmission capacity. Non-discrimination of market players for the access to the transmission capacity is a key component of the liberalisation process. It is the duty of the TSOs to provide a non discriminatory access to the transmission network. PXs in general do not have such a clear obligation. An improper treatment of non-discrimination may hinder the achievement of the internal electricity market[13]. Two types of discrimination are identified below.

33. Congestion management rules, and restriction to trade, are applied only to cross-border (cross-zonal) exchanges, i.e. on trade between countries (zones): A ⇔B, B⇔C and A⇔C trade in the synthetic example.

34. But due to the laws of physics, in meshed network, trade internal to a country makes a similar use of the transmission network and uses at the same time transmission elements located inside the country ($L_{23\ of}$ the synthetic example), cross-border transmission lines (L_{12} and L_{34}) and transmission elements located in and between third countries (L_{41}), in function of their electrical distance of the injection and take-off points.

35. Congestions may occur on cross-border interconnections and also on network elements located inside countries. In the current market design (applying Available Transmission Capacities “ATC” calculations or Flow-Based “FB” calculations with zones), the effects of congestions, i.e. the limitation of commercial trade and a price difference, are only materialised at the country (zone) borders, even if the congestion occurs inside a country (congestions are then “pushed” to the borders, like in the Swedish case[14]).

36. In contrary to cross-border (zonal) trade, no limitation is applied to internal trade (OTC or trade on national PXs). Internal exchanges (ex. trade 2=>3) are not limited, even if they use the transmission network in a similar way.

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[13] It should be noted that Art. 4 of the CACM NC does not specify clearly to whom the different objectives of the CACM NC, amongst which non-discriminatory access, apply.

[14] http://ec.europa.eu/competition/elojade/isef/case_details.cfm?proc_code=1_39351

http://ec.europa.eu/competition/publications/cpn/2010_2_1.pdf

37. This different treatment, if not properly tackled, may introduce a fundamental discrimination of cross-border trade in favour of trade internal to countries[15]. This in turn may introduce discrimination between market players linked to their location in the EU market, depending if a large part of the capacity of the local transmission network is loaded by flows resulting from internal exchanges of third countries having a de facto priority on other trades.

38. It is the collective TSO role (like in the Central West Europe "CWE" MC) of implementing a congestion management mechanism that provides a non discriminatory access to the transmission capacity. With an improper treatment of this question, TSOs do not conform to their obligation of treating on a non-discriminatory basis intern flows and cross-border flows[16]. The early implementation of the review of the current bidding zones delimitation should constitute an answer to this issue.

39. The second form of discrimination that may occur when trading is made through PXs on an electrical network is linked to the commercial interest that PXs may have for facilitating the trading of specific type of market players. As PXs condition the access to the transmission network and even have a monopoly for cross-zonal trade in day-ahead and in intraday, fee level and structure, and type of products available may reduce the access of specific types of market players to the transmission network. In particular this may be the case for players trading small volume of energy on the PXs like large consumers and small producers. Indeed, the development of products adapted to the needs of some type of market players may be considered as too costly in comparison with the expected benefits.

40. And as the impact of PXs on the transmission network is very often not recognised or neglected, PXs do not have, like TSOs, the same obligation of non-discrimination for the access to the transmission network.

[15] According to EC law cross border exchanges within the same region and cross border exchanges with other region should prevail on exchanges internal to one country.

[16] It is important to recall that this discrimination exists irrespectively of the form of trade: going through PX or via OTC. This explains why the current existence of free OTC trade inside a country may not be used as a justification for not considering that national PXs may (also) condition the access to the transmission network and for not regulating these national PXs.

IV. EU TARGET MODEL

IV.1. Market Coupling

41. The European target model foresees the implementation, for regions with highly interdependent interconnections (the continental part of Europe), of a Flow Based Market Coupling (FB MC) together with an adequate definition of bidding zones[17]. As OTC trade has been considered less efficient than implicit auction, no cross-zonal OTC trade is foreseen in parallel with implicit auctions.

42. The implementation of market coupling and of flow based market coupling today constitutes a fundamental change in the way how transmission network and the market are operated. With explicit cross-border capacities, trade of transmission capacities where separated from the trade of the commodity. Today, transmission capacity and the commodity is traded simultaneously **for efficiency reasons**. From an organizational perspective, **the same** software performs at the same time the determination of the available/allocated transmission capacities (the volume of trade) and their price. From a mathematical perspective, prices differences between zones are the dual variables of power flows on congested network elements. With FB MC, the intervention of the TSOs in what was classically considered as a pure (core business) PX activity, i.e. the determination of clearing prices, is even more evident with the direct impact of Power Transmission Distribution Factors (PTDF) on the clearing price. With FB, the clearing price of a zone does not anymore correspond only to the crossing of the bid and ask merit curves shifted by available imports/exports. With FB, the price of a zone is directly dependent of the relative location of the zone and of the location of generation units inside the zone to the congested network elements. Indeed, on the basis of assumptions on expected Generation Shift Keys[18] ("GSK"), TSOs determine the PTDFs values which have a direct impact on the clearing price of the different zones.

43. The first consequence of this is that the separation between TSOs and PX activities vanishes. The second consequence of this is that (assumptions on) the location of generation inside a zone has an impact on the clearing price even if this information is not conveyed by the PX to the TSO when the clearing is made.

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[17] Efficiency and non-discrimination are the main criteria for the determination of these adequate zones.

[18] GSKs indicate the contribution of a unit to a given power shift

44. In the US, for the above mentioned reasons, this task is performed by the TSO (ISO) that determines locational (nodal in this case) prices and exchanged volumes[19].

45. This evolution in the European market design has resulted in the creation of a monopolistic MCO function encompassing the tasks related to the coordinated clearing of locational markets. This MCO function shall perform at the same time tasks that were considered in the old European vision as TSO tasks (volume of exchanges or transmission capacities) and PX tasks (prices). This function has the monopoly for the access to cross-zonal transmission capacity in day-ahead and the role of "national" or "zonal" PXs (NEMOs) is considerably reduced mainly to gathering bid/offers as input for the MCO function and the communication of results/settlement to market players and the publication of prices.

[19] It should be checked if in the European Market design the attribution of market clearing activities to entities separated from the TSOs do not have as consequence the obligation for market players to pay, through PXs fees, for collaterals that may not be necessary if the TSOs were sole responsible and which already have some (physical & bank) guarantees through BRP responsibilities.

V. PCR INITIATIVE

46. PXs are currently implementing on voluntary basis collaboration between PXs for the implementation of the day-ahead market coupling called the Price Coupling of Regions (PCR) initiative.

47. This collaboration is formalised by contracts between PXs and all PXs active in the MCO function operate the market coupling on a rotating basis, on different platforms. PXs have the responsibility of this task for, as an example, one week and other systems being used as backup. Each PX remains fully responsible of the prices and volumes of its bidding zone. PXs claimed that this decentralised organisation avoids the construction of a monopoly and is compatible with current governance arrangements existing in Europe.

48. This organisation foresees that some PXs may rely on other PXs for performing MCO related activities and we have PXs able to run the MCO software and PXs that do not perform this activity.

49. This organisation raised the question of the efficiency of the regulation of this activity and in particular the duplication of costs linked to the development and operation of the MCO activity on different platforms. And also raises the question of the form of responsibility that may be put on this kind of organization.

50. The North West Europe (“NWE”) market coupling launched in February 2014 was based on this organisation.

51. For the intraday time frame, the question of a rotating operation of the continuous trading mechanism is still unclear.

VI. CACM PROPOSED GOVERNANCE

52. The European Commission published the 22nd of November 2013 a first working draft on the CACM NC[20]. Main articles of the section on governance of this NC are presented below. NEMOs for "Nominated Electricity Market Operator" (PXs that have been designated) and MCO function for "Market Coupling Operator function" are the building blocks of the proposed governance arrangements.

53. This nomination of PXs with tasks clearly identified (see below) constitutes a radical evolution compared to the current situation described in the Annex 1 of the Regulation 714/2009 on the "Guidelines on the management and allocation of available transfer capacity of Interconnections between national systems" where power exchanges are nearly not mentioned (Art. 2.7 only) and where TSOs have the full responsibility of the organisation and implementation of coordinated congestion management methods in day-ahead in seven regions.

Article GC 1

NEMOs, designation and de-designation

1. Each Member State electrically connected to a bidding zone of another Member State shall ensure that one or more NEMOs are designated within 6 months after the entry into force of this regulation to perform the single day-ahead (and intra-day coupling), based exclusively on the selection criteria listed in Article GC2. The same designation criteria shall apply regardless of whether one or more NEMOs are appointed. All requests for designation of new NEMOs should be treated in a non-discriminatory manner. Applicants may apply to become NEMOs in any one or several EU Member States. At least one NEMO needs to be designated in each bidding zone of a Member State.
2. In designating NEMOs, the designating entity must assess the fulfilment of the NEMO candidate the designation criteria in Article GC 2. If not done by the NRA, the designation shall be subject to an opinion of the NRA , assessing to what extent each NEMO candidate fulfils the designation criteria in Article GC2. NEMOs shall be designated for a period of 4 years.
3. A NEMO designated in one Member State shall have the right to offer trading services with delivery in another Member State. The trading rules in the latter Member State apply without a need for designation as a NEMO in this Member State. By way of exception, the Member State where delivery takes place may refuse these trading services in case the Member State can establish that these trading services and the trading rules cannot be made compatible. In such cases, the Member State shall notify the refusal to the NEMO with appropriate justification and the NRA shall investigate and

[20] http://ec.europa.eu/energy/gas_electricity/electricity/cross-border_committee_en.htm

issue an opinion to the Member State, ACER and the European Commission on how to make them compatible.

4. In case a national legal monopoly already exists in a Member State at the time of the adoption of this Regulation for day-ahead and intra-day trading activities:
   a. The Member State may refuse the designation of more than one NEMO per bidding zone. If there are several applicants to be designated as a single NEMO, the Member State shall designate the applicant which fulfils best the criteria listed in Article GC2. If Member States refuse the designation of more than one NEMO per bidding zone, the NRA shall fix or approve sufficiently in advance of their entry into force the fees or specify the methodologies used to calculate the fees related to trading in the day-ahead and intra-day markets.
   b. The Member State may refuse trading services offered by a NEMO designated in another Member State. The protection of existing power exchanges from economic disadvantages through competition cannot justify a refusal.

   ….

54. This article stipulates that mandatory competition between several NEMOs in the same bidding zone is the default option. If a legal monopoly exists at the adoption of these NC, a MS may refuse the designation of more than one NEMO. The article seems to indicate that a MS may designate several NEMOs with MCO functions obligations inside the same bidding zone. No MCO[21] entity is mentioned here.

Article GC 3

NEMO functions

1. NEMOs (TSOs) shall be responsible in particular for the following functions regarding single day-ahead coupling (and single intra-day coupling):

   a) Acting as a market operator in local markets including receiving orders from market participants, having overall responsibility for matching and allocating orders in accordance with the single day-ahead coupling (and single intra-day coupling) results, publishing prices and settling and clearing the contracts according to relevant participant agreements and regulations,
   b) Establishing requirements for the single day-ahead coupling (and single intra-day coupling) MCO functions and Price Coupling Algorithm for all aspects related to electricity market functioning in accordance with paragraph 2 and Articles 43 and 44,
   c) Implementing and operating in coordination with other NEMOs the MCO functions pursuant to paragraph 2,
   d) Making anonymous and sharing the received order information necessary to perform the MCO functions in accordance with Articles paragraph 2 and Articles 47 and 61,
   e) Assessing the results calculated by the MCO functions, allocating the orders based on these results, validating the results as final in case they are considered correct and taking responsibility for them in accordance with Articles 55 and 68,
   f) Informing the market participants on the results of their orders in accordance with Articles 58 and 68,
   g) Acting as Central Counter Parties for clearing and settling the commercial cross-zonal transactions resulting from the single day-ahead coupling (and intra-day coupling) in accordance with Articles 72, 73 and 74,

[21] An MCO is not in line with the PCR solution proposed by the PXs (see section V above)

h) In cooperation with TSOs, implementing and operating backup procedures for local or regional market operation, consistent with overall procedures, if no results are available from the MCO functions in accordance with Article GC 4 and 42,
i) providing input to the committees established under Articles 10 - 13 supporting the governance and decision making on single day-ahead coupling (and single intra-day coupling), and
j) providing the single day-ahead coupling (and single intra-day coupling) cost forecasts and cost information to NRAs and to TSOs where NEMO or MCO costs are to be covered by contribution of TSOs in accordance with Articles GC 7 and 85,

2. MCO functions referred to in paragraph 1 (b), (c) and (d) shall include in particular:

a) Developing and maintaining the algorithms, systems and procedures in compliance with the agreed market and capacity allocation requirements for the single day-ahead coupling and likewise for the single intra-day coupling pursuant to Article 42,
b) processing input data on cross zonal capacities and allocation constraints from coordinated capacity calculators in accordance with Articles 53 and 66,
c) operating the single day-ahead coupling and the single intra-day coupling algorithm in accordance with Articles 55 and 68,
d) validating and sending single day-ahead coupling and single intra-day coupling results to the NEMOs in accordance with Articles 55 and 68..

3. All NEMOs (TSOs) shall submit to the Agency a plan that sets out how to establish and perform jointly the MCO functions in accordance to paragraph 2 including the agreements between NEMOs and with any third parties no later than […] Such plan shall include a detailed description and the proposed timescale for the implementation process, which shall not be longer than 12 month and a description of the expected impact of the terms and conditions or methodologies on the establishment and performing the MCO functions. The cooperation of NEMOs shall be strictly limited to what is necessary to jointly perform the MCO functions in an efficient and effective manner. The joint performance of the MCO functions shall be based on the principle of non-discrimination and ensure that no NEMO can benefit from unjustified economic advantages through the participation in the MCO functions.

…

55. This article specifies the task related to each NEMO and the tasks related to the MCO function. By matching offers (and having the responsibility of it) PXs receive a clear role in congestion management by deciding which market player will get access to the interconnection capacity. This new role from a legal perspective militates in favour of an adequate regulation. This article also gives the impression that all NEMOs shall be responsible for performing MCO function tasks. NEMOs shall jointly implement and operate the MCO functions. This triggers at least two comments: this governance is based on the collaboration of NEMOs and several MCO functions seem to exist together. Further, the article GC3 1.j makes a difference between NEMOs and MCO costs. But the MCO is not an entity, and all NEMOs are responsible of MCO functions tasks: with other words, NEMOs will have to pay the costs for developing and operating the MCO function, which is a monopoly activity by nature. Finally, it is also specified that this collaboration has to be strictly limited to what is necessary to perform the MCO functions, maybe in order to avoid the creation of

cartels. Does this prevent the subcontracting of NEMOs tasks related to the MCO function to other NEMOs? The collaboration between NEMOs for the standardisation and the reduction of costs of their other activities seems not to be allowed.

Article GC 16

Monitoring by NRAs

1. In line with Article 37 of Regulation 2009/72/EC, each NEMO and the MCO function shall be subject to monitoring by the NRA responsible for the location where the NEMO carries out its activities related to the single day-ahead and intra-day coupling. The entity performing the MCO function shall be monitored by the NRA responsible for the location where this entity is located. The NRAs responsible for the monitoring of NEMOs and the MCO functions shall fully cooperate and shall provide access for information to other NRAs and the Agency in order to ensure a proper monitoring of the single day-ahead and single intra-day coupling.

2. ...

56. This article introduces a doubt about NEMOs tasks as some NEMOs may not perform a MCO function (in a given bidding zone?). The basis for the designation of the NEMOs performing MCO function(s?) in one country or bidding zone and NEMOs not performing MCO functions are unclear. This article may also have as consequence that several NEMOs may be active in a country (offer trading services) with a different country of origin (location). Does it mean that in this case, the allocation of the cross-zonal (border) transmission capacities of a given country will be regulated by another regulator? Other parts of the NC provides more information concerning the way NEMOs activities related to the market coupling are controlled and in particular the developments of new products and on the way PXs developments and operational costs in a competitive environment may be recovered and transferred into TSOs tariffs.

57. The exact location of the activity linked to collateral is not totally clear, but larger volumes (and therefore fewer entities involved) should reduce average costs.

58. In the remaining part of the section on Governance, no MCO entity is created and the way how entities (NEMOs) performing this monopolistic activity will be controlled is unclear.

59. It is important to indicate here that the version of the CACM NC used in this study only correspond to a working draft and that new versions may change the analysis and the comments made in this section.

VII. REGULATION OF POWER EXCHANGES

60. As PXs receive new roles and obligations in the current version of the CACM NC, an adequate regulation has to be set in place. In this version of the CACM NC, no MCO entity (operator) is created to take care of the tasks related to the MCO function which entirely rely on NEMOs.

61. By regulating PXs (NEMOs), it is meant below that fee definition, costs recovery eventually through TSOs tariffs, products definition, market rules and monitoring (via REMIT) of PXs linked to the day-ahead and intraday activities should be controlled by national NRAs/MS.

62. The regulation of NEMOs should facilitate the collaboration of PXs in the development and the operation of the tasks related to the MCO function by removing (a part) of the commercial interests related to this activity. In a second stage, the creation of a regulated MCO entity, on the basis of national entities, should be considered. With the creation of an MCO entity, competition on the residual tasks of NEMOs in day ahead and intraday may then be envisaged, subject to the necessary cost benefit analysis.

63. Three fundamentals reasons are given in the sub-sections below for demonstrating why (national) PXs activity linked to the day-ahead and intraday markets coupling have to be regulated.

VII.1. Third Party Access

64. Let's recall the objective of a liberalized market and of unbundling: organize an efficient competition between market players – mainly producers – and provide to these competitors a non discriminatory access to the transmission capacity.

65. As explained in section I.1 above, it is important to realize that one bilateral trade between a producer (seller) and a consumer (buyer**)** affects the possibilities of trade of all possible consecutives bilateral trades due to the physicals laws of electricity. In other words, a trade internal to a zone (country) shall modify the remaining possibilities of trade inside the

zone and also in and between third countries[22]. So, by providing access to one trade, TSOs **condition the access** to the transmission network.

66. Following the Directive, TSOs should provide (non-discriminatory) access to the transmission capacity and carefully justify on technical and economical reasons when they refuse this access (see Art. 12 (g) *providing system users with the information they need for efficient access to the system; and* (h) *collecting congestion rents and payments under the inter-transmission system operator compensation mechanism, in compliance with Article 13 of Regulation (EC)No 714/2009, granting and managing third-party access and giving reasoned explanations when it denies such access, which shall be monitored by the national regulatory authorities; in carrying out their tasks under this Article transmission system operators shall primarily facilitate market integration.)* and 32.2 . *The transmission or distribution system operator may refuse access where it lacks the necessary capacity. Duly substantiated reasons must be given for such refusal, in particular having regard to Article 3, and based on objective and technically and economically justified criteria.)*

67. National or zonal PXs constitute a place where bidders and sellers may meet each other, trade specific products, reduce risk linked to trade and increase the transparency on the price. But in terms of network use, a PX has the same effect as thousands of bilateral trades that may heavily use the transmission network depending on the origin and destinations of trade (which are unknown inside a zone). This activity leads to externalities in terms of network use, inside the same zone (re-dispatching costs) but also outside the zone (raise of marginal electricity price in other zone) where the PX is settled. If the volume of trade is important the impact of this business may be important and far reaching. This activity may radically reduce the access to the transmission network in/between third countries (zones) (see § 26 above) where it may result in a refusal of access.

68. As TSOs do not seem to care too much about this (potential) discrimination, it has to be feared that PXs will also not care too much. But with one fundamental difference: at the contrary to TSOs, PXs may make non regulated benefits out of a discrimination of cross-border trade in favour of internal trade. PXs may show typical free rider behaviour in this area[23].

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[22] At the border between Belgium and the Netherlands, the security margin taken by the Belgian TSO to cope with this phenomenon is in the 1000 MW – 1200 MW range even in the presence of phase shifters compared to a commercial capacity of 1500 MW.

[23] It will be demonstrated in section VIII.1 below that the introduction of competition between PXs, and in particular the creation of differentiated products, will exacerbate current discrimination and geographic market segmentation.

69. Finally, PXs fees structure may represent unacceptable barriers to cross-border trade for small players: high fixed fees, like entrance fee or yearly membership fee, are for example favouring big players. Therefore, it is preferable to have the tariff structure kept under regulatory scrutiny to guarantee a non-discriminatory access.

70. This discussion indicates why PXs[24] condition the access to the transmission network and why the role of PXs may not be separated from the TSOs which are directly responsible of the access to the system and why PXs should therefore receive the same treatment and be regulated. In congestion management related activities, PXs should be regulated or act as service providers for the TSOs who's keep the full responsibility of this activity.

VII.2. No clear separation between TSOs and PXs activity

71. The implementation of a Flow-Based market coupling in the CWE region, the EU target model, has shown a fundamental evolution in the delimitation of TSOs and PXs activities in the operation of the market coupling.

72. Based on the laws of physics, a flow based market coupling may allow an efficient use of the transmission system. But in case of congestion, electricity prices depend on Power Transfer Distribution Factors ("PTDF") which reflect the impact **and the distance** of a power transfer on the congested network element. So, with flow-based, in case of congestion, the price is **not only fixed** by the intersection of the supply and demand curve, but also function **of the distance of the power shift** to the congested network element determined by the TSOs via assumptions on Generation Shift Keys (GSK).

73. In addition, it is important to recall that with market coupling, (flow-based or not), one unique optimisation software calculates at the same time prices (a PX responsibility?) and volume (a TSO responsibility?), available bids and transmission capacities being the input to this calculation. It can be shown that electricity prices correspond to dual variables of electricity flows in congested network elements.

74. So, the separation of TSO activities and PX activities in the operation of a MC is artificial and therefore, if separated, both entities should comply with the same governance arrangements.

[24] The existence of "free" OTC inside a country does not constitute a justification for not tackling properly the trade organized trough the national PXs, as explained in Appendix 1

VII.3. Monopoly access to the day-ahead and intraday cross-border transmission capacity

75. Following the path of the progressive construction of a “formal aggregating device” (see section I.2 above), in day-ahead and intra-day, a monopoly access to the cross-border transmission capacity is (implicitly) given to the PXs for efficiency reasons: implicit auctions (transmission capacity and energy) are by far more efficient than explicit for managing congestions and no cross-border OTC capacity is therefore provided in parallel.

76. Indeed, OTC, an explicit access with no price reference, makes impossible to give the scarce capacity to those that better valuate (market based - highest value bids) this capacity (Article 2.7 of Appendix 1 of Regulation 714)[25].

77. In a market coupling between two countries, as the whole day ahead transmission capacity is given to one PX (one for each side), this constitutes indeed a monopoly for the access to the cross-border (cross-zonal) transmission capacity and therefore some regulators/states have clearly indicated that they “regulate” this activity of the PXs.

78. In the current EU target model, the MCO function(s) has the monopoly of the access to the cross-zonal transmission capacity over the whole Europe. This constitutes a clear monopoly on the access to the cross-zonal transmission capacity and no cross-zonal OTC is provided.

79. As a conclusion, EU target models for day-ahead and intraday gives a monopoly for the access to the day-ahead and intra-day cross-zonal capacity to the PXs (or entities performing that role) and only one clearing /fixing of competing trades should take place. For this reason, PXs activities linked to the day-ahead and intraday market coupling have to be regulated.

80. Finally, as the MCO function has a clear monopolistic nature, the regulation by all NRAs/ACER of an MCO entity to be created should constitute the enduring solution of PXs governance and the regulation of the building blocks of this MCO entity should constitute a natural intermediate steps towards the enduring solution.

[25] OTC trade does not ensure that the transmission capacity which, in this particular case, is traded separately from the commodity, is used in an efficient way (in the right direction) and this form of trade is therefore less efficient than implicit trading that combine the commodity and the transmission capacity.

VII.4. Cost structure

81. The cost structure of a PX is mainly composed of fixed costs (cf. IT, staff) which are independent of the amount of platform users and trades occurring on it: for any additional platform user, few additional costs are in fact supported by the platform owner (cf. printing and sending of an extra monthly bill to this additional platform user). Because this industry is characterized by strong economies of scale, many small power exchanges competing together are not likely to push the PXs fees downward: only a regulation similar to the one applied to TSOs by a regulator is likely to do it. With other words, PXs present some analogy with natural monopolies that constitutes an additional reason for their regulation.

VIII. MANDATORY COMPETITION BETWEEN PXS IN THE SAME BIDDING ZONE

82. In this section, the impact of the introduction of competition between different PXs inside the same bidding zone, without the creation of an MCO entity, will be examined

83. Mandatory competition between PXs in the same bidding zones shall have the following consequences:

- A segmentation of the market
- An exacerbation of potential discriminations
- A delayed implementation of the EU target model

84. Before examining the impact of the introduction of competition between PXs, it is worth recalling that, as explained in § 81 above, the expected reduction of costs linked to the introduction of competition between PXs may be limited or even negative due to the cost structure of PXs. For this reason, the business case for the settlement of a PX in an additional zone may very often be of limited benefits.

VIII.1. Market segmentation resulting from product differentiation

85. Competition between PXs (NEMOs) shall result in the proposal of **differentiated** products supposed to better match local market needs. The development of local products is less costly and easier as they do not necessitate a modification of the MCO algorithm.

86. In order to give a competitive advantage to the PX at the origin of a new product, this new products should not be compatible with products available on competing PXs in the same bidding zone and may also not be compatible with products cleared by the MCO (in order to reduce development costs and time).

87. This will result in unnecessary and additional (a segmentation linked to product will be added to the zonal segmentation) market segmentation that will further reduce competition between electricity market players.

88. With commercial PXs, the definition of (new) products is linked to the needs of their customers and to their commercial interests. The interest and concerns of market players located in other zones or trading small volumes on the PX may not be taken into consideration by commercial PXs if there is no business case and no profitability linked to it.

89. With other words, PXs may have much more to win with national products satisfying their local customers than with products to be cleared by the MCO with additional development costs.

90. As a conclusion of this section, it can be said that **competition between PXs shall result in product differentiation that will further segment the market and prevent efficient market outcome**.

VIII.2. Different prices resulting from different fees

91. It may be argued that competition between PXs in the same bidding zone may result in a reduction of PXs fees and benefits to markets players.

92. First, it has to be recalled that the costs linked to the “national” or “zonal” activity are lower than the costs related to the MCO development and operation, which per definition should be the same for all NEMOs. Therefore, a reduction of fees related to this activity can only be limited. If significantly lower fees are applied issues like unfair competition and dumping will have to be examined carefully.

93. Secondly, a fee difference between PXs in the same price zone may constitute in theory the end of the principle of a unique price for electricity in that zone. Market players will indeed face different prices for the commodity depending from the PX chosen.

94. As the total costs for a market player is equal to the commodity price plus the fee, the presence of several PXs in the same bidding zone will force market players to take into account these fee differences in order to bid efficiently in the competing PXs.

95. Even worse, PXs may adopt different fee structure (example: in case of a difference in the amount of fixed and variable fees) making difficult for market players to have an efficient bidding that will depend of the volume cleared by the MCO (difficult to estimates for market players). And market players may have to pay several fixed fees (entrance fee for trading on the PX) in order to maximise their chance of success by bidding in different NEMOs.

96. This is at the opposite of the creation of a level playing field between market players for an efficient competition in the internal market.

97. And this will also not facilitate the objective of providing to market players adequate locational price signal for investment decisions in a given zone if several price references are available. This may distort competition between zones.

98. But in practice, this difference in fee may not be significant[26] especially if an MCO entity is created and regulated. Indeed, in this particular case, the (local) costs to be borne by competing NEMOs will be rather small and, as a consequence, related fees..

99. This section may be concluded by saying that the introduction of several competing PXs may result in fee differentiation (if any) that may reduce the efficiency of competition between market players and zones, increase the cost for trading and deteriorate locational price signal and price reference. It can also be argued that as indicated above, this impact on fee differentiations may be very low (especially in the case of the creation of an MCO entity) and the benefits of the introduction of competition may be rather small[27] compared to the related costs and implementation challenges.

VIII.3. Free rider behaviour

100. A free rider, in economics, refers to someone who benefits from resources, goods, or services without paying for the cost of the benefit.

101. Competitive PXs (as opposed to regulated entities) benefit from the transmission capacity made at the disposal by the TSO without paying the costs related to this activity and in particular without paying the costs of the transmission network, the costs linked to (internal) re-dispatching and the costs linked to the corresponding externalities and in particular the costs linked to the reduction of cross-zonal capacities (see section 3 above) linked to an increase of the necessary security margins.

[26] Current fee difference of the two PXs active in UK is rather small..

[27] The analysis made in GB of price divergence shows that the difference of prices between APX and N2EX is very small.

102. And the higher the volume of local (national) trade, the lower the remaining available cross-border capacities and the higher the attractiveness of a PX compared to competitors located in smaller areas[28].

103. Due to an improper treatment of all externalities linked to electricity trading, PXs in a competitive environment may show free riding behaviour.

VIII.4. Endanger the implementation of the target model

104. The introduction of mandatory competition between PXs in all bidding zone shall put at risk the implementation of the EU target model for several reasons. Firstly, this implementation is based on cooperation in good faith between PXs. Secondly, the new governance framework is still unclear and has never be implemented. Finally, as the national differences between the roles of PX are so high, the possibility to create a level playing field between them is very limited.

105. The exacerbation of competition between PXs, as proposed today, shall put at risk the cooperation between them, with as direct consequence **a delay** in the implementation of the target model. And it is precisely already the existing (reduced) competition between PXs and the uncertainty in the future governance framework which is currently delaying the implementation of the day-ahead and intraday mechanisms. And in addition, the costs linked to coordination between PXs in the current framework undergo a sharp increase. More competition will increase development and operation costs of a market coupling based on a PCR organisation. The creation of a MCO regulated entity should be less expensive.

106. No market coupling involving competitive PXs in the same bidding zones has ever been implemented yet[29]. Even if such a solution was feasible (the virtual hub has never been implemented in heavily meshed areas, seems complex and costly), the complexity of this

[28] New local products that cannot be matched in other zones shall constitute a burden on the transmission network of third countries. In the synthetic example, trading inside country B will induce loop-flows over the whole system. As this trade cannot be matched inside country A and C, and because this internal trade has priority on cross-border exchanges, this trade will reduce the transmission capacity available for cross-border exchanges. A higher liquidity in this specific local product will lower the cross-zonal (border) transmission capacities. This will further increase the zonal segmentation of the market and discriminate market players located in countries (zones) A and C.

[29] In GB, an aggregator is used.

organisational arrangement will delay for several years the implementation of the target model. This is a step in the unknown and no cost benefit analysis linked to the implementation of mandatory competition between PXs in the same bidding zone has never been made. And finally, the lack of clarity of the current governance framework, and in particular the link between NEMOs and MCO(s) function, will **impede** the implementation of a **common** target model.

107. As it was never an objective, **there is no level playing field for the competition between PXs** which situations are totally different from country to country: some PXs are regulated entities, some of them benefit from the liquidity linked to the size of the zone, others benefit from market design characteristics such as an obligation to trade some products on the PXs and finally some of them benefits of de facto monopoly on neighbouring zones. As the current governance proposal does not guarantee the establishment of a level playing field between PXs, it has to be feared that some of them benefitting from uncompetitive advantage will expand their activity on several zone, acquiring gradually a monopoly justifying later their regulation. Finally, the implementation of a level playing field for competition between PXs for the day-ahead and intraday activities will necessitates additional software development costs in each bidding zone allowing a non discriminatory access of PXs to the local order book and transmission capacities. No costs benefit analysis seems having been made for this.

108. The current proposal of mandatory competition seems to allow, at first glance, the implementation of the PCR model. But the generalisation of this model, with several PXs operating on a rotating basis the MCO algorithm, will never allow at the same time an efficient implementation of the target model (with an increase of costs linked to IT developments and operation of the MCO function by several “competitive” PXs) and the creation of a level playing field between PXs with MCO responsibility. Therefore, for practical reasons, the creation of an MCO entity seems the only enduring solution for the EU target model.

CONCLUSION

Electrical laws of physics have as consequence that coordination and harmonization of traded products together with adequate locational information is mandatory for an efficient use of the transmission network and for an efficient market outcome.

The European Target model foresees the introduction of a flow based market coupling performing the coordinated clearing of properly delimited zonal markets in day-ahead. No cross-border OTC trade is allowed.

The role of PXs cannot be separated from the role of the TSOs for market coupling related activities (MCO function).

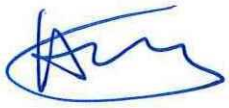
National PXs (NEMOs) condition the access to the transmission capacity, which is a clear TSO responsibility. And for efficiency reasons, the EU Target Model gives a monopoly role to the PXs in day-ahead and intraday for accessing cross-zonal transmission capacities. For these three reasons, PXs have to be regulated (fees, products definition, costs recovery and monitoring). In the case of the creation of an MCO entity (which is not the case today), competition between residual local NEMOs activities may be acceptable.

The current differences in national market designs do not allow the establishment of a level playing field for competing PXs. Competition between PXs will result in product differentiation that will lead to further market segmentation and inefficient market outcome. Competition between PXs may also result in (small) fee differentiation that may reduce the efficiency of competition between market players, increase the cost for trading and deteriorate locational price signal and price reference. Finally, mandatory competition between PX will endanger the implementation of the EU target model and increase overall implementation costs.

If the current governance arrangements are not acceptable and if the monopoly character of the PXs activity in day ahead and in intraday is considered a fundamental problem that has to be tackled, it is recommended that instead of moving towards mandatory competition between several PXs in the same bidding zones, (national) PXs should be regulated by (national) NRAs/MS in line with Third package arrangements.

This national regulation should constitute an intermediate step or solution towards the creation of a pan-European regulated MCO entity.

For the Commission for Electricity and Gas Regulation:



Andreas TIREZ
Director

Marie-Pierre FAUCONNIER
Chairwoman of the Management Board

ABBREVIATIONS

ATC calculation: a method for the calculation of cross-zonal transmission capacities based on the Available Transmission Capacity concept

CACM NC: Capacity Allocation and Congestion Management Network Codes

FB MC: Flow Based Market Coupling

GSK: Generation Shift Key describing the contribution of a unit to a power shift

MCO function: the function performed by a Market Coupling Operator

NC: Network Code

NEMO: Nominated Electricity Market Operator (i.e a power exchange designated for performing day-ahead and/or intraday market coupling)

NWE: North West Europe

PCR: Project Coupling of the Regions initiative for the implementation of a market-coupling in Europe

PTDF: Power Transmission Distribution Factors describing the impact of cross-zonal power transfers on network elements

PX: Power Exchange

TSO: Transmission System Operator