



Regional day-ahead market coupling Template for General Framework Agreement

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General Framework Agreement organizing the Day-Ahead Market Coupling between and

Assumptions: this General Framework Agreement is based on several assumptions, because the design of the effective MC projects have not yet started and cannot serve as input for the GFA. The assumptions taken are the following :

- The MC projects are between two control areas within the Western Balkans: this Agreement is based on bilateral market coupling) but can be adapted being multilateral depending the scope of the project or the use of the GFA (as general global framework agreement).
- The PXs are different in the two control areas;
- A TSO Common System is set up;
- Agreement describes the most complex situation with other entities than PXs & TSOs realizing some of tasks that can be done by PXs & TSOs.
- Balanced rights & obligations between PXs & TSOs.
- The Algorithm Requirements are not listed within the list of MC requirements because Euphemia is already chosen, even if the algorithm is an essential element of the MC design.
- The daily operations are dependent of the technical design and procedures approved for the WB6 market coupling. We propose the most complex design with an independent central counter party (CCP) and a TSO entity for PTR calculation and making them available to PXs. However it can be differently organized (e.g. PXs taking the role of CCP and/or TSOs the one of calculating entity); Congestion revenue is collected and used through the CCP. The project design might decide not using CCPs, nor a TSO entity.
- To be decided if needed. The Simulation Facility is an application in which the Executable Software (Euphemia) is embedded. It allows the simulation of market coupling sessions based on any mix of historical data and/or artificial input data as well as the reporting on the output of these simulations (limited to reporting available in the Simulation Facility):
 - o for analysis purposes and download of the available data to perform operational and management reporting
 - o to test changes to the market design; impact of modifications of the Capacity calculation model.

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Parties

THIS AGREEMENT IS ENTERED INTO AND MADE ON BETWEEN:

List of Parties of the General Framework Agreement (hereafter the “Agreement”) with all companies details:

- The power exchanges (PX having the licence/ Statute of PX for the Market Coupling’s related control zones): Individually referred to as “**PX**” and/or collectively referred to as “**PXs**”
- the TSOs competent for the Market Coupling’s related control zones : individually referred to as “**TSO**” and/or collectively referred to as “**TSOs**”

TSO(s) and PX(s) being referred to as “**Party**” individually and/or “**Parties**” collectively

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Preamble

1. Western Balkans 6 (WB6) refers to the six parties of the Energy Community Secretariat, in which several market coupling projects will be deployed : Albania, Bosnia and Herzegovina, Kosovo, former Yugoslav Republic of Macedonia, Montenegro and Serbia
2. This General Framework Agreement is organizing the Market Coupling agreement between two (2) control areas : ... and ... within the Western Balkans [and ..., outside the region of Western Balkans].
3. Market Coupling is recognised by the actors of electricity sector as the best mechanism to integrate electricity markets of different physical areas because it is based on an implicit, market based and non-discriminatory method for coordinated price formation in each involved hub and allocation of Available Interconnection Capacity. Market coupling calls upon core tasks of TSOs (allocation of Available Interconnection Capacity) and PXs (ensuring non-discriminatory, transparent and confidential price formation between market participants via their exchange platforms);
4. The Parties together with ministries and regulators, signed a Memorandum of Understanding in which they committed to improve cooperation in the field of cross border exchange of electricity in the Western Balkans and more specifically to use reasonable resources and support with the overall aim to (i) analyse, design and implement a Market Coupling between two control areas of the Western Balkans, (ii) enhance market integration and (iii) enhance security of supply in the Western Balkans;
5. To this effect, the Parties decided to set up and participate in a joint project for designing, developing and implementing the Market Coupling between ... and ... ;
6. Under this Market Coupling Project:
 - a. the Parties decided to implement the Market Coupling;
 - b. the Parties have decided to use Euphemia for the Market Coupling;
 - c. the Parties have concluded agreements to ensure amongst others the design, cost recovery, confidentiality, development of Components and their implementation;
7. The Parties now wish to enter into this General Framework Agreement (the “Agreement”) to set forth the main terms and conditions under which the Parties will cooperate to operate and maintain the Market Coupling.

IN CONSIDERATION OF THE ABOVE, THE PARTIES HEREBY AGREE, UNDER THE TERMS AND CONDITIONS OF THIS AGREEMENT, AS FOLLOWS:

Article 1- PURPOSES

This Agreement sets forth the rights and obligations of the Parties regarding their cooperation in respect of the operation, *in ... and ...* , of a Day Ahead Market Coupling, as regards roles and responsibilities in respect of operations, governance and decision making, by organizing a wholesale implicit day-ahead

allocation of cross-border transmission capacities on their mutual borders, in order to achieve the objectives of the MoU, in particular in order to:

- (a) enhance security of supply;
- (b) increase competition in electricity wholesale markets;
- (c) preserve and enhance a fair and orderly market including fair and orderly price formation;
- (d) enhance more efficient use of cross border interconnections by objective, implicit, market based, non-discriminatory and transparent methods of allocation of Available Interconnection Capacity;
- (e) provide fair and non-discriminatory access to the Market Coupling;
- (f) facilitate the coupling within adjacent markets and regions and thereby contribute to the integrated Western Balkans energy market and, more globally, the integrated European energy market with a goal to keep Price Coupling at least in the control areas and to promote Price Coupling wherever possible beyond the concerned control areas;
- (g) increase economic efficiency in the Western Balkans Region.

Article 2 - DEFINITIONS

The definitions used in this Agreement are set forth in Annex 1 or if relevant in the glossary of the Operational Procedures set forth in Annex 5.

Article 3 - CONTRACTUAL FRAMEWORK

Paragraph 3.1 - CONTRACTUAL SCHEME

- 3.1.1.** This Agreement contains the general framework and the main principles of cooperation between all the Parties in respect of the purposes set forth in Article 1.
- 3.1.2.** The Parties will enter into the Subsidiary Agreements listed in Annex 3 to further implement and elaborate in detail the general framework, as well as in any other agreements necessary for implementing this Agreement.
- 3.1.3.** The Subsidiary Agreements shall at all times be compliant with this Agreement and shall not be in contradiction with it. The Party(ies) entering into other agreements necessary for implementing this Agreement shall ensure that such other agreements shall at all times be compliant with this Agreement and are not in contradiction with this Agreement.
If the Parties involved in Subsidiary Agreements notice that any of these arrangements is not aligned with the GFA, these Parties shall without delay notify in writing the Steering Committee thereof stipulating the reasons for not being able to ensure that Subsidiary Agreements are in line with this Agreement. Following such notification, the Steering Committee shall try to find the best reasonable solution with the least adverse consequences to the Market Coupling.
- 3.1.4.** The Parties shall at all times perform and uphold the Subsidiary Agreements and other agreements they are a party to in accordance with this Agreement and with the relevant Subsidiary Agreements.

Paragraph 3.2 - CONTRACTS HIERARCHY

Notwithstanding Paragraph 3.1, should differences and/or contradictions exist between this Agreement and any of the Subsidiary Agreements, the terms and conditions of this Agreement shall prevail unless explicitly agreed otherwise by the Parties in this Agreement.

The Agreement is, at the time of its signature, composed of its main body and its Annexes listed at the end of this Agreement (which may be subdivided). Should differences and/or contradictions exist between the main body and any of the Annexes, the terms and conditions of the main body shall prevail.

Article 4 - PRINCIPLES OF COOPERATION

Paragraph 4.1 - BEST EFFORTS OBLIGATIONS

Obligations of the Parties under this Agreement shall be Best Efforts obligations unless explicitly otherwise specified in writing.

Paragraph 4.2 - ACTIVE COOPERATION

- 4.2.1.** Given that the success of the Market Coupling depends on the well-functioning of the Components, on interactions between these Components and on interactions between the Parties, the Parties shall cooperate actively in this respect with a view to realising the purposes of this Agreement set forth in Article 1 especially in case of unexpected difficulty.
- 4.2.2.** With a view to join the European electricity market and/or to create a Western Balkans Market, the Parties recognise the need to aim at a wider market coupling cooperation and the Parties agree to discuss on any potential option as may be agreed between the PXs and/or TSOs and other power exchanges and transmission system operators.

Paragraph 4.3 - GOOD FAITH COOPERATION ON EQUAL BASIS

The Parties shall exercise their rights and obligations under this Agreement in good faith and shall adopt a fair and loyal treatment towards each other, according to which all Parties should be treated equally without prejudice of interpretation principles set in Paragraph 23.8.

Paragraph 4.4 - TASK ALLOCATION

- 4.4.1.** The Parties shall allocate their tasks under this Agreement in the most efficient manner, taking into account the core competences of the TSOs on the one hand and of the PXs on the other hand and the purposes of this Agreement set forth in Article 1.

4.4.2. The Parties therefore agree that the:

- (a) PXs shall jointly put at disposal their know-how and experience in their daily activity of matching electricity orders and price determination and jointly perform the Market Coupling by using their local existing market platforms and the Market Coupling System through which Available Interconnection Capacity will be implicitly Allocated on a day ahead basis; and
- (b) TSOs shall jointly put at disposal their know-how and experience in their daily activity of Available Interconnection Capacity calculation, of management of Congestions, of the granting of Physical Transmission Rights for Cross Border Exchanges and of management of grid security, and shall jointly put at disposal of the Market Coupling the Available Interconnection Capacity.

Given that, on the one hand, the daily business of the TSOs to calculate the Available Interconnection Capacity on the grid is essential to the Market Coupling and, on the other hand, that the outcome of this calculation has a material impact on the price formation which is the core business of the PXs, Parties agree that TSOs may decide to change their current Available Interconnection Capacity calculation methodology, as communicated to the PXs at the date of entry into force of this Agreement set forth in Paragraph 19.1, provided that the PXs are timely informed of any such change that could materially adversely affect price formation. PXs may request a validation study or a market consultation.

Paragraph 4.5 - STATE OF THE ART PERFORMANCE

4.5.1. Each Party shall perform its obligations under this Agreement and under the relevant Subsidiary Agreements:

- (a) in compliance with all requirements of this Agreement, the relevant Subsidiary Agreements and all laws and regulations applicable to it;
- (b) in compliance with good practice, state of the art and current professional standards applicable to this type of obligations, and any specifications and requirements decided upon by the Steering Committee;
- (c) within target dates and/or target deadlines specified as the case may be under this Agreement;
- (d) using, where appropriate, suitable technology, materials and/or equipment including necessary backups and contingency plans and trained and competent staff for the execution of its obligations under this Agreement;
- (e) with a view to assuring the good implementation of it in the best interest of all Parties; and
- (f) with all necessary licenses, certification and authorisations, at local and/or regional level, to perform their obligations under this Agreement.

The Parties shall ascertain cost efficiency and shall co-operate to avoid unnecessary costs and identify and implement efficient solutions. Parties shall ensure that costs are in line with CACM, more specifically costs shall be reasonable, efficient and proportionate.

4.5.2. Each Party declares, by signing this Agreement, that it has the knowledge, experience and human and technical competence necessary for the satisfactory performance of its obligations in accordance with this Agreement.

Paragraph 4.6 - SUBCONTRACTING

- 4.6.1.** In the event of subcontracting to a third party, the performance of subcontractors shall be in accordance with this Agreement.
- 4.6.2.** A Party subcontracting the performance of all or part of its obligations under this Agreement shall at all times remain fully responsible and liable towards the other Parties for the fulfilment of its obligations and for the performance of the subcontractor, in accordance with this Agreement, unless otherwise specified in this Agreement.
- 4.6.3.** To the extent the subcontracting concerns one of the essential activities identified in this Paragraph 4.6.3 (a) to (c), the Party subcontracting its performance shall inform the other Parties in writing of the identity of the subcontractor, the scope of the subcontracting and of any practical implication of this subcontracting on the Market Coupling, unless this information has already been provided to the other Parties at the date of entry into force of this Agreement set forth in Paragraph 19.1.

For the purpose of this Paragraph, the following activities are deemed to constitute essential activities :

- (a) hosting and operating the Market Coupling System;
- (b) hosting and operating the TSO Common System; and
- (c) hosting of the data storage.

Article 5 – MARKET COUPLING COMPONENTS AND RESPONSIBILITIES

Paragraph 5.1 - GENERAL PRINCIPLES REGARDING ROLES AND RESPONSIBILITIES, AND COMPONENTS

- 5.1.1.** Roles and responsibilities of the TSOs on the one hand and PXs on the other hand, shall be compliant with the roles and responsibilities needed for the Market Coupling related to the capacity calculation and the capacity allocation.
- 5.1.2.** The Parties shall put at disposal, operate and maintain the Components for the Market Coupling set forth in this Article.
- 5.1.3.** The Parties shall have backups for the Components to ensure continuity of the Market Coupling.
- 5.1.4.** The Parties shall agree in good faith on which supporting documentation in respect of Components is to be exchanged between them and on the required detail level of this documentation.

- 5.1.5.** A Party undertakes to promptly notify to the Steering Committee any difficulty to comply with this Article 5 or any non-compliance with this Article 5. The Steering Committee is entitled to discuss any possible solution and decide on it.
- 5.1.6.** The Parties shall put at disposal and maintain Physical Links and Interfaces as set forth in the Component List as mentioned in Annex 6.

Paragraph 5.2 - MC REQUIREMENTS

The Parties shall jointly determine and maintain the MC Requirements, consisting of the following documents:

- (a) High Level Functional Architecture for Normal Circumstances and Fallback Circumstances (Annex 8);
- (b) Market Coupling System external interface requirements (Annex 8);
- (c) Change Control Procedure (Annex 7) and the Operational Procedures (Annex 8) included.

Paragraph 5.3 - JOINT PX COMPONENT

- 5.3.1.** PXs shall jointly put at disposal, operate and maintain, to the benefit of all Parties and in compliance with this Agreement a Market Coupling System, it being understood that for operational purposes each PX may use its own instance of the Market Coupling System when performing operations.
- 5.3.2.** PXs shall jointly determine and maintain the requirements of the Market Coupling System and the internal interface requirements between the ATC calculation Executable Software and the Market Coupling System. In case of an updated version of any of these requirements, PXs shall jointly put at the disposal of the TSOs the latest version of these requirements on their request.
- 5.3.3.** PXs shall jointly ensure maintenance of the Joint PX Components in compliance with the MC Requirements as mentioned in Paragraph 5.2.

Paragraph 5.4 - JOINT TSO COMPONENT

- 5.4.1.** TSOs shall jointly put at disposal, operate and maintain, to the benefit of all Parties and in compliance with this Agreement a TSO Common System.
- 5.4.2.** The TSO Common System calculates in a first phase the Available Interconnection Capacity based on the ATC Based Capacity Calculation Method.
- 5.4.3.** TSOs shall jointly put at disposal, operate and maintain to the benefit of all Parties the TSO Common System.

- 5.4.4.** TSOs shall jointly ensure maintenance of the TSO Common System in compliance with the MC Requirements as mentioned in Paragraph 5.2.

Paragraph 5.5 - INDIVIDUAL PX COMPONENTS

- 5.5.1.** Each PX shall individually ensure that, at the latest as of the ATC Based Launch Date its own systems (including the necessary backup copies of them), business processes and products concerned by or involved in the Market Coupling as well as its own systems or mechanisms needed for Cross PX Clearing enable the Market Coupling in compliance with this Agreement.
- 5.5.2.** In particular, each PX shall, in case this is necessary, adapt its products, Market Rules, systems, Physical Links and Interfaces and processes concerned by or involved in the Market Coupling, in order to:
- (a) send anonymous data from its order book to the Market Coupling System;
 - (b) receive the Market Coupling Results and ensure the local conclusion of electricity contracts between market participants in compliance with the Market Coupling Results; and
 - (c) publish the preliminary and final Market Coupling Results.
- 5.5.3.** Each PX shall ensure maintenance of its Individual PX Components in compliance with the MC Requirements as mentioned in Paragraph 5.2.

Paragraph 5.6 - INDIVIDUAL TSO COMPONENTS

- 5.6.1.** Each TSO shall ensure individually that, at the latest as of the ATC Based Launch Date its own systems (including the necessary backup copies of them), business processes and products concerned by or involved in the Market Coupling enable the Market Coupling in compliance with this Agreement.
- 5.6.2.** In particular, each TSO shall, in case this is necessary, adapt its systems, adapt its relevant contractual framework falling within its authority, request the necessary changes to the relevant regulatory and contractual framework falling outside its authority and adapt its business processes necessary for the Market Coupling, in order to be able to:
- (a) send the network data necessary for defining the Available Interconnection Capacity to the TSO Common System;
 - (b) put at the disposal of the PXs the Physical Transmission Rights, by sending the Programming Authorisations, for energy flows resulting from the Market Coupling in exchange of the Congestion Revenue, as specified in Paragraph 6.2.5.1;
 - (c) receive and process nominations after the Market Coupling.
- 5.6.3.** Each TSO shall ensure maintenance of the Individual TSO Components in compliance with the MC Requirements as mentioned in Paragraph 0

Article 6 - DAILY OPERATIONS

Paragraph 6.1- GENERAL PRINCIPLES

- 6.1.1.** As the daily operation of the Market Coupling is dependent on data exchange between the different Components, the Parties shall operate the Components in accordance with this Article, comply strictly with the Operational Procedures referred to in this Article 6 and further developed in Annex 8; and take all actions necessary to duly implement this Article 6.
- 6.1.2.** The responsibilities of each Party in respect of data exchange and transmission are further set forth in Annex 8.
- 6.1.3.** Ad hoc Operational Procedures may be established by the Steering Committee to determine how the Parties shall act on specific days or in specific circumstances.
- 6.1.4.** The Parties shall establish an Operational Calendar indicating which Party is responsible for the performance of the operational tasks as mentioned in the Operational Calendar and for what moment in time exactly (Annex 9).

Paragraph 6.2 - NORMAL PROCEDURE

6.2.1. Introductory principle

In Normal Circumstances, the Parties shall perform Market Coupling on a daily basis in accordance with the provisions in this Paragraph 6.2.

6.2.2. Available Interconnection Capacity Calculation

The TSOs (or their subcontractors) shall jointly calculate, aggregate and communicate to the PXs the Available Interconnection Capacity on a daily basis and in accordance with the procedure described in Annex 8. This Available Interconnection Capacity shall be made available to the PXs according to the conditions as defined in Article 7 on firmness.

6.2.3. Market Coupling Result calculation and validation

- 6.2.3.1.** PXs shall proceed to the calculation of the Market Coupling Results taking into account the Available Interconnection Capacity communicated by the TSOs.
- 6.2.3.2.** The calculated PX Net Positions shall subsequently be subject to validation by the TSOs in accordance with the procedure described in Annex 8. While awaiting such a validation, PXs may

publish preliminary Market Coupling Results it being understood that TSOs will not be held liable for any damage arising from the use of those preliminary results.

6.2.4. Publication of the final Market Coupling Results

6.2.4.1. As soon as the PX Net Positions have been validated by the TSOs, the Parties shall publish final Market Coupling Results and perform the actions requested as described in detail in procedure described in Annex 8, after the publication of the final Market Coupling Results.

6.2.5. Cross Border Nominations

6.2.5.1. The TSOs shall provide the Physical Transmission Rights and Programming Authorizations to the PXs. The TSOs have jointly designated an entity to act in this process as described in Paragraph 6.2.5.2 and 6.2.5.3. and specified in Subsidiary Agreements or other agreements.

6.2.5.2. By means of the TSO Common System, this entity shall on behalf of the TSOs and on a daily basis,

- (a) calculate the Physical Transmission Rights;
- (b) make available the Physical Transmission Rights as calculated in accordance with the PX Net Positions to the respective PX;
- (c) send the Programming Authorisations in accordance with the procedure described in Annex 8.

The modalities of making available the Physical Transmission Rights and sending the Programming Authorisations are further organised in Subsidiary Agreements or other agreements.

6.2.5.3. Each PX ensures that the Programming Authorisations it received from the entity designated by the TSOs are provided to its designated CCP. Each PX shall request the designated CCP to perform the Cross Border Nominations to the respective TSOs in accordance with the Programming Authorisations and according to the procedure in Annex 8.

6.2.6. Cross PX Clearing and pay out of Congestion Revenue

6.2.6.1. PXs undertake to organise Cross PX Clearing, by means of the intervention of the CCP designated to perform the clearing and settlement of the transactions concluded on their respective trading platforms.

6.2.6.2. Therefore, PXs shall take the necessary arrangements between themselves and/or the designated CCP to (among others):

- (a) jointly agree on a procedure for the execution of the financial and physical settlements between themselves and/or the designated CCPs; and
- (b) jointly select and agree on a bank to facilitate financial settlement of transactions between the designated CCPs.

- (c) taking into account the necessary procedures concerning the technical management of Rounding Energy as provided in Annex 14.
- 6.2.6.3. Each PX shall make the necessary contractual arrangements authorising and instructing its designated CCP to pay out the collected Congestion Revenue directly to the entity designated by the TSOs. The modalities of the collection of Congestion Revenue in return, are organised in Subsidiary Agreements or other agreements.
- 6.2.6.4. The PXs shall take necessary contractual arrangements for the pay out of the Congestion Revenue in cases of negative prices. Each PX shall request its designated CCP to ensure that the system of each designated CCP is designed in a way so as to allow the handling of negative prices.
- 6.2.6.5. In case a PX and the CCP it designated are separate legal entities, the Parties acknowledge that this PX shall not be liable for the payment of the Congestion Revenue to the entity designated by the TSOs. In case a PX and the CCP it designated are not separate legal entities, the Parties acknowledge that only such PX may be held liable for the pay out of the Congestion Revenue.
- 6.2.6.6. The TSOs agree that each of the designated CCPs shall be relieved from its payment obligation in respect of the Congestion Revenue as soon as the Congestion Revenue is received on the bank account designated by the TSOs. For the avoidance of doubt, each TSO shall remain the sole owner of its share of the Congestion Revenue.
- 6.2.6.7. Each TSO shall make the necessary contractual arrangements authorising and instructing the designated entity of the TSOs to receive and validate the collected Congestion Revenue directly from the designated CCPs.
- 6.2.6.8. Each TSO and its respective CCP shall make the necessary contractual arrangements with respect to the financial, technical and physical management of Rounding Energy in accordance with Annex 14.

Paragraph 6.3 – BACK-UP PROCEDURE

- 6.3.1.** In case of Back-Up Circumstances, the Parties shall comply with the Back-Up Procedure(s) in Annex 8 in order to recover from a failure of the indicated process step in the Normal Procedure.

Paragraph 6.4 - FALL BACK PROCEDURES

- 6.4.1.** In case of Fall Back Circumstances, the Parties shall comply with the Fall Back Procedures in Annex 8.
- 6.4.2.** TSOs shall jointly make the necessary contractual arrangements to organise the allocation of Available Interconnection Capacity in Fall Back Circumstances.

Article 7 - FIRMNESS

In the process of transferring energy between market participants across borders, the TSOs shall accept Cross Border Nominations on day ahead according to Paragraph 6.2.5, subject to potential curtailment on the day of delivery for exceptional reasons, meaning reasons of security of supply and/or Force Majeure.

TSOs shall ensure that capacities are firm as stipulated in applicable regulation as the case may be.

PXs and/or the CCPs shall not be subject to any financial damages or benefits regarding imbalance settlement by TSOs due to any imbalance created by such curtailment. The TSOs are not obliged to pay any other indemnification towards the PXs and/or the CCPs in the aforementioned cases of curtailment.

Article 8 - CHANGES

Paragraph 8.1 - GENERAL PRINCIPLES

- 8.1.1.** The Steering Committee shall decide on the final approval of changes or decisions on issues related to change requests under the Change Control Procedure.
- 8.1.2.** Changes shall be financed according to the principles set forth in Article 12 unless decided otherwise in writing by the Steering Committee.
- 8.1.3.** A Party or subset of Parties may request a change to a Component that serves only its/their own benefit. In such a case, the other Parties shall facilitate the implementation of the required change provided that:
 - (a) the requesting Party/subset of Parties shall pay the other Parties for the costs related to such change. In case the request is from a subset of Parties, this subset of Parties shall agree on the sharing between themselves of the costs related to such changes in a specific agreement; and
 - (b) following the application of the Change Control Procedure, the Steering Committee shall agree unanimously on the modalities of implementation of the required change; and
 - (c) the requested change has no impact to the other Parties.
- 8.1.4.** In case the benefit of a change issued and implemented according to Paragraph 8.1.3 is extended to more or all Parties in a later stage, the newly benefiting Parties shall participate in the cost sharing on a pro rata basis with the Parties who had paid for the change to reflect the benefits enjoyed. Parties shall agree in good faith on the sharing key for such costs.

Paragraph 8.2 - MARKET COUPLING WITH OTHER AREAS, OUTSIDE MRC

- 8.2.1.** Parties of this Agreement entering into implementation of another market coupling with other area(s) shall inform the other Parties no later than six (6) months before the planned effective launch.

8.2.2. The other Parties are entitled to receive the necessary information reasonably required in order to verify that their legitimate interests are not harmed and to evaluate the possible impacts on the Market Coupling organized under this Agreement.

Parties shall use their Best Efforts to identify mutually acceptable solutions in due time without harming the existing Market Coupling.

Article 9 - SIMULATION FACILITY

9.1.1. The PXs shall, as a service accessory to the performance of the Market Coupling, jointly provide the TSOs with the Simulation Facility Services described in Annex 12 with a view to allowing them to use the Simulation Facility as described in this Annex.

9.1.2. The Simulation Facility (including the data contained in it) is made available as such for TSOs' use as set forth in Annex 12 and does not constitute any form of advice, recommendation, representation or endorsement on the part of the PXs. The PXs shall not be responsible for any business decision taken by a TSO that is based on a simulation performed with the Simulation Facility.

9.1.3. Historical data made available via the Simulation Facility and any simulation results produced with the market data used are commercially sensitive information and are deemed Confidential Information. Any use of the historical market data available via the simulation facility services for purposes other than simulation is strictly forbidden. No download by TSOs of the historical market data included in the simulation facility services shall be possible.

9.1.4. The simulation facility services shall take into account the data from all Parties. All Parties undertake to provide free of charge their historical data to enable such simulation facility services. Any output of the simulations can be freely used by TSOs in their TSO business and published by any Party.

9.1.5. Except otherwise set out in this Agreement, no representation, warranty or indemnity, expressed or implied, statutory or otherwise, whether as to correctness, accuracy, quality, fitness for purpose, non-infringement or any other matter, is given or assumed by the PXs in respect of the Simulation Facility, the historical data contained in it and the simulations performed with it.

9.1.6. In particular, and without prejudice to the generality of Paragraph 9.1.4, no guarantee is given by the PXs for:

- (a) an uninterrupted access to the Simulation Facility; and
- (b) the absence of viruses and similar computer software code designed to disrupt or disable TSOs ability to access the Simulation Facility or their operations.

- 9.1.7.** Since use of and access to the Simulation Facility depends on third parties (e.g. telecommunication carriers) whose performance is outside PXs' control, PXs disclaim all liability for direct or indirect damages arising from the failure of the transmission or receipt or corruption of the simulation results or data (or part of them) due to (i) causes beyond the reasonable control of the PXs or (ii) causes which are not reasonably foreseeable by the PXs, including but not limited to interruption or failure of communication or digital transmission links and internet slowdowns or failures.
- 9.1.8.** Paragraph 9.1.4 and Paragraph 9.1.5 shall not apply in case of fraud or intentional corruption or disruption of access or injection of viruses by the PXs.

Article 10 - INTELLECTUAL PROPERTY RIGHTS

Paragraph 10.1 - GENERAL PRINCIPLES

10.1.1. Joint Parties' Developments

- 10.1.1.1. All works, documentation and information elaborated by the Parties jointly or on their joint behalf, in the framework of this Agreement, whether prior to or after entry into this Agreement (hereafter "Joint Parties' Developments") shall as of their creation be jointly owned by all Parties and all (Intellectual) Property Rights, interests and title in respect to them shall be vested with all the Parties to the fullest extent possible under applicable law.
- 10.1.1.2. As co-owner each Party is entitled to use the Joint Parties' Developments as if it were the sole owner of it for internal business purposes only, without prejudice to the confidentiality obligations set in Article 15. A Party may only use Joint Parties' Development for business purposes outside the scope of the Market Coupling provided that it obtained the prior written consent of all the other co-owners.
- 10.1.1.3. Ownership rights of Joint Parties' Developments may be transferred to Parties' affiliated companies subject to the prior written consent of all Parties, which shall not be unreasonably withheld.

10.1.2. Joint TSO Components/Joint PX Components

- 10.1.2.1. Ownership over, title to or interest in the Joint TSO Components or to the Joint PX Components respectively shall be governed by the Subsidiary Agreements entered into between the TSOs and between the PXs respectively.

Nothing in this Agreement shall be understood as a transfer of ownership, title or interest on the Joint TSO Components to the PXs and the PXs shall not benefit from any right on the Joint TSO Components.

Nothing in this Agreement shall be understood as a transfer of ownership, title to or interest in the Joint PX Components to the TSOs and the TSOs shall not benefit from any right on the Joint PX Components, except as indicated in Paragraph 10.2.

10.1.3. Simulation Facility

- 10.1.3.1. The TSOs acknowledge that the PXs jointly own as co-owners the Simulation Facility and the Intellectual Property Rights pertaining to it. Nothing in this Agreement shall be understood as a transfer of ownership, title to or interest in the Simulation Facility to the TSOs and they shall not benefit from any right to the Simulation Facility.
- 10.1.3.2. The PXs hereby grant to each TSO for the term it is bound by this Agreement a non-exclusive, non-sub-licensable, non-transferable license within the control area(s) to access and use, for internal purposes, the Simulation Facility (including the historical data contained in it) as described in Annex 12.

10.1.4. Individual PX/TSO Components

Each Party shall remain the sole owner of the Individual PX Components or TSO Components and the other Parties shall not have any rights on such Individual PX Components or TSO Components.

10.1.5. Data

- 10.1.5.1. Confidential Information disclosed in the framework of this Agreement shall remain the exclusive property of the Party(ies) from which it emanates and this Agreement shall not be construed as providing any (Intellectual) Property Rights or any other rights, title to or interest in the Confidential Information to the Party receiving Confidential Information.
- 10.1.5.2. Exchange market data, i.e. data relating to the bids or contracts of participants of PXs, the supply and demand curves, anonymous block order lists, the market clearing price and market clearing volume and related indices, historical data contained in the Simulation Facility shall remain the exclusive property of the PXs concerned. This Agreement shall not be construed as providing any (Intellectual) Property Rights or any other rights, title or interest to the TSOs.
- 10.1.5.3. Data generated by the TSOs in respect of available Cross-Zonal Capacities (and optional Allocation Constraints) remain the exclusive property of the TSOs concerned.

Paragraph 10.2 - TSO LICENSE

- 10.2.1. Upon entry into force of this Agreement in accordance with principles set in Paragraph 19.1, the PXs shall grant each TSO, on its request and against payment of a license fee, a Minimal License or an Extended License. This will be in respect of the terms and conditions set forth in the standard contract form for the Minimal License, respectively for the Extended License attached as Annex

11. It will be subject to the conclusion by such TSO of this standard contract for the Minimal License respectively for the Extended License.

10.2.2. TSOs having purchased the Minimal License or not having purchased any license at the time of entry into force of this Agreement may at any time purchase the Extended License or the Minimal License at the price indicated in the standard contract form for the Minimal License respectively for the Extended License attached as Annex 11.

10.2.3. Such License will provide for disclosure of the Confidential Information, under strict conditions of confidentiality and such information may only be used for TSO internal purposes, which shall include but not be limited to further developments.

Article 11 - GOVERNANCE

Paragraph 11.1 - GENERAL PRINCIPLES

11.1.1. The governance of the Market Coupling shall be carried out by the Parties by means of a Steering Committee. The Steering Committee shall be empowered to discuss and decide on any matter related to the implementation, operation and adaptation of this Agreement and any other matter for which it is expressly made competent pursuant to any other provision of this Agreement.

11.1.2. Decisions of the Steering Committee shall be binding on all Parties under the terms of the Rules of Internal Order of the Steering Committee.

11.1.3. The Steering Committee shall be supported, in accordance with the provisions of the Rules of Internal Order of the Steering Committee, by any other committee or working group as decided by the Steering Committee. The Steering Committee determines the composition and the modalities of the functioning of such committee or working group. Annex 4 includes Rules of Internal Order of the Steering Committee.

Paragraph 11.2 - COMPOSITION AND MEETINGS OF THE STEERING COMMITTEE

11.2.1. All Parties are entitled to participate to and vote in the Steering Committee. To this effect, each Party shall designate one (1) voting representative and shall ensure that its Steering Committee voting representative has all necessary powers and authority to take decisions binding upon its company on all items of the agenda.

11.2.2. Each Party shall be duly represented, with respect to each meeting of the Steering Committee.

11.2.3. The meetings of the Steering Committee shall be co-chaired by one representative from the PXs and one representative from the TSOs. The co-chairmanship of the meetings of the Steering Committee shall be rotating on a yearly basis.

11.2.4. Meetings shall be organised in accordance with the Rules of Internal Order of the Steering Committee.

Paragraph 11.3 - STEERING COMMITTEE DECISION MAKING RULES AND RECORDING

11.3.1. The Steering Committee shall be quorate when all Parties entitled to vote on a particular decision are represented according to the principles set forth in the Rules of Internal Order of the Steering Committee. The Steering Committee is deemed quorate also in case a Party is excused due to exceptional circumstances under the Rules of Internal Order of the Steering Committee, if the Party cannot participate via web/skype means.

11.3.2. Decisions of the Steering Committee are, unless otherwise provided in this Agreement, taken by unanimous consent of the voting members of the Steering Committee in accordance with the decision-making process rules in the Rules of Internal Order of the Steering Committee.

11.3.3. The Steering Committee Secretary shall record the decisions of the Steering Committee and communicate them to each Party, which shall be considered sufficient proof of the decisions to which it relates.

Article 12 - REMUNERATION AND COST RECOVERY

Paragraph 12.1 GENERAL PRINCIPLES

12.1.1. Cost sharing of any further design and implementation costs shall be supported by the Parties benefiting from the change, guaranteeing objective and fair criteria for their redistribution among the concerned Parties. The Steering Committee may decide to consider certain costs as common costs, to be then shared by all the Parties on an equal basis, except provided otherwise by the Steering Committee.

If the costs are based on a service agreement with an external party, all Parties benefiting of this service and party to this service agreement (subject to the approval of this external party) are supporting these costs; they shall be shared amongst the relevant Parties according to the sharing key, payment and invoicing terms set forth in such service agreement.

12.1.2. Modalities of the implementation of cost recovery at the local level shall be set forth in the relevant Subsidiary Arrangements between the corresponding PX and TSOs, subject to approval or comfort by competent authorities if applicable, or in local NRAs' decision.

Paragraph 12.2 - INDIVIDUAL AND JOINT TSO COSTS

- 12.2.1.** Each TSO shall recover its own individual costs arising under this Agreement (such as local operation and maintenance costs related to the Market Coupling, e.g.) at its local level.
- 12.2.2.** TSOs shall recover joint TSO costs arising under this Agreement (such as operation and maintenance costs of the TSO Common System, e.g.) by way of a sharing key to be agreed upon in a Subsidiary Agreement between the relevant TSOs as under Annex 3.

Paragraph 12.3 - PX' COSTS RELATED TO THE OPERATIONS AND MAINTENANCE OF THE WB6 MARKET COUPLING

- 12.3.1.** Each PX shall recover its own individual costs related to operations and maintenance of the Market Coupling from the TSOs. Each PX shall recover its costs under Paragraph 12.2.1 and its share of the costs under Paragraph 12.2.2 by way of Subsidiary Agreements with its corresponding TSO(s) as under Annex 3.
- 12.3.2.** PXs shall recover joint PX costs arising under this Agreement (such as maintenance of the MC System, e.g.) by way of a sharing key to be agreed upon in a Subsidiary Agreement between the PXs as under Annex 3.

Paragraph 12.4 - CROSS PX CLEARING COSTS

- 12.4.1.** The TSOs recognise that, with regard to their tasks in Cross PX Clearing, the PXs and/or CCPs will incur costs related to the use of their infrastructure or services necessary for the performance of their respective tasks related to the Cross PX Clearing.
- 12.4.2.** Costs under Paragraph 12.3 shall be invoiced by the PXs and/or the CCPs to the entity designated by the TSOs. TSOs shall agree with their designated entity on a sharing key in a specific agreement. This agreement shall stipulate that these costs will be reimbursed to the CCPs by their designated entity, on behalf of the TSOs.
- 12.4.3.** TSOs commit to reimburse or not to bill the CCP for the costs incurred in case of subscribing to specific contracts between the CCP and the relevant TSO(s) (specific agreement and/or balance responsible party contract) necessary to perform the Cross Border Nominations for the Market Coupling (such as costs of collaterals, membership fees, costs for bank guarantees, e.g.).

Paragraph 12.5 - PX OR CCP COSTS RELATED TO OTHER SERVICES

- 12.5.1.** If the Parties make the necessary contractual arrangements with third party related to the data storage according the High Level Functional Architecture, they have to foresee a burden sharing (Annex 8).

12.5.2. Costs of operations and maintenance of the Simulation Facility incurred by the PXs shall be reimbursed by direct invoicing by the concerned PX(s) of the subscribing TSO(s) according to a share determined by total costs divided by the number of subscribers.

12.5.3. TSOs shall be entitled to request from PXs any justification of the costs charged under Paragraph 12.4.1 and Paragraph 12.4.2 at any time.

Paragraph 12.6 - NON RECOVERABLE COSTS & OTHER AD-HOC COSTS

The recovery mechanism and cost sharing of costs related to the operation of the Market Coupling not falling under the costs categories listed under Paragraph 12.1 to Paragraph 12.5 shall be decided on a case-by-case and ad hoc basis, by the Steering Committee. In the decision process, the Steering Committee may decide that the ad hoc cost falls within the TSO or PX categories, in which case the corresponding Paragraph is applicable for its recovery, or that they are non-recoverable (e.g. meeting costs, travel costs).

Paragraph 12.7 - APPROVAL BY REGULATORS

12.7.1. For the avoidance of doubt, each Party acknowledges that the recovery of the costs under this Article 12 is subject to the endorsement or approval of the competent national regulator if those costs are subject to any national regulatory validation process.

12.7.2. In case of non-approval or non-endorsement of the costs under this Article 12, either *post-factum* or for the future, by a competent national regulator, the involved Parties shall seek to find a solution, for the involved TSO(s) and PX(s), at the local level, under the terms and conditions of the relevant Subsidiary Agreement or of any other agreement.

12.7.3. In case of non-approval or non-endorsement for the future of the costs under Paragraph 12.4, by a competent national regulator, this case shall be considered as Hardship, consequently the Parties shall apply the procedure as under Paragraph 18.4.

12.7.4. When identifying the solution mentioned in Paragraph 12.6.2 and Paragraph 12.6.3, the involved Parties shall seek to mitigate costs.

Paragraph 12.8 - COST RECOVERY IMPLEMENTATION AT THE LOCAL LEVEL

The modalities of the implementation of cost recovery at the local level shall be set forth in the relevant Subsidiary Agreement(s) or in any other agreement. In case of contradiction with this Agreement, the terms of the Subsidiary Agreement(s) or of the other agreement regarding cost recovery shall prevail over Article 12.

Article 13 - EXTERNAL COMMUNICATION

Paragraph 13.1 - SCOPE OF APPLICATION

- 13.1.1.** Without prejudice to (i) Article 20 and (iii) Commission Regulation (EU) No 543/2013 of 14 June 2013 on submission and publication of data in electricity markets, the principles under this Article 13 shall apply to external communication in all forms relating to any subject in the framework of this Agreement or related to Market Coupling, without prejudice to the confidentiality obligations under Article 15.
- 13.1.2.** The Parties may deviate from the principles under this Article 13 only if necessary to comply with applicable mandatory laws and regulations.

Paragraph 13.2 - GENERAL PRINCIPLES

- 13.2.1.** The Parties shall be free to express written or oral positions or opinions about all Market Coupling related matters in their own name, provided they do not prejudice or negatively affect the collective and/or individual interests or the reputation of the other Parties.
- 13.2.2.** The Parties shall not express positions or opinions in the name of one or more other Party(ies) unless they have been explicitly mandated to do so in writing.
- 13.2.3.** The Parties shall communicate at all times correct and accurate information.
- 13.2.4.** A Party, intending to communicate on results of simulations performed individually or with other parties and for which Confidential Information is used, shall, prior to such communication, have the consent of the Parties to whom the Confidential Information, contributing to the results of the simulation, belongs. Such consent shall not be unreasonably withheld or delayed.
- 13.2.5.** In the event a communication by a Party does not comply with this Article, the other Parties are entitled to request such Party to publicly correct its communication, without prejudice to any other rights or remedies under this Agreement or by law (such as but not limited to its right to claim compensation in accordance with Article 16). Upon receipt of such valid request, such Party shall forthwith correct its communication publicly in accordance with the request.

Paragraph 13.3 - JOINT COMMUNICATION

- 13.3.1.** The Steering Committee shall decide on the channel via which joint communications are made to the public and to the market participants. Each joint communication shall bear the logo of each Party or a common Market Coupling logo, if available. Joint communications shall only take place after formal approval by the Steering Committee of the content of the communication. The Parties shall also agree, for any joint communication, on the date and hour at which the joint communication is effective.

13.3.2. The Parties shall communicate jointly on, at least, the following events:

- (a) reporting on major incidents (Annex 8);
- (b) operation suspensions or interruptions;
- (c) content of this Agreement that must be disclosed to the public;
- (d) market coupling with other areas;
- (e) exit of Parties;
- (f) termination;
- (g) Market Coupling launch; and
- (h) other major changes or events for which a joint communication is judged necessary by the Steering Committee.

13.3.3. A Party may communicate individually to third parties on the issues which are subject to joint communication as mentioned under Paragraph 13.3 after Steering Committee approval of the content thereof.

Paragraph 13.4 - OPERATIONAL DATA COMMUNICATION

The Parties shall publish operational data regarding Market Coupling, for which content, format, communication channel and frequency have been agreed upon with the competent regulatory authority. The undertaking by a Party to publish operational data is additional to any publication obligation under local laws or regulations to which a Party may be subject.

Paragraph 13.5 - WEBSITE

The Parties may decide to develop a common website for the general public. In such case, one Party shall be appointed by the other Parties for maintenance and registration of the domain name. The content of the common website shall be explicitly approved by all the Parties. The Steering Committee shall follow the development and maintenance of the common website, as well as shall decide the cost-sharing of the website.

Article 14 – REGULATORY RELATIONS WITH COMPETENT AUTHORITIES

14.1.1. The Parties shall cooperate to respond as adequately, consistently and soon as possible to any information request issued by a competent authority (administrative, judicial or other) in relation to this Agreement or to Market Coupling when such information request relates to more Parties than the addressed Party. A Party shall assist the addressed Party and provide it with information upon its request to the extent reasonably necessary for the latter to respond to such a competent authority's request.

14.1.2. Each Party shall, to the extent possible, before providing the information addressing the information request mentioned in Paragraph 14.1.1, ensure that the following conditions are fulfilled:

- (a) the request is in writing or confirmed in written form;
- (b) the request is duly motivated and the request is based on a well identified legal basis;

- (c) the scope of the requested information is clearly identified/defined; and
- (d) the information requested is necessary for the purpose of the enquiry.

14.1.3. In case a Party receives an information request of a competent authority as under Paragraph 14.1.1, it shall, to the extent possible, prior to any communication of information:

- (a) narrow down the scope of information provided to the authorities as much as possible to fulfil the regulatory request and in compliance with the legal framework applicable to the inquiry;
- (b) inform the relevant other Parties of it as soon as reasonably possible of the existence, scope, terms and circumstances of the request (provided it is not prohibited to do so by law or Market Rules);
- (c) explain to the relevant other Parties the circumstances, the content and the consequences of the information request and of the information to be provided in accordance with a);
- (d) explain to the relevant other Parties the competence of the authority to request the information; and
- (e) to the extent the information to be communicated concerns Confidential Information:
 - (i) consult the concerned Party(ies) on the advisability of taking legal steps to resist or narrow the request; and
 - (ii) obtain an order or a reliable assurance, from the requesting authority, that the Confidential Information will be treated confidentially.

Except if prior written consent causes restriction on compliance with applicable mandatory law or with legally justified orders or information requests of a competent authority, a Party shall not provide proprietary data of another Party without prior written consent of this other Party, such consent not being unreasonably withheld.

14.1.4. Should the competent authority wish to publish the information, the Parties to which the information relates (depending on the request) shall provide the authority with a non-confidential version of the information for this publication purpose.

Article 15 - CONFIDENTIALITY

Paragraph 15.1 - CONFIDENTIAL INFORMATION

15.1.1. The term “Confidential Information” under this Agreement shall mean any information whether or not marked as confidential, exchanged between the Parties in relation to this Agreement or to the Market Coupling, as well as the content of this Agreement.

Paragraph 15.2 - NON DISCLOSURE OF CONFIDENTIAL INFORMATION

15.2.1. A Party shall not:

- (a) disclose, convey or transfer Confidential Information without the prior written explicit consent of the Party(ies) from which the information emanates, such consent not unreasonably to be withheld or delayed;

- (b) use the Confidential Information for any other purpose than that of the Market Coupling (unless such other use is explicitly authorised by the Party(ies) from which the information emanates in prior written form);
- (c) copy or reproduce the Confidential Information except as strictly necessary for the purpose of the Market Coupling; and
- (d) share or disclose the Confidential Information with any person, entity, affiliate, etc. other than the Parties.

15.2.2. By derogation to Paragraph 15.2.1, a Party may disclose the Confidential Information in the following limited exceptional situations:

- (a) in the event the information was known to it prior to the disclosure, with no breach of confidentiality obligation;
- (b) in the event the information is already in the public domain, with no fault or negligence of the Party wishing to disclose;
- (c) In the event the disclosure is required by law or by a competent authority, provided in the latter case that the conditions of Article 14 are fulfilled; and
- (d) In the event of disclosure to its directors, members of management, officers, employees, designated entities under this Agreement, subcontractors, agents, lawyers, professional advisors, external consultants, insurers, financiers provided that such persons:
 - (i) have a definite need to know the information for the purpose of executing an assignment related to the Market Coupling and only to the extent strictly necessary for the performance of this assignment;
 - (ii) is informed by the Party wishing to disclose of the confidential nature of the Confidential Information; and
 - (iii) is bound to respect the confidential nature of the Confidential Information under terms at least equivalent to those under this Agreement.

15.2.3. A Party shall:

- (a) immediately notify in writing to the Party(ies) from which the information emanates any unauthorised disclosure of the Confidential Information of which it had knowledge and for which disclosure it is responsible. In such a case, this Party shall take all reasonable steps to mitigate any harmful effect of the unauthorised disclosure;
- (b) at the first written request of the Party(ies) from which the information emanates, immediately, and in any case no later than three Business Days after the reception of the written request return and/or destroy all Confidential Information disclosed by the latter Party;
- (c) indemnify the Party(ies) from which the information emanates in accordance with this Article and Article 15.4.

15.2.4. Each Party shall take all necessary and appropriate measures and procedures to enforce and maintain the protection of Confidential Information and to prevent any disclosure of it.

Paragraph 15.3 - RETURN OR DESTRUCTION OF CONFIDENTIAL INFORMATION

In case of termination of this Agreement, exit or exclusion of a Party, the concerned Party(ies) shall return the Confidential Information to the Party(ies) from which the Confidential Information emanates or have

it destroyed. In case of destruction, the Parties shall give the concerned Party(ies) sufficient proof of the destruction of the Confidential Information.

Paragraph 15.4 - BREACH OF CONFIDENTIALITY

15.4.1. In case of breach, by a Party, of any of its obligations under this Article, that Party shall pay a fixed lump sum **sum XYZ** € per breach to the affected Party(ies). The lump sum **XYZ** € shall be shared equally between the Parties affected by the breach of confidentiality.

15.4.2. A Party, able to prove higher damages than the sum it will receive after sharing the lump sum of **XYZ** € under Paragraph 15.4.1 may claim further indemnification, subject to the liability limitations in Paragraph 16.3.

15.4.3. The Parties acknowledge that indemnification may not be an adequate remedy for any breach of this Article. The Party(ies) from which the information emanates shall be entitled to the remedy of injunction, specific performance and other equitable or similar relief for any threatened or actual breach of this Article and no proof of special damages shall be necessary for the enforcement of this Paragraph 15.4.3.

Article 16 - LIABILITY

Paragraph 16.1 - SCOPE OF APPLICATION

The principles of liability defined in this Article shall apply to all damage occurring after the Launch Date for the Market Coupling.

Paragraph 16.2 - NO JOINT AND SEVERAL LIABILITY

16.2.1. Except otherwise stipulated in this Agreement, each Party is liable for its own commitments only and Parties shall not bear joint and several liability.

16.2.2. This principle shall also be applicable in case of commitments jointly undertaken by the Parties or a subset of them, it being understood however and for the avoidance of doubt, that in such circumstances:

- (a) a proven breach of a jointly undertaken commitment, irrespective of any division of tasks between the Parties jointly undertaking the commitment, constitutes a breach by each of the Parties jointly undertaking that commitment; and
- (b) any indemnification due as a result of such claim(s), shall be divided in equal parts between the Parties having jointly undertaken the concerned joint commitment and each of such Parties shall only be held to pay such part to the claiming Party(ies). No single Party can be held to pay the whole amount for the other Parties having jointly undertaken the

concerned commitment and it is up to the Parties having jointly undertaken the concerned commitment to organise recovery between them, by way of Subsidiary Agreement or other agreements.

Paragraph 16.3 - SCOPE OF LIABILITY BETWEEN THE PARTIES

- 16.3.1.** For the avoidance of doubt, the provisions of this Paragraph 16.3 shall apply to all cases of liability between the Parties in the context of Market Coupling for any reason whatsoever (contractual, extra-contractual or otherwise), either in relation to this Agreement and/or to Subsidiary Agreements.
- 16.3.2.** In case of liability of a Party under this Agreement, the other Parties shall be entitled to claim compensation from this Defaulting Party for any and all losses, damages, charges, fees or expenses, expected and unexpected, which can be considered as a direct damage arising out, or resulting from a default or negligence in the context of this Agreement.
- 16.3.3.** The Parties shall not be held liable for any indirect, immaterial, incidental or consequential damages such as loss of revenues (including, without limitation, loss of Congestion Revenues, loss of opportunity, etc.).
- 16.3.4.** Except in the event of fraud or intentional breach, the indemnification obligations of each Defaulting Party shall at all times for any negligence and default (including in the event of gross negligence and gross default) be limited to an amount of XYZ € per year, irrespective of the number of breaches and the number of Parties suffering damages.
- 16.3.5.** If the sum of all damages exceeds the amount of the liability limitation in Paragraph 16.3.4, the compensation payable to the Party(ies) suffering damages shall be reduced pro rata.
- 16.3.6.** If a Subsidiary Agreement or a local agreement provides operational procedures and liability provisions related to a specific obligation thereof, only the relevant Subsidiary Agreement or a local agreement shall apply in case of a breach of such specific obligation.

Paragraph 16.4 - MITIGATION OBLIGATION

The Defaulting Party(ies) and the Party(ies) suffering damages shall mitigate damages occurring, in particular, but not limited to, damages towards market participants.

For the avoidance of doubt, to the extent that no obligation under the Agreement and its Procedures has been breached, decoupling and application of fallback procedures shall not be considered as a breach of the present Agreement.

Paragraph 16.5 - THIRD PARTY CLAIMS

16.5.1. In case a Party receives a claim for damages suffered by a third party and resulting directly or indirectly from the execution of this Agreement, it shall:

- (a) notify promptly the other Party(ies) in writing of any such claim or of any matters in respect of which such third party claim may apply and keep them informed of the proceedings; and
- (b) fully cooperate with the Defaulting Party in such response and defence as reasonably required.

16.5.2. If a Subsidiary Agreement or a local agreement provides operational procedures and liability provisions related to a specific obligation thereof related to a third party claim, only the relevant Subsidiary Agreement or a local agreement shall apply in this case.

16.5.3. In case the third party claim is based on mere contractual fault, and causing a mere contractual damage, in the framework of an agreement between this third party and the defendant Party, the indemnification obligation(s) of the Defaulting Party towards the defendant Party shall at all times for any default or negligence (including in case of gross negligence and gross default) be limited, to the cap mentioned in Paragraph 16.3.3 except in the event of fraud or intentional breach.

16.5.4. The financial cap mentioned in Paragraph 16.5.2 shall not be applicable between the Parties in case the third party claim is based on tort.

16.5.5. The Defaulting Party shall hold harmless the defendant Party from and against the third party claim brought against the defendant Party as specified under Paragraph 16.5.2 and Paragraph 16.5.4.

16.5.6. The alleged Defaulting Party shall be obliged to join any discussions or dispute settlement procedure (whether amicable, judicial or arbitrational) following a third party claim and its right of defence shall be duly observed.

16.5.7. The defendant Party shall not approve any proposed settlement without the agreement of the Defaulting Party. This agreement shall not be unreasonably withheld, conditioned or delayed.

Paragraph 16.6 - SUBROGATION

16.6.1. The alleged Defaulting Party shall be entitled to subrogate its insurance company to its rights and obligations under this Agreement against the defendant Party, who, by signing this Agreement, is deemed to agree with this subrogation.

Article 17 - FORCE MAJEURE

17.1. No Party shall be liable for delay or failure in fulfilling its obligations under this Agreement or non-compliance with this Agreement if the delay, failure or non-compliance result(s) from Force

Majeure. The obligations of the Party(ies) invoking Force Majeure that are affected by the Force Majeure shall be suspended for the period during which the Force Majeure lasts.

- 17.2.** Upon occurrence of Force Majeure, the Party(ies) invoking Force Majeure shall notify orally or by email the other Parties of it as soon as practicably possible, to be confirmed by registered letter as soon as possible. The oral notice or the email shall, to the extent possible, and, in any event, the confirmation by registered letter, contain a description of the event constituting Force Majeure, of the obligations it can no longer perform and of the probable duration of this event of Force Majeure.
- 17.3.** The Party(ies) invoking Force Majeure shall take all measures which may reasonably be required to resume the performance of its (their) obligations under this Agreement as quickly as practicably possible.
- 17.4.** The Parties shall, if necessary, jointly examine the measures to be taken to limit the effect of Force Majeure.
- 17.5.** If Force Majeure continues for **two (2)** consecutive months following the registered letter under Paragraph 17.2, the Party (or the subset of Parties) that has invoked Force Majeure shall be entitled to exit from this Agreement (under the terms and conditions of Article 20) upon a three (3) months prior notice period to be notified in writing and provided that it demonstrates that:
- (a) the event of Force Majeure invoked in the registered letter under Paragraph 17.2 affects the performance by it of its obligations under this Agreement which are to be considered as essential obligations under this Agreement (such as e.g. but not limited to, the essential activities listed in Paragraph 4.6.3); and
 - (b) it has taken all reasonable measures to remedy such Force Majeure but it is impossible to remedy it.
- 17.6.** If a Party having invoked an event of Force Majeure to suspend the performance of its obligations continues to invoke this event of Force Majeure for more than two (2) consecutive months following the registered letter under Paragraph 17.2, the other Parties shall be entitled to request the exclusion of that Party from this Agreement (under the terms and conditions of Article 21) upon a three (3) months prior notice period.

Article 18 - AGREEMENT MODIFICATIONS

Paragraph 18.1 - GENERAL PRINCIPLES

- 18.1.1.** The Agreement's or Annexes' amendment or modification requires the written signature of all Parties to be effective and binding.

18.1.2. The Steering Committee shall be entitled to change the Annexes to this Agreement, by following the Change Control Procedure (Annex 7).

18.1.3. The Steering Committee Secretary shall communicate any decided new version of an Annex to the Parties.

18.1.4. The Steering Committee is entitled to propose to the Parties amendments to this Agreement and to its Annexes.

Paragraph 18.2 - MODIFICATIONS DUE TO REGULATORY REASONS

18.2.1. In case measures and/or decisions (including modification of laws and regulations) of competent public authority require amendment or modification of this Agreement or of any other document influencing this Agreement, any affected Party(ies) by this measure and/or decision may send a request for modification of this Agreement to the other Parties, as under Paragraph 18.4.

18.2.2. The Parties shall examine as soon as possible the possibilities/conditions for the amendment or modification of this Agreement due to regulatory reasons.

18.2.3. The Parties may refuse to make the necessary amendments to this Agreement due to regulatory reasons on reasonable grounds only.

Paragraph 18.3 - MODIFICATIONS DUE TO HARDSHIP

18.3.1. The Party(ies) affected by Hardship may send a request for modification of this Agreement to the other Parties, in accordance with Paragraph 18.4.

18.3.2. Under this Agreement shall not be considered as Hardship, changes to the legal or the regulatory framework applicable to the Parties or decisions of competent administrative/regulatory authorities.

18.3.3. The Parties shall seek to adjust the conditions of this Agreement to re-establish the initial contractual equilibrium while protecting the interests of all the Parties.

Paragraph 18.4 – PROCEDURE – REQUEST FOR MODIFICATION AND CONSEQUENCES

18.4.1. The Party affected by event(s) under regulatory decisions or hardship, including for the event under Paragraph 12.9.4 shall send a request for modification to the other Parties mentioning:

- (a) the provisions of the Agreement that are subject to modification;
- (b) the reason why such modification is necessary (including the demonstration that the conditions are fulfilled); and

(c) a proposal of modification of the concerned provisions.

18.4.2. The request for modification shall contain a meeting request. At the latest ten (10) Business Days after receipt of the request for modification, the Parties shall consult each other to find an agreement on the required modifications. The Parties shall negotiate any modification taking into account the principles of cooperation as defined in Article 4 and Article 18 of this Agreement.

18.4.3. Negotiations shall be deemed to have failed in case:

(a) the Steering Committee decides it; or

(b) the Parties fail to reach an agreement within six (6) months following the receipt of the request for modification.

In such a case, the dispute resolution principles under Article 22 will apply.

Article 19 - ENTRY INTO FORCE AND TERMINATION

Paragraph 19.1 - ENTRY INTO FORCE

19.1.1. This Agreement shall enter into force as of the MC Launch Date provided it has been validly signed by each of the Parties. For the purpose of this Agreement, the Agreement is validly signed when and if the designated notary, Mr. X, receives the last signed signatory page, as scanned and sent by email to the notary, Mr. X, by the last Party signing this Agreement.

19.1.2. This Agreement is concluded for an indefinite period of time.

Paragraph 19.2 - TERMINATION

19.2.1. This Agreement may be terminated at any time by written agreement of all Parties, without any court intervention and without any compensation being due (to the exception of payment of remaining payment obligations under this Agreement). In case of termination, the Steering Committee shall decide on the implementation of the termination.

In doing so, it shall favour a progressive termination (if possible) and it shall duly inform the market participants and consult the competent regulatory authorities to the extent required by national law. To the extent required by national law, termination shall not take effect as long as all relevant regulatory authorisations have not been obtained.

19.2.2. This Agreement shall be terminated under a concurrent order of all relevant regulatory authorities. In case of termination, the Steering Committee shall decide on the implementation of the termination. In doing so, it shall favour a progressive termination (if possible) and it shall duly inform the market participants.

Paragraph 19.3 - SURVIVAL CLAUSE

19.3.1. The protection of confidentiality granted under Article 15 shall terminate five (5) years from the date of termination of this Agreement.

Article 20 - EXIT

Paragraph 20.1 - EVENTS AND CONDITIONS

20.1.1. One or more Party(ies) may exit from this Agreement under the following circumstances and upon the following conditions:

- (a) for no specific motive upon a twelve (12) months prior written notice by registered letter;
- (b) in the event of Force Majeure subject to Paragraph 17.1.7;
- (c) in the event of Hardship, in case of failure to reach an agreement with regard to the modification of the Agreement according to Paragraph 18.4.3 (b), subject to a three (3) months prior written notice by registered letter;
- (d) in the event of change due to regulatory reasons, in case of failure to reach an agreement with regard to the modification of the Agreement according to Paragraph 18.4.3 (b), subject to a three (3) months prior written notice by registered letter;
- (e) in the event of bankruptcy or any other insolvency proceeding (to the extent compatible with applicable law), dissolution or liquidation of such Party upon one (1) month prior written notice by registered letter; and
- (f) in the event of an order of competent regulatory, administrative or judicial authorities to end the participation of a Party to the Market Coupling upon a twelve (12) months prior written notice (or shorter if required by that authority).

Paragraph 20.2 - CONSEQUENCES IN TERMS OF RIGHTS AND OBLIGATIONS

20.2.1. During the notice period mentioned under Paragraph 20.1, the Parties shall remain entitled to all rights and bound by all obligations deriving from this Agreement and the Subsidiary Agreements.

20.2.2. In case of exit by a PX or a TSO, the TSO(s) or PX on the same Hub is also entitled to exit at the same Exit Date as the exiting PX or TSO, subject to a confirmation of such exit by the TSO(s) or PX on the same Hub to the other Parties by notice via registered letter.

20.2.3. The Exit Date shall be the date at which the exit of a Party enters into effect as a consequence of which such Party will no longer be bound by the Agreement, except the survival clauses under this Agreement.

20.2.4. The Parties shall mitigate the damages caused by the exit as much as possible.

20.2.5. The exiting Party shall, in accordance with the exit plan under Paragraph 20.3.2, assist the remaining Parties to enable continuity of the Market Coupling and to enable migration of the services it performs or the documentation/information it provides.

20.2.6. The exiting Party shall in no event object to the solutions implemented by the remaining Parties to ensure the continuity of the Market Coupling, including the granting of rights on any joint asset to any new party appointed to take over the services performed by the Exiting Party.

20.2.7. During the notice period, the exiting Party shall have the right to vote on all matters having financial impact on itself and/or all of other committees. For other matters, the exiting Party shall not be entitled to vote unless the Steering Committee decides otherwise or unless the vote has consequences over the exiting Party.

Paragraph 20.3 - PROCEDURE

20.3.1. As soon as the event giving rise to exit occurs, the exiting Party(ies) shall notify the other Parties of it by registered letter. In case of an order of a competent regulatory, administrative or judicial body, the notification shall be done immediately following receipt of such order.

20.3.2. The Steering Committee shall define an exit plan, including estimate of the costs and taking into account the consequences of the exit, including the following:

- (a) assessment of the changes needed for pursuing the Market Coupling without the exiting Party(ies);
- (b) continuity of the Market Coupling shall be ensured as reasonably as possible; and
- (c) exit shall be as smooth as possible, entailing as least as possible disruptions for the remaining Parties;
- (d) assessment of cost related to such Exit and recovery thereof;
- (e) the concrete date on which the Exit shall become effective, according to the abovementioned timescales.

Paragraph 20.4 - SURVIVAL CLAUSE

20.4.1. The confidentiality obligations under Article 15 shall bind the exiting Party for five (5) years after the Exit Date of that Party.

Article 21 - EXCLUSION

Paragraph 21.1 - GENERAL CONDITIONS

21.1.1. The Parties may request the exclusion of one (or more) Party(ies) from this Agreement in case:

- (a) of material breach by such Party(ies) of this Agreement or of any other agreement in the framework of this Agreement affecting the other Parties and subsequent failure for the breaching Party(ies) to remedy the failure within a reasonable period of time;

- (b) of behaviour of such Party(ies) significantly damaging the functioning of the Market Coupling or significantly prejudicing the interest of all Parties in connection with the Market Coupling and subsequent failure by the Defaulting Party(ies) to adapt its(their) behaviour within a reasonable period of time;
- (c) such Party has no longer the necessary authorisations/licenses for the performance of the Market Coupling: if the Party is a PX, loss of its PX designation(s); if the Party is a TSO, loss of its TSO certification, license or authorisation;
- (d) of bankruptcy or any other insolvency proceeding (to the extent compatible with applicable law), dissolution or liquidation of such Party.;
- (e) of Force Majeure subject to Paragraph 17.1.7.

For the purpose of this Agreement, a material breach by a Party of its commitment is a breach by it of any obligation under this Agreement, which is so substantial that it defeats the purpose of the Parties in concluding the Agreement, such as but not limited to, breach of the principles of cooperation, the repetitive and not remedied non-compliance with the agreed Operational Procedures within the agreed timeframes due to which Market Coupling cannot take place on a given day, breach of confidentiality obligations and violation of the Intellectual Property Rights of the Party(ies).

21.1.2. The Defaulting Party shall take part in the deliberations in front of the Steering Committee, and may bring defence without however taking part in the voting.

21.1.3. The Steering Committee shall decide whether or not to exclude the Defaulting Party. In case of exclusion, it shall define an exclusion plan, addressing the same issues as those set forth for the exit plan mentioned under Paragraph 20.3.2. Any dispute related to this Article shall be settled according to Paragraph 22.3.

Paragraph 21.2 - CONSEQUENCES IN TERMS OF RIGHTS AND OBLIGATIONS

21.2.1. The Parties shall remain bound by all rights and obligations deriving from this Agreement until the date of effective exclusion.

21.2.2. In case of exclusion of a PX or a TSO, the corresponding TSO/PX is entitled to exit at the same date as that of effective exclusion of the excluded PX/TSO, subject to a confirmation of such exit of the corresponding TSO/PX to the other Parties by notice via registered letter.

21.2.3. The Parties shall mitigate the damages caused by the exclusion as much as possible.

21.2.4. The Parties shall cooperate to find solutions ensuring the continuity of the Market Coupling and its future developments.

21.2.5. The excluded Party shall assist the remaining Parties to enable continuity of the Market Coupling and to enable migration of the services it performs or the documentation/information it provides in accordance with the exclusion plan under Paragraph 21.1.3.

21.2.6. The excluded Party shall in no event object to the solutions implemented by the remaining Parties to ensure the continuity of the Market Coupling.

21.2.7. During the notice period, the exiting Party shall have the right to vote on all matters having financial impact on itself and/or all matters related to daily operations on the agenda of the Steering Committee or of other committees. For other matters, the exiting Party shall not be entitled to vote unless the Steering Committee decides otherwise or unless the vote has consequences over the exiting Party.

Paragraph 21.3 - SURVIVAL CLAUSE

The confidentiality obligations under Article 15 shall bind the excluded Party for five (5) years after the Exit Date of that Party.

Article 22 – DISPUTE RESOLUTION

Paragraph 22.1 - GENERAL PRINCIPLES

22.1.1. Any dispute arising under, in connection to or in the framework of this Agreement shall be subject to this Article 22. Any dispute arising under, in connection to or in the framework of this Agreement and at the same time under, in connection to or in the framework of a Subsidiary Agreement and/or of other agreements shall be first handled between the Parties to the Subsidiary Agreement and/or to the other agreements.

22.1.2. Any dispute arising under, in connection to or in the framework of this Agreement and at the same time under, in connection to or in the framework of a Subsidiary Agreement and/or of other agreements shall promptly be notified by the involved Party(ies) to the Steering Committee.

22.1.3. Any dispute arising between one or more Parties shall be submitted by the most diligent Party to dispute settlement in accordance with this Article 22 by sending a request for dispute resolution to the other Parties mentioning:

- (a) the alleged event triggering the dispute resolution clause;
- (b) the Party(ies) responsible for this event;
- (c) if possible, the provisions of this Agreement or of any other agreement in the framework of this Agreement, which have allegedly been breached; and
- (d) if possible, a first estimate of the damage as the case may be.

Paragraph 22.2 - AMICABLE SETTLEMENT

22.2.1. The concerned Parties shall use their Best Efforts to settle the disputes arising under or in the framework of this Agreement by way of an amicable settlement within the Amicable Dispute Resolution Period during which:

- (a) The concerned Parties shall, during a period of two (2) months (or such other period as agreed upon in writing by the Parties) try to achieve an amicable settlement within the Steering Committee. The Steering Committee will declare and notify all Parties officially in writing of the beginning, the expected duration and the end of the Amicable Dispute Resolution Period. As soon as a Party requests amicable settlement, it shall not notify a request for exit during the Amicable Dispute Resolution Period;
- (b) In the event the Steering Committee fails to achieve an amicable settlement within the period mentioned under a), the dispute shall be escalated to the CEOs of each Party who will try to achieve an amicable settlement within a new period of two (2) months. The Steering Committee will declare and notify all Parties officially in writing of the beginning, the expected duration and the end of the Amicable Dispute Resolution Period. As soon as a Party requests amicable settlement, it shall not notify a request for exit during the Amicable Dispute Resolution Period.

22.2.2. During the Amicable Dispute Resolution Period, a concerned Party may at any time, request to revert to mediation by one external independent highly estimated mediator (certified, if available), with experience in the electricity sector and/or the ICT sector and who will abide by the European Code of Conduct for Mediators. Each concerned Party is entitled to propose a mediator fulfilling the mentioned conditions and the final mediator shall be chosen by unanimity of the concerned Parties. The Parties will pay the mediator fees and expenses in an equal proportion, unless otherwise agreed.

22.2.3. The Steering Committee or the CEOs may hear and/or appoint technical experts provided that they are bound by confidentiality obligations at least equivalent to those in this Agreement.

22.2.4. During the Amicable Dispute Resolution Period, the Steering Committee and the CEOs respectively shall:

- (a) assess the facts;
- (b) in case of damage:
 - (i) estimate the damage (and its nature and extent);
 - (ii) determine which Party(ies) suffered the damage;
 - (i) determine which Party(ies) is(are) liable for the damage;
 - (ii) determine the extent and modalities of indemnification;
- (c) Assess the interests of the Parties in light of the objectives of this Agreement;
- (d) Formulate a proposal for settlement or solution.

22.2.5. Any amicable settlement reached shall only be effective and binding for the Parties to it, provided it is laid down into a binding written settlement contract, signed by the Parties participating in the concerned amicable settlement.

22.2.6. During the Amicable Dispute Resolution Period, the Parties are entitled to apply injunctive relief in summary proceedings.

Paragraph 22.3 - ARBITRATION

22.3.1. In case no amicable settlement between the Parties is reached at the end of the Amicable Dispute Resolution Period, the dispute shall be settled by arbitration according to the rules of a party organizing arbitration at the request of the most diligent Party.

22.3.2. The place of arbitration shall be XYZ

22.3.3. The language of the arbitration proceedings shall be English.

22.3.4. The number of arbitrators shall be XYZ. At least one of the appointed arbitrators shall have a strong legal background. At least one of the appointed arbitrators shall have a strong technical background in the energy sector and/or in the Information and Communication Technologies sector. All appointed arbitrators shall preferably be familiar with the applicable sector specific legislations and regulations.

22.3.5. During arbitration proceedings, the Parties are entitled to apply injunctive relief in summary proceedings.

22.3.6. The Parties acknowledge that this Agreement, the Subsidiary Agreements and other agreements present such close links that, should separate dispute procedures be followed in their respects, there would be a high risk of contradiction between several courts/arbitral tribunals.

22.3.7. Without prejudice to the general principle of contractual relativity, in order to facilitate the comprehensive resolution of related disputes, the Parties agree to the following cumulative terms:

- (a) the Parties have included and shall maintain in the Subsidiary Agreements and in the other agreements arbitration provisions identical to and mirroring those included in this Agreement;
- (b) the Parties expressly agree that disputes within the scope of this Agreement between the same Parties may be consolidated in one single arbitration. The party organizing arbitration will be asked to take a decision within one (1) month of request for consolidation, and order consolidation of the disputes if such serves the interest of justice and efficiency;
- (c) in case a dispute arises out of this Agreement, the Parties agree that related disputes with other Parties to this Agreement or related disputes between the Parties (or of one of them) and one or several co-contractors, subcontractors, agents, etc. of the Parties (or of one of them) within the Subsidiary Agreements and/or the other agreements may be joined with the dispute arising out of this Agreement, and the Parties consent to the joinder of the parties to these agreements in the arbitration, it being understood that:
 - (i) such joinder shall be requested by the Party(ies) in a duly motivated request for joinder within the arbitration of such co-contractors, subcontractors, agents, etc., issued before

the signature or approval by the ICC court of arbitration of the terms of references of the arbitration initiated between the Parties;

- (ii) the party organizing arbitration will be asked to take a decision within a month of such request, and order joinder of the disputes if such serves the interest of justice and efficiency.

22.3.8. Symmetrically, if a dispute arises out of the Subsidiary Agreements and/or out of the other agreements, a Party to this Agreement who has been attracted in such arbitration may obtain that a related dispute with another Party to this Agreement be joined to the initial arbitration under the same conditions as expressed under Paragraph 22.3.7 (c).

22.3.9. If the party organizing arbitration so decides, all Parties to this Agreement consent, to the competency of the first appointed arbitral tribunal to handle the joined or consolidated proceedings, and to the jurisdiction of such existing arbitral tribunal on parties joined or consolidated to the proceedings.

22.3.10. The award of the arbitration shall be final and binding to the involved Parties participating in the concerned arbitration proceedings.

22.3.11. For the purpose of this Paragraph 22.3, disputes are deemed to be related where they are so closely connected that it is expedient to hear and determine them together to avoid the risk of irreconcilable judgments resulting from separate proceedings.

Article 23 - MISCELLANEOUS

Paragraph 23.1 - NOTICES

23.1.1. As a rule, notices required under this Agreement shall be served in writing (either by registered letter, courier, regular mail, fax or email) and in English to the persons indicated in Annex 2, unless expressly otherwise provided in this Agreement.

23.1.2. By derogations to the Paragraph 23.1.1, notices in case of urgent situation may be delivered by phone/mail, it being understood that such notice shall be re-confirmed in writing as soon as possible.

23.1.3. Service of notices shall be deemed effective:

- (a) by email: at the time/date when the email sent by the sender is indicated as delivered to the recipient or when the recipient acknowledges the receipt of it.
- (b) by Registered Letter or Courier: at the time/date when the mail sent by the sender is delivered as evidenced by the receipt.

23.1.4. In case notice is received on a Business Day after 5 PM CET or on a day which is not a Business Day, the notice is deemed given and effective on the first following Business Day.

Paragraph 23.2 - SEVERABILITY

23.2.1. Without prejudice to Paragraph 18.2, in case one or more provisions of this Agreement is/are declared invalid, illegal or unenforceable under any applicable law or public policy, the validity, legality and enforceability of the remaining provisions of this Agreement shall not be affected and they shall remain in full force and effect as long as the economic or legal substance of this Agreement is not affected.

23.2.2. The Parties shall as soon as possible negotiate a legally valid replacement provision with the same economic effect as the invalid/illegal/unenforceable provision.

Paragraph 23.3 - NON WAIVER

The failure or delay of any Party to exercise any right or remedy under this Agreement shall not be considered as a final waiver of it.

Paragraph 23.4 - LANGUAGE OF THE AGREEMENT

The language of this Agreement shall be [English]. Any exchange or notice in the framework of this Agreement shall be made in [English].

Paragraph 23.5 - GOVERNING LAW

This Agreement is governed by and construed in all its aspects (including, but not limited to, the conclusion, coming into force and proof of this Agreement) in accordance with the laws of ... , without regard to the conflict of law principles of it.

Paragraph 23.6 - ASSIGNMENT AND LEGAL SUCCESSION

23.6.1. Rights and obligations under this Agreement shall be transferable to a legal successor by way of universal legal succession without prior written consent of the Parties.

23.6.2. Assignment of rights and/or obligations other than by way of universal legal succession to another party shall be subject to the prior written consent of all Parties, which consent shall not be unreasonably withheld, conditioned or delayed.

23.6.3. This Agreement shall be binding upon and inure to the benefit of the Parties and their permitted assignees and/or their legal successors.

23.6.4. In the event a Change of Control of a Party occurs, this Party shall, as soon as reasonably possible (taking into account the confidential and sensitive nature of such transactions), notify in writing the other Parties of it.

Paragraph 23.7 - REMEDIES PROVIDED BY LAW

The rights and obligations under this Agreement are cumulative and not exclusive of any rights or remedies provided by law.

Paragraph 23.8 – INTERPRETATION

- 23.8.1.** No provision of this Agreement shall be interpreted adversely against a Party solely because that Party was responsible for drafting that particular provision.
- 23.8.2.** The headings of Articles, (sub)Paragraphs or Annexes are inserted for convenience only and do not affect their interpretation.
- 23.8.3.** Any reference to any rule, enactment, statutory provision, regulation or code or any subdivision or provision of it shall be construed at the particular time as a reference to the text then in force, as it may have been amended, modified, consolidated, re-enacted or replaced.
- 23.8.4.** All references to Articles or Annexes refer to the corresponding Articles or Annexes of this Agreement as amended, supplemented or modified from time to time, in accordance with Article 18 unless otherwise specified.

Paragraph 23.9 – PROOF OF THE AGREEMENT

The bundled original version of this Agreement, signed by the Parties, stamped and kept by the notary Mr. XYZ, or a certified copy of such bundled original, shall be used to prove the existence and the content of this Agreement.

LIST OF ANNEXES as referred to in the GFA

Annex 1	DEFINITIONS
Annex 2	PARTIES' CONTRACTUAL CONTACT DETAILS
Annex 3	SUBSIDIARY AND OTHER SPECIFIC CONTRACTS OVERVIEW LIST OF SUBSIDIARY AGREEMENTS
Annex 4	RULES OF INTERNAL ORDER OF THE STEERING COMMITTEE
Annex 5	MC REQUIREMENTS INCLUDING HLFA, ALGORITHM AND EXTERNAL INTERFACE REQUIREMENTS
Annex 6	LIST OF COMPONENTS
Annex 7	CHANGE CONTROL PROCEDURE
Annex 8	PROCEDURES: <ul style="list-style-type: none">• GLOSSARY• RECEPTION AND INTEGRATION OF ATC VALUES IN THE MC SYSTEM• TRANSFER OF CALCULATION RESULTS AND VALIDATIONS BETWEEN PX TRADING SYSTEMS, MC SYSTEM AND TSO COMMON SYSTEM• TRANSFER OF ATC VALUES FROM TSO COMMON SYSTEM TO MC SYSTEM• RECEPTION OF THE AGGREGATED ORDER FROM PX SYSTEMS TO MC SYSTEM• MC CALCULATION INCL. CHECK AND TRANSFER ROUNDED PRICES• NET POSITIONS VALIDATION BY TSO COMMON SYSTEM• CONNECTION TO THE GUI AND TRANSFER OF FINAL PRICES AND NET POSITIONS FROM MC SYSTEM• INCIDENT INVESTIGATION• TRANSFER OF DATA FROM MC SYSTEM TO BOTH CROSS PX CLEARING SYSTEMS AND TRANSFER OF CROSS BORDER TSO EXCHANGES (PROGRAMMING AUTHORIZATIONS) FROM TSO COMMON SYSTEM TO CROSS PX CLEARING SYSTEMS• HUB AND CROSS-BORDER NOMINATIONS PERFORMED BY THE CCPS• INCIDENT COMMITTEE PROCEDURE• COMMUNICATION TO MARKET PARTICIPANTS• LONG CLOCK CHANGE• MC SYSTEM SWITCH AND POSSIBLY RESET OF THE MC SYSTEM
Annex 9	TEMPLATE OPERATIONAL CALENDAR AND TEMPLATE CONTACT DETAILS
Annex 10	LIST OF OPERATIONAL DATA TO PUBLISH
Annex 11	LICENSE AGREEMENTS
Annex 12	SIMULATION FACILITY SERVICES
Annex 13	CHANGE CONTROL PROCEDURE APPLICATION
Annex 14	MANAGEMENT OF THE MC ROUNDING ENERGY

Supporting Document for the Draft General Framework Agreement organizing Day Ahead Market Coupling in the Western Balkan 6

Drafted under the WB6 Day-Ahead Market
Integration Program's Support Project
WB6.A1.R02

Purpose of the Draft General Framework Agreement

The Draft General Framework Agreement for Market Coupling in the Western Balkan 6 (GFA) was developed under the Work Stream 2 of the Support Project WB6.A1.R02, specifically as part of the sub-project 1 titled "Drafting the required framework for DA market coupling between EU and Non-EU jurisdictions".

The present Supporting Document provide a guide to how to use/read the GFA included its appendices, including explanations on the purpose, background, assumptions, possible signatories to the contracts, etc.. This "reading guide" for the GFA highlighting the relationship with other agreements and what parts are generic that could be reused more or less directly and where specific agreements (or articles) must be specifically developed per project.

The fundamental assumptions underlying the Draft GFA are that it will be used for regulating the implementation and operation of bi- or multilateral coupling projects in the WB6 region for both the coupling between Energy Community Contracting Parties and with EU Member States. It reflects the key principles and the contractual structure of the single Day-Ahead Operations Agreement used within European countries.

The working assumptions taken to draft the GFA are the following :

- The MC projects are between two control areas;
- The PXs are different in the two control areas;
- A TSO Common System is set up;



- The draft Agreement describes the most complex situation with other entities than PXs & TSOs realizing some of tasks that can be done by Power Exchanges (PXs) & TSOs.
- Balanced rights & obligations between PXs & TSOs.
- EU PXs owning the PRC's Euphemia algorithm service PXs of the respective WB6 implementation project, in the operation of the organised day-ahead markets.

Expected signatories of the GFA

The respective implementing entities of each coupling project are the expected signatories of the GFA. The draft Agreement describes the most complex situation with other entities than PXs & TSOs realizing some of tasks that can be done by PXs & TSOs.

The GFA is drafted in such a way that two possible ways of using the GFA template are possible:

- 1) as template for a general high-level agreement (macro regional) coordinating all WB6 sub-regional projects: the main body of the agreement can be used as a common "MRC"-agreement for the WB6 countries, because the roles and responsibilities of the parties will not be different within a multilateral context, neither the key architecture element of the DA market coupling. Few modifications to the template GFA should be needed to fit this global purpose: to add reference to the WB6 sub-regional projects, to develop the coordination role of the steering committee, to list some specific global costs. This approach would replicate the MRC model (Market Regional Coupling) by using a single Day-Ahead Operations Agreement (DAOA), which coordinates all the EU regional projects such as North-West Europe, IBWT, etc.). This approach is kept with the new agreement DAOA that shall replace the still existing MRC DAOA.
- 2) as template contract for each sub-regional/bilateral market coupling project: the template GFA is drafted for local MC projects between two control areas; the appendices should reflect the local implementation between the various sub-regional projects.

Structure of the Draft General Framework Agreement

The figure below provides an overview of the contractual framework needed for implementing market coupling in the WB6 and further approximating towards the Single European Coupling.

GFA & contractual framework



Figure 1: Overview of proposed and future contractual framework

LIST OF ANNEXES as referred to in the GFA

Annex 1 Definitions

Annex 2 Parties' contractual contact details

Annex 3 Subsidiary and other specific contracts overview ; List of subsidiary agreements

Annex 4 Rules of internal order ; RIO of the steering committee; RIO of the operations committee

Annex 5 Mc requirements including HLFA, algorithm and external interface requirements

Annex 6 List of components

Annex 7 Change control procedure

Annex 8 Procedures :

- Glossary
- Reception and integration of ATC values in the mc system
- Transfer of calculation results and validations between PX trading systems, MC system and TSO common system
- Transfer of ATC values from TSO common system to mc system
- Reception of the aggregated order from PX systems to mc system
- MC calculation incl. Check and transfer rounded prices
- Net positions validation by TSO common system
- Connection to the GUI and transfer of final prices and net positions from mc system
- Incident investigation
- Transfer of data from mc system to both cross PX clearing systems and transfer of cross border TSO exchanges (programming authorizations) from TSO common system to cross PX clearing systems
- Hub and cross-border nominations performed by the CCPS

- Incident committee procedure
- Communication to market participants
- Long clock change
- Mc system switch and possibly reset of the mc system

Annex 9 Template operational calendar and template contact details

Annex 10 List of operational data to publish

Annex 11 License agreements

Annex 12 Simulation facility services

Annex 13 Change control procedure application

Annex 14 Management of the mc rounding energy

Matters for local adaptation

The following list contains the provisions and elements of the draft GFA that have to be specified by each local implementation project independently and cannot be fully employed in the pre-drafted manner.

The future signatories and implementing entities can decide on how to implement these elements, either as separate agreements, annexes to the GFA, or detailed provisions in the text of the GFA (suggestions on this are given in brackets):

- Cost-sharing principles of implementation costs (separate agreement)
- Cost recovery rules: recovery mechanisms should be handled only in local legislations (agreement with local national regulatory authority)
- Local specificities that result in amendments to procedures / technical descriptions (as Annex to GFA; e.g. nomination process at each border, hosting entity, local governance issues...)
- Local subsidiaries agreements and possible subcontracting for some (separate agreements – see list)
- Responsibilities at local level (provisions in the text of the GFA)
- Tax, VAT, custom fees local rules (provisions in the text of the GFA)
- Possible differentiation from liability clause proposed in the draft GFA, to reflect differences in local subsidiaries agreements or in local law (provisions in the text of the GFA).

Description how to include the non-EU members into the Single European Coupling

Regarding the formal requirements that will be required to enable opening new bidding zones as part of the European market coupling, the only way for third party is to become a member of the single European coupling's MRC mechanism and consequently to sign the single Day-Ahead Operations Agreement (DAOA). This agreement describes a generic process of how to include the various parties (non-EU members) into the European coupling processes (MRC and potentially PCR).



Observer statute, Extension to or Adherence of a New Party in DAOA (Art 13)

- Possibility to acquire statute of Observer, as power exchange or TSO, as from the signature of adherence form until go-live date;
- Adherence procedure to DAOA, by written request and signature of adherence form;
- Extension to a new PX or TSO: the parties undertake to negotiate in good faith the terms and conditions of DAOA in order to operate fully-fledged operations, and not unreasonably delay the fully-fledged operations of bidding areas operated by this third party.

Principle of cooperation in DAOA (Art 4):

DAOA power exchanges (PXs) shall seek, when needed assisted by DAOA TSOs, together with the parties in other affected areas, to resolve any problems arising from such different requirements with the third parties TSO, PXs and NRAs in the affected areas.

Intellectual property rights in DAOA (Art 11):

- MRC procedures may be disclosed by a party to any third party European PXs or TSOs without prior written approval of the DAOA Parties, under the condition of signature of NDAs (Art 11.2)
- To develop a procedure regarding use of the joint developments for purpose of extending the Multiregional Price Coupling to other regions (Art 11.4)

Pass-through in DAOA (Art 17)

- Way to organize the PCR entrance fees to non-CACM NEMO/PXs: a portion of PCR entrance fees passed through to new TSOs after deduction of all costs incurred by the PCR PXs directly related to such extension. Details of the mechanism agreed by the affected members.

Main regulatory framework and required agreements for WB6 regional market coupling

The following table provides an overview of the regulatory required for market coupling and being in place in the EU countries, on the one hand, and on the other hand what this implies for WB implementation.

EU countries	WB6 implementation
Regulatory framework	
CACM regulation <ul style="list-style-type: none"> - Balance responsibility - Capacity allocation principles - Bidding zones - DAM/IDM main market principles - Roles and responsibilities - NEMO requirements 	National, but harmonized, secondary legislation covering the key elements in: <ul style="list-style-type: none"> - Market model, and/or - Market rules - PX/NEMO license/designation

- ...	
<p>REMIT regulation</p> <ul style="list-style-type: none"> - Definitions of market manipulation, market abuse, information disclosure requirements - Reporting requirements 	<p>Secondary legislation</p> <ul style="list-style-type: none"> - Market rules – define main principles <p>Market participant agreement</p> <ul style="list-style-type: none"> - Market Conduct Rules (pre-REMIT implementation in Europe) - (Ethical guidelines)
<p>Transparency regulation</p> <ul style="list-style-type: none"> - Reporting requirement for TSOs 	If required – same as for REMIT
NEMO License/designation	PX License or designation procedure based on the same principle and governed by the market rules/model (secondary legislation)
<p>Cross-border trading license</p> <ul style="list-style-type: none"> - In some countries there is a specific license for this; - Could be given directly to NEMO or be open for all through legislation 	Need to ensure that the secondary legislation opens for new roles in market coupling
(out of scope here) GLEB	Balancing market rules
Required agreements / elements	
MOU between Ministry, PX, TSO, regulator	<i>Signed</i>
NDA for parties adhering to GFA	Needed for getting access to information and agreements
General Framework Agreement	<ul style="list-style-type: none"> • Umbrella for multitude of local/regional operations agreement between TSO-PX • Template for local/regional operations agreement <p>This GFA can form a separate global agreement (before coupling into MRC) and can cover local arrangements that differ from MRC, between all parties of the coupled area.</p> <p><i>Developed in the scope of the project</i></p>
“All-Party Cooperation Agreement” defining the main principles for market coupling and laying the foundation for market coupling implementation	A more binding agreement following the MOU defining more of the key principles. It covers the phase project between all concerned parties (costs, governance, ...). Sub-cooperation agreement between same type of parties can also be signed if two TSO or tow PX are involved to manage the governance of the project and during operations phase (e.g. only TSO coop agreement).

<p>PCR (Price Coupling of Regions) Detailed procedures regulating detailed operation of the DA market coupling processes</p>	<ul style="list-style-type: none"> • WB6 countries could at least be observers in the PCR for getting access to all procedures; • (principle) All WB6 countries should be serviced by one of the founding PCR partners owning the EUPHEMIA algorithm; • When serviced by a European PX (PCR owner), implement similar operational procedures as part of the local market operator and main requirements in the market participant agreements (will be part of the “serviced PX” agreement in such event).
<p>European Single Day-Ahead Operational Agreement (DAOA)</p>	<p>The European MRC (Multi-Regional Coupling) agreement between PX/TSOs with detailed operational procedures in an annex this MRC contract covering whole EU +EE for the DA time-frame. This agreement is currently under revision to take into account the impacts from CACM.</p> <ul style="list-style-type: none"> • WB6 countries could at least be observers in the MRC getting access to all procedures and information; • The required part of these rules will most likely be part of the “serviced PX” agreement; • When coupled to an EU country, it will most likely have to implement all requirements from this.
<p>Agreement between Local PX – PX platform</p>	<p>Could/should be part of the “serviced PX” agreement</p>
<p>Local PX - Joint PX – PCR broker, algorithm and matching function, PCR Operator, PCR Coordinator</p>	<p>Should be part of a “serviced PX” agreement</p>
<p>CCP - Cross PX clearing agreement</p>	<p>Could be part of “serviced PX” agreement or could be a bespoke agreement between the coupled parties Links with CCP & possibly TSOs</p>
<p>Agreement PX-TSO information agreement</p>	<p>This is an agreement regulating the information flow between PX and TSO(s) – could be individual agreements that also cover other services (like reporting services). Main requirements come from MRC and Transparency/REMIT regulations, but could have other “bespoke” services and/or information flows. The concerned infos are listed in Appendix of MRC or of the FGA.</p>
<p>Joint TSO capacity calculation agreement</p>	<p>Common agreement between the coupled TSOs on calculation of the cross-border capacity, congestion revenue sharing, potentially cost-sharing for cross-border redispatch. Should clarify the path from NTC to flow-based capacity calculation and FBMC.</p>
<p>Auction Rules</p>	<p>Relevant for fall-back procedures for capacity allocation</p>
<p>CCP, PX and/or TSO shipping and nomination agreement</p>	<p>Agreement between the involved parties on nominations and money transactions between the involved parties</p>

Market participant agreement regulating the market participant rules	This can be considered as a bilateral contract between the PX and the market participant. It will include more details on their responsibilities, timing, etc. And is normally be part of the “serviced PX” package It should be developed based on best European practices. As for example, see auctions rules: participation agreement signed by participant to grant access to the auctions (to follow auctions rules - website JAO).
Balance agreement with TSO	This contract is out of scope of a market coupling set of contracts, but is an important pre-requisite. A balancing agreement between TSO and balancing Responsible Party (BRP) regulates their balance responsibility. The same applies for the balance responsibility that will be defined as part of the market rules – there need to be some sort of balancing mechanism in place.

Costs structure regarding the implementation of the market coupling projects

The general philosophy is to categorise common costs as PX costs or as TSO costs, as well as the allocation of common costs between TSOs and PXs. This is a general principle, which follows the logic that PXs and TSOs have different roles and responsibilities and thus bear different (common) costs. It is important to set out a common TSO and PX view on common cost sharing. Even if the Regulation (EU) 2015/1222 of 24 July 2015 establishing a guideline on capacity allocation and congestion management (“the CACM Regulation” or “CACM”) is not yet into force in the EnC legal framework, it is advisable to use the same approach on common cost sharing and for the discussions with concerned national regulatory authorities (NRAs).

Mechanism for cost recovery and, to some extent, the processes to control and audit costs, has to be dealt with at national level. Costs relating to the obligations imposed on TSOs (for tasks related to capacity calculation in a day-ahead market) shall be assessed by the competent regulatory authorities. Costs assessed as reasonable, efficient and proportionate shall be recovered in a timely manner through network tariffs or other appropriate mechanisms as determined by the competent regulatory authorities.

The common costs described below are defined as the costs resulting from coordinated activities of all PXs or TSOs for establishing, amending and operating day-ahead coupling, which should provide benefits to all parties involved in the cost sharing. The proportion of the common PXs costs towards the whole PXs/TSOs costs shall be taken into account by the concerned NRAs when allocating the common costs between TSOs and PXs following the application of a decided sharing key.

The common costs cover:

- common costs from coordinated activities between PXs and TSOs;
- common costs from coordinated activities between PXs only; and
- common costs from coordinated activities between TSOs only.

These costs, all together called common costs, are not part of national or regional PXs costs to the extent applicable to their role as central counterpart, and, where applicable, shipping agent costs.

The following table should serve as a project budget template in which all costs are listed and the way of their treatment (distinction between individual costs, common costs).

Table 2: Mapping of the common costs for establishing, amending and operating day-ahead market coupling

Type of costs	Explanation	Costs included	Applied sharing key
Joint PX- TSO common costs	<p>This category consists of joint common costs that are related to the Market coupling project and that are commonly shared amongst all parties. Those costs can be issued from third parties, PXs or TSOs</p> <p>They cover the Common Development Costs (administrative costs associated with processes and contractual arrangements needed for delivery of the price coupling algorithm and day-ahead coupling) and the Common Operational Costs (administrative costs associated with operation of the price coupling algorithm and day-ahead coupling)</p>	<ul style="list-style-type: none"> • Project project management office costs • Task Forces costs • Secretariat of the committees/SC • Costs for meeting arrangement • hours spent by the workgroups' conveners • costs that have been considered as "re-invoiceable" by the parties at the Steering Committee • Procedures - Updates • Operational Report - Changes 	<ul style="list-style-type: none"> • Equal share TSOs & PXs (only in operations, without observers) • PX share recovered via local mechanisms

<p>Joint PX common costs, linked to the PX-only part of the project</p>	<p>This category consists of PXs common costs that are related to their own PXs' project and that are commonly shared amongst the PXs. It covers development costs (costs associated with development of IT tools, processes and contractual arrangements needed for delivery of the algorithms and day-ahead coupling), amendment maintenance (costs – costs associated with maintenance of the price coupling algorithm and day-ahead coupling) and Operational costs (costs associated with operation of the price coupling algorithm and day-ahead coupling, and all PX administration of the operation)</p>	<ul style="list-style-type: none"> • “Doing cost” PX Project (PXs' project PMO costs) • 3rd party cost • draft documents • Service provider's costs • Development of Day-Ahead coupling systems (algorithm + others) • Operation of Day-Ahead coupling systems 	<ul style="list-style-type: none"> • Applied sharing key dealt with in PCR. • PX share recovered via local mechanisms
<p>PX individual in support of common costs</p>	<p>This category consists of the PXs local costs that are related to the market coupling project and that are individually borne by each PX</p>	<ul style="list-style-type: none"> • hours spent by the PXs to participate to a market coupling project workgroup, • Review of documents by each PX, • hours spent to internally work on an identified matter for the market coupling project, • Travels 	<ul style="list-style-type: none"> • PX costs recovered via local mechanism

Joint TSO Costs	<p>Costs for the TSO-only side of the market coupling project which are shared between the TSOs of the project and are not part of the budget for which national regulatory authorities granted cost comfort for.</p>	<ul style="list-style-type: none"> • Project management • legal support costs • PMO Activity - Operational Phase, • Travels 	<ul style="list-style-type: none"> • Equal share between TSOs (only in operational phase, without observes)
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Principles for clear cut between common costs and individual in support of common costs are as follows:

Cost of activity performed externally or internally by single party **shall be treated as common party costs** only if following requirements are fulfilled (It is not foreseen that such costs shall be included in joint PXs and TSOs projects):

- The activity is for common benefit of all parties
- The scope of such activity (including target date of completion) is defined and the cost of such activity is estimated and agreed ex-ante (budgeted) by all parties
- The progress of such activity is regularly monitored by all parties
- Internal resources will be recorded through timesheets and valued at the agreed standard rate as determined by all parties
- External resources will be recorded through detailed timesheets and valued at the contractually agreed tariff.
- When the activity is produced, the quality with which such activity has been performed and the amount of costs incurred with respect to the budget shall be assessed by all parties μ

A particular category of national costs is “**individual in support of common**” costs. These are activities performed in support of the common benefit by a single party – i.e. incurred directly for the development, maintenance or operation of the market coupling function - but not qualifying as common costs under joint control.



Annexes

General Framework Agreement organizing the Day Ahead Market Coupling between and

December 2018

LIST OF ANNEXES AS REFERRED TO IN THE GENERAL FRAMEWORK AGREEMENT

- Annex 1** DEFINITIONS
- Annex 2** PARTIES' CONTRACTUAL CONTACT DETAILS
- Annex 3** SUBSIDIARY AND OTHER SPECIFIC CONTRACTS OVERVIEW
LIST OF SUBSIDIARY AGREEMENTS
- Annex 4** RULES OF INTERNAL ORDER
RIO OF THE STEERING COMMITTEE
RIO OF THE OPERATIONS COMMITTEE
- Annex 5** MC REQUIREMENTS including HLFA, Algorithm and external interface requirements
- Annex 6** LIST OF COMPONENTS
- Annex 7** CHANGE CONTROL PROCEDURE
- Annex 8** PROCEDURES:
 - GLOSSARY
 - RECEPTION AND INTEGRATION OF ATC VALUES IN THE MC SYSTEM
 - TRANSFER OF CALCULATION RESULTS AND VALIDATIONS BETWEEN PX TRADING SYSTEMS, MC SYSTEM AND TSO COMMON SYSTEM
 - TRANSFER OF ATC VALUES FROM TSO COMMON SYSTEM TO MC SYSTEM
 - RECEPTION OF THE AGGREGATED ORDER FROM PX SYSTEMS TO MC SYSTEM
 - MC CALCULATION incl. CHECK AND TRANSFER ROUNDED PRICES
 - NET POSITIONS VALIDATION BY TSO COMMON SYSTEM
 - CONNECTION TO THE GUI and TRANSFER OF FINAL PRICES AND NET POSITIONS FROM MC SYSTEM
 - INCIDENT INVESTIGATION
 - TRANSFER OF DATA FROM MC SYSTEM TO BOTH CROSS PX CLEARING SYSTEMS and TRANSFER OF CROSS BORDER TSO EXCHANGES (PROGRAMMING AUTHORIZATIONS) FROM TSO COMMON SYSTEM TO CROSS PX CLEARING SYSTEMS
 - HUB AND CROSS-BORDER NOMINATIONS PERFORMED BY THE CCPS
 - INCIDENT COMMITTEE PROCEDURE
 - COMMUNICATION TO MARKET PARTICIPANTS
 - LONG CLOCK CHANGE
 - MC SYSTEM SWITCH AND POSSIBLY RESET OF THE MC SYSTEM
- Annex 9** TEMPLATE OPERATIONAL CALENDAR AND TEMPLATE CONTACT DETAILS
- Annex 10** LIST OF OPERATIONAL DATA TO PUBLISH
- Annex 11** LICENSE AGREEMENTS
- Annex 12** SIMULATION FACILITY SERVICES
- Annex 13** CHANGE CONTROL PROCEDURE APPLICATION
- Annex 14** MANAGEMENT OF THE MC ROUNDING ENERGY

Annex 1. Definitions

Agreement:	this General Framework Agreement, including its Annexes;
Algorithm:	refers to Algorithm described in Annex 5;
Algorithm Requirements:	the requirements regarding Algorithm as agreed upon by the Parties and set forth in <u>Annex 5</u> ;
Allocation or Allocate:	the process by which a Physical Transmission Right is attributed as a result of the Market Coupling to the concerned CCP via the PX;
Amicable Dispute Resolution Period:	the period for amicable settlement, in accordance with <u>Article 22</u> of this Agreement, of disputes arising under or in connexion with this Agreement, which shall not exceed four (4) months (unless decided otherwise by the Parties) as under <u>Article 22</u> of this Agreement;
Annex:	any document attached to this Agreement, which forms an integral part of this Agreement;
Article:	any article of this Agreement, including its Paragraphs and sub-Paragraphs;
ATC Based Capacity Calculation Method:	coordinated method applied by the TSOs in order to define the ATC, compatible with security standards applicable in all Hubs, which will be allocated through the Market Coupling;
ATC Based Launch Date:	the date of launch of the ATC Based Market Coupling as decided by the Steering Committee ;
ATC Based Master Test Plan:	the document jointly approved by all the Parties, aiming at giving a clear and complete view on the test approach, the schedule, the activities, the deliverables and the launch criteria related to these deliverables to assure readiness of all Parties to launch ATC Based Market Coupling, to be delivered in the testing of the ATC Based Market Coupling before the ATC Based Launch Date;
ATC Based Market Coupling :	the Market Coupling using coordinated ATC values;
Available Transfer Capacity (“ATC”):	part of the NTC made available by the TSOs to the Market Coupling;
Available Interconnection Capacity:	means ATC for ATC Based Market Coupling;
Back Up Circumstances:	operational circumstances in which failure on a particular process step occurs, requiring the application of a Backup Procedure to recover such failure for this particular process step;
Back up Procedure (“BUP”):	the procedure attached in <u>Annex 8</u> describing the actions to be taken during the Market Coupling operations by the Parties or the entity(ies) designated by them in the event Backup Circumstances occur;
Best Efforts:	the obligation for a Party to take, in the performance of its commitments under this Agreement, all reasonable actions and measures and more generally doing everything that may reasonably be expected from a normal, diligent and reasonable professional placed in the same circumstances;
Business Day:	means a day on which banks located in all the respective places of the registered office of the Parties concerned are open for normal banking business;

Central Counter Party (“CCP”):	this is an entity (not a subcontractor) designated by each PX;
CEO:	chief executive officer, empowered to represent a Party;
Change Control Administrator:	The person responsible for the central management and administration of changes under the Change Control Procedure, as designated under the terms and conditions of Section 1.2 of the Change Control Procedure;
Change Control Procedure:	the procedure set forth in <u>Annex 7</u> of this Agreement;
Change of Control:	Direct or indirect merger and/or acquisition by a third party of: <ul style="list-style-type: none"> a) shareholding and/or holding of voting rights; b) holding of any other right permitting to direct or control the operations; or c) any decision making bodies that manage the business of a Party;
Components:	the whole set of different information and communication technology systems (software and hardware), interfaces between these systems set forth in <u>Annex 6</u> of this Agreement, which are necessary for the functioning of the Market Coupling;
Component List:	the list of Components set forth in <u>Annex 6</u> of the Agreement;
Confidential Information:	shall have the meaning set forth in <u>Paragraph 15.1.1</u> of this Agreement;
Congestion	means a situation where the sum of day-ahead implicit demand for capacity exceeds the daily Available Interconnection Capacity;
Congestion Revenue:	the revenue arising from the implicit auctioning of the Available Interconnection Capacity in case of Congestion;
XXX Executable Software:	the industrialised software, application or computer program in executable form, used by the Market Coupling System in which the algorithm is implemented;
XXX Executable Software Documentation:	the supporting documentation, and information necessary to use the XXX Executable Software as appended to the Minimal and Extended License Agreement;
Critical Deadline:	the latest possible time for the transmission of an information according to the operational procedures as set forth in <u>Annex 8</u> ;
Cross Border Exchange:	the cross border electricity flow resulting specifically from the Market Coupling;
Cross Border Nomination:	In the event of Cross Border Exchange, the exchange declaration to be sent by the designated CCP to one of the two TSOs concerned by such Cross Border Exchange, indicating the power, expressed in MW, which it wishes to exchange at a specific border in a given direction for each hourly period of a given day. A Cross Border Nomination shall correspond to the received Programming Authorisation;
Cross PX Clearing:	The physical balancing and financial clearing of the Cross Border Exchanges resulting from the Market Coupling, as defined in Paragraph 6.2.6 of this Agreement;

Cross PX Clearing Systems:	Module developed by the PXs to receive and to treat the PA which will be transferred to the CCP System after their treatment in the system;
Market Coupling:	the coordinated mechanism implemented by the Parties in the Region in accordance with the terms and conditions of this Agreement, whereby the supply and demand curves of different PXs are matched by the PXs taking into account the relevant network constraints as provided by the TSOs;
Market Coupling Project:	the project during which the design , the development and the implementation of the Market Coupling took place;
TSO Common System:	the system to be made available jointly by TSOs consisting in: <ul style="list-style-type: none"> • Pre-Coupling Function: calculating Available Interconnection Capacity on the basis of grid forecasts delivered by each TSO; • Post-Coupling Functions: <ul style="list-style-type: none"> • net position validation: verifying, on the one hand, that the PX Net Positions calculated by the MC System are compatible with Available Interconnection Capacity as determined by the Pre-Coupling Function; and • bilateral exchange calculation: calculating, on the other hand, cross border data flows resulting from the previously determined net positions. • Communication Layer: the software and protocols allowing the TSO Common System to interact with other systems.
Defaulting Party:	a Party not fulfilling one or more of its obligations under this Agreement;
Defendant Party:	shall have the meaning as set forth in <u>Paragraph 16.5</u> of this Agreement;
Design Phase:	the phase of the Market Coupling Project during which the Parties have established the high level architecture and business process of Market Coupling, have analysed and decided upon the different options for market coupling algorithms, possible organisation and governance structures and during which the TSOs have analysed the possible ATC network representations;
European Code of Conduct for Mediators:	the code of conduct for mediators, as developed with the assistance of the European Commission, available on the website of the European Commission;
Exit Date:	date at which the exit of a Party under <u>Article 20</u> enters into effect;
Extended License Agreement:	is the license agreement as attached in <u>Annex 12, Chapter 12.2</u> ;
Fall Back Circumstances:	operational circumstances in which an incident occurs that cannot be remedied through the Back Up Procedure and in which the Parties shall revert to the application of the Fall Back Procedure;
Fall Back Procedures:	the procedures in <u>Annex 8</u> describing the actions to be taken during the Market Coupling operations by the Parties or the entity(ies) designated by them in the event Fall Back Circumstances occur;
Force Majeure:	any event or situation that is (i) not reasonably foreseeable, (ii) beyond the reasonable control of the affected Party, (iii) not due to the fault or negligence of the affected Party, (iv) which cannot reasonably be avoided or overcome, and (v) which makes it impossible for this Party to fulfil, temporarily or definitively, its obligations under this Agreement;
Full Decoupling:	the situation where no Market Coupling Results can be produced, leading to Fall Back Circumstances;

Framework Agreement:	means Agreement;
Hardship:	any extraordinary event or any extraordinary change of circumstances that is (i) independent of the will of the affected Party(ies); (ii) beyond the control of the affected Party(ies); (iii) unforeseeable at the time of conclusion of this Agreement, and (iv) which fundamentally and negatively affects for a substantial period of time, for the concerned Party(ies), the initial contractual equilibrium of this Agreement;
High Level Functional Architecture for Normal Mode and Fall Back Mode :	the high level description of systems and interfaces necessary for operating the Market Coupling for Normal Circumstances and Fall Back Circumstances set forth in <u>Annex 5</u> (Chapter 5.1 and 5.2) of this Agreement;
Hub:	a geographical area for which a single clearing price is calculated for each hour of the day;
ICC:	International Chamber of Commerce;
ICT:	information and communication technologies;
Implementation Phase:	the phase of the Market Coupling Project during which the Parties have developed all Components necessary for the implementation and for the functioning of Market Coupling;
Individual Component:	Component belonging to one of the Parties individually as described in <u>Paragraph 5.5.1</u> and <u>Paragraph 5.6.1</u> respectively;
Intellectual Property Rights (“IPR”):	means all existing and future, registered or unregistered, intellectual, industrialised, commercial and all other property and similar or related rights, title and interest including applications for the same, in the Region and/or elsewhere in the world, including but not limited to copyrights, neighbouring rights, portrait rights, moral rights, sui generis database rights, models and design rights and all other possible rights in the field of literature, arts and science, rights to patents or patent applications, topography rights, rights to know-how or trade secrets, and all other rights on intellectual creations in the field of technology, trademarks, trade names rights to statutory and commercial denominations, domain names and all other possible rights to signs used in business to distinguish one good or service from another in trade;
Interface:	content and format of the information to be transferred;
IT:	Information technology;
Joint Parties’ Developments:	shall have the meaning set forth under <u>Paragraph 10.1.1.1</u> of this Agreement;
Joint PX Component:	shall have the meaning set forth in <u>Paragraph 5.3.1</u> of this Agreement;
Joint TSO Component:	shall have the meaning set forth in <u>Paragraph 5.4.1</u> of this Agreement;
Licensed Material:	the material licensed to the TSOs as the case may be and as defined in article 1.1 of the standard form for the Minimal License Agreement, respectively article 1.1 of the standard form for the Extended License Agreement as attached as Annex 12
Market Coupling Requirement; or MC Requirement:	the requirements with which Market Coupling must at all times comply, as set forth in the documents enumerated under <u>Paragraph 5.2.1.</u> of this Agreement;

Market Coupling Results:	the results, in the framework of the Market Coupling, calculated by the PXs consisting of, for each PX: <ul style="list-style-type: none"> - preliminary price, preliminary PX Net Position per hour per Hub; - winning block sets per Hub; - shadow price per hour per Hub; - rounded price, rounded net position per hour per Hub; - final price, final PX Net Position per hour per Hub; as described in the High Level Functional Architecture for Normal Mode (Chapter 5.1 of Annex 5);
Market Coupling System; or MC System:	the system (software and hardware) in which the XXX Executable Software is embedded and that interfaces with other IT systems involved in Market Coupling, in accordance with the requirements and specifications set forth in <u>Annex 5</u> of this Agreement;
Market Rules:	the terms and conditions regarding the organisation, the functioning and the access to a PX, governing the relationship between a PX and its members;
Minimal License:	the license described in the Minimal License Agreement;
Extended License:	the license described in the Extended License Agreement;
Minimal License Agreement:	is the license agreement as attached in <u>Annex 12</u> ;
MoU:	the memorandum of understanding signed by the Parties on the [Date] ;
MPLS:	multiprotocol label switching;
MPLS Cloud:	a mechanism in high performance telecommunications networks which directs and carries data from one network node to the next, thereby making it easy to create virtual links between distant nodes. It can encapsulate packets of various network protocols;
Normal Circumstances:	normal Market Coupling operational circumstances, during which no incident occurs;
Normal Procedure ("NOR"):	the procedure attached in Annex 8 describing the actions to be taken during the Market Coupling operations by the Parties or the entity(ies) designated by them in order to operate the Market Coupling under Normal Circumstances;
Net transfer capacity ("NTC")	the maximum cross border exchanges between Hubs compatible with security standards applicable in both Hubs and taking into account the technical uncertainties on future network conditions;
Operational Calendar:	the calendar of operations determining responsibilities in time and submitted by the Parties within the deadlines and under the conditions as mentioned in Paragraph 6.1.4. of this Agreement;
Operational Procedures:	the procedures set forth in Article 6 of this Agreement and further developed in Annex 8 of this Agreement;
Paragraph:	any paragraph of this Agreement, including its sub-paragraphs;
Parties:	all the signatories of this Agreement, referred to collectively;
Party:	any of the signatories of this Agreement, referred to individually;
Physical Link:	hardware through which information passes in the event of data transmission;

Physical Transmission Right (“PTR”):	the right granted to a market participant under ATC Based Market Coupling to use a specified quantity of the ATC in the export direction, expressed in MW, for each hourly period of a given day. In the framework of the ATC Based CWE Market Coupling, the PTR is granted to the CCP through the local PX if applicable;
Price Coupling:	market coupling where the market clearing prices and PX Net Positions are determined in a single step;
Programming Authorisations (“PA”):	the total, for each TSO border, for each hourly period of a given day, of the Physical Transmission Rights granted to the CCP via the PX where applicable. The Programming Authorisation specifies clearly for each Physical Transmission Right the PX and/or the CCP concerned;
PX Net Position:	the rounded net position (i.e. total import or export) per hour per Hub for each of the PXs;
Roll Back Circumstances:	operational circumstance in which it is necessary to the revert to the systems and operational processes as described in Chapter 8.17 of Annex 8 ;
Rounding Energy:	shall have the meaning as provided in section 2 of Annex 15 ;
Rules of Internal Order (“RIO”):	the rules of internal order for the respective committees created under this Agreement as described in Annex 4 and in Chapter 8.15 (section 1.3) of Annex 8 ;
Shadow Auction System:	system that enables to organise explicit auctions for day ahead Capacity Allocation after Full Decoupling pursuant to the Fall Back Procedure set forth in Annex 8 ;
Simulation Facility:	a web based application embedding XXX Executable Software, which allows simulating market coupling sessions based on a mix of historical and artificial input data and also on the historical Market Coupling Results, and which allows reporting on the output of these simulations;
Simulation Facility Services:	The services described in Annex 13 of this Agreement;
Specific Agreements:	the agreements listed under Annex 3.2 of this Agreement;
Steering Committee (“SC”):	the committee referred to under Paragraph 11.1.1 of this Agreement;
Steering Committee Secretary (“SC Secretary”):	the secretary of the SC mentioned under Paragraph 11.1.3 of this Agreement and performing tasks as mentioned in the RIO of the SC;
Subsidiary Agreements:	the subsidiary agreements referred to under Paragraph 3.1 of this Agreement;

Annex 2. Contractual Contact Details

Firm	Address	Name of representative + Contact Details

Annex 3. LIST OF SUBSIDIARY AGREEMENTS

List showing related contracts that have been agreed on in the context of this Market Coupling Framework Agreement. List has to be finalized based on the Market Coupling design selected for each project.

Proposed form: Excel-file.

Contract Title	Parties involved		Subcontractors/Service providers	
	Party 1 (PX/TSO)	Party 1+n (PX/TSO)	Party 1	Party 1+n
All-Party Cooperation Agreement				
All-TSO Cooperation Agreement				
“serviced PX” agreement				
Agreement PX-TSO information agreement				
Joint TSO capacity calculation agreement				
Auction Rules				
CCP, PX and/or TSO shipping and nomination agreement				
Local agreement TSO-PX				
Hosting and support SLA – for common TSO system				
License agreement (limited or extended)				
Simulation Facility Services				
Clearing settlement cooperation agreement between PX and CCP				
.....				

Annex 4. RULES OF INTERNAL ORDER OF THE STEERING COMMITTEE

These Rules of Internal Order set forth the decision making process rules of the Steering Committee ("SC") under the Agreement. All capitalised terms not expressly defined herein shall be construed as defined in the Agreement.

1. Composition of the SC

1.1. Voting members

The official voting representative of each Party in the SC is designated in writing. The list of such voting representatives including their contact details are held by the Secretary.

A Party may change its voting representative in the SC provided such change is notified to the Secretary at least three (3) Business Days before the SC meeting that the new voting representative attends.

Each Party is, with respect to each meeting of the SC, duly represented either:

- by the voting representative (as designated by it in the conditions described above); or
- if the voting representative cannot attend a meeting of the SC, by any other person duly mandated and empowered to take decisions binding upon its company on all items of the agenda.

If a Party is unable to attend a SC meeting, such absent Party mandates the SC representative of another Party. In such case the absent Party:

- informs the Secretary at least three (3) Business Days before the SC meeting it cannot attend; and
- gives the name of the person representing the Party on its behalf.

In case the absent Party does not wish to mandate, it is deemed to accept any decision of the SC on the topics of the agenda except in the cases under [point 3.2](#).

One voting representative may represent more than one Party provided it is duly mandated to do so.

1.2. Non-voting members

Each Party is entitled to designate non-voting representatives who are entitled to participate to the meetings and deliberations of the SC, but are not entitled to vote.

In case a Party wishes to designate a non-voting representative for a particular SC meeting, this Party notifies to the Secretary the name of the non-voting representative and the date of the SC meeting he/she attends at least three (3) Business Days before the SC meeting that the non-voting representative attends.

1.3. Chairman

TSOs elect their co-chairman among the voting representatives of the TSOs.

PXs elect their co-chairman among the voting representatives of the PXs.

Each chairman may, in exceptional circumstances which prevent him/her to exercise his/her functions at a meeting of the SC, delegate such task to the other Co-chairman or to a voting representative of the other Parties.

1.4. Secretary

The Secretary is ensured by one Party on rotating basis. The Secretary is yearly chosen by the SC upon proposal of the Parties.

The Secretary has no voting rights. For the avoidance of doubt, the Secretary cannot be mandated as voting representative of one of the Parties even in exceptional circumstances when the official voting representative cannot attend a SC meeting.

The Secretary assists the SC, amongst others by:

- Drafting the agenda, preparing session files of meetings and notices and sending them, along with the Co-chairmen;
- Preparing the attendance list of the meetings;
- Verifying before each SC meeting that the voting representatives attending the SC meetings have been either listed on the list of official representatives or announced in case of replacement. In the event of representation by another Party, the Secretary verifies whether a valid power of attorney has been given by the Party not attending.
- Ensuring the drafting and circulation of the minutes of the meetings and/or of decisions.

The costs of the Secretary are borne by the Party ensuring the Secretary for the corresponding year.

2. SC meetings

The SC meets at least quarterly except if the Co-chairmen consider such meeting is not necessary given the absence of matters to be discussed.

Any Party may at any time request the Secretary to convene a SC by sending a motivated written request to this effect to the Secretary with indication of the matters to be put on the agenda.

The notices for a meeting of the SC are notified by the Secretary in writing to the members of the SC at least ten (10) Business Days before such SC. The notices contain the date, place and time as well as the agenda of the meeting. Any supporting documentation to the points on the agenda is sent at least five (5) Business Days before the meeting.

A Party may propose to add issues on the agenda of a meeting of the SC, and these proposals are taken into account provided they have been received by the Secretary at the latest 5 (five) Business Days before such SC.

The SC may hold ad hoc SC meetings for urgent matters at any time, without prior notice period.

A member of the SC who attends the meeting or is represented to it is considered as having received due notice.

The duty of the practical organisation of the meetings of the SC is borne by each Party on a rotating basis. The Secretary keeps track of the rotation and indicates within reasonable period of time prior to the SC which Party is responsible for organising the meeting. The meeting costs (hosting, organisation, etc.) are borne by the Party organising the meeting, it being understood that the travel costs of each Party's representative is borne by the Party(ies) he/she is representing.

The SC may meet either physically or by distant meeting devices (such as e.g. conference call, video call, written procedure, etc.).

3. Decision-making rules within the SC

3.1. Unexpected items

The SC may only decide on the topics of the agenda circulated by the Secretary in accordance with these RIO, except in the event of Urgent Decisions, in which case the procedure and terms for Urgent Decisions set forth in point 4.2 of these RIO applies.

Unexpected Item(s) may be subject to decision at the meeting during which the Unexpected Item(s) arose, provided that all representatives are duly mandated. A representative indicates when he/she is not duly mandated in such case.

Decisions on Unexpected Item(s) are taken, in principle, at the next available SC, by which time the members of the SC have sought the necessary power and authority to decide on the Unexpected Item(s).

However in case Urgent Decisions are concerned, decisions on Unexpected Item(s) are taken at an ad-hoc conference call which takes place ten (10) Business Days at the latest following the meeting during which the Unexpected Item(s) arose and, for clarity's sake, is subject to the general rules on quorum and decision making. By the time of this ad-hoc conference call, the voting members of the SC have sought the necessary power and authority to decide on the Unexpected Item(s).

3.2. Exceptional circumstances

By derogation to point 1.1 of these RIO, in case a Party, due to exceptional circumstances, should not be present or represented at a meeting of the SC, then decision(s) can however be taken by the other SC members attending, subject to the possibility, for the Party who did not attend, to challenge such decision(s) in writing within five (5) Business Days two (2) in case Urgent Decisions are concerned) after sending of the minutes in accordance with these RIO. Absent such written challenging, the decision(s) is deemed final and binding, pursuant, for the remainder, to the provisions set forth below under point 4 of these RIO.

In case a Party challenges such decision(s), the challenged decision(s) is put at the agenda of the next available SC meeting. The Party who challenged the decision(s) attends this next SC meeting. In its absence, the decision(s) is deemed final and binding as of the close of the meeting.

In case a Party challenges a(n) Urgent Decision(s), the challenged Urgent Decision(s) is put at the agenda of an ad hoc conference call, which takes place (ten) 10 Business Days at the latest following the challenges of the Urgent Decision(s). The Party who challenged the Urgent Decision(s) attends this conference call. In its absence, the Urgent Decision(s) are deemed final and binding, pursuant, for the remainder, to the procedure set forth under point 4.2 of these RIO.

4. Recording of SC decisions

4.1. Normal procedure

The decisions of the SC are recorded by the Secretary in minutes.

The draft minutes are circulated to the members of the SC by the Secretary, within a maximum of three (3) Business Days of the meeting concerned.

In case the next SC meeting takes place within one (1) month after the previous meeting, members of the SC may comment on the minutes within ten (10) Business Days after sending of the minutes in accordance with these RIO (it being understood for the avoidance of any doubt that, except in the strict circumstances described in 3.1 and 3.2 above, the decisions themselves cannot be challenged).

The comments on the minutes received in the abovementioned deadlines are discussed at the next available meeting of the SC, until a final agreement is reached on the text of the minutes.

In case the next SC meeting does not take place within one (1) month after the previous meeting, the approval of the minutes is organised by the Co-chairmen, assisted by the Secretary, within one (1) month of the concerned meeting.

In absence of comments, minutes are deemed approved within one (1) month.

The decision(s) as recorded in these finalised minutes are binding, as approved, as of close of the meeting. A copy of these finalised minutes is circulated to the members of the SC by its Secretary, within a maximum of two (2) Business Days of the meeting concerned.

The Parties agree not to organise a common register of minutes and each Party ensures its own record keeping of the copies of the minutes of the SC it receives from the Secretary.

4.2. Urgent decisions

Urgent Decision(s) of the SC are recorded by the Secretary in a separate written decision document, prepared, shown and discussed during the SC meeting. Except in the strict circumstances described in 3.1 and 3.2 above, such separate decision document are immediately binding, as approved, as of close of the meeting.

A copy of this separate decision document is circulated to the members of the SC by the Secretary, on the very same date of the meeting. This separate decision document is also reflected in the minutes of the SC meeting during which it was adopted. Such minutes are elaborated in accordance with the provisions above, it being understood, for the avoidance of any doubt, that neither the Urgent Decision(s) nor the separate decision document can be subject to any further commenting.

5. Possible Subcommittees of the SC

The SC may organise for committees or working groups provided the SC demonstrates such committees or working groups are necessary to assist the SC. In such event, the SC determines the composition and the modalities of the functioning of such committee or working group

- **Operations Committee**
- **Incident Committee**
- **Development Group**

The Development Group performs studies and analyses upon request of the SC.

In particular, the Development Group performs the following tasks:

- Analysis of change request related to algorithmic matters;
- Simulation and validation studies;
- Any other studies or analyses requested by the SC.

Annex 5. MC REQUIREMENTS INCLUDING HIGH-LEVEL FUNCTIONAL ARCHITECTURE, ALGORITHM AND EXTERNAL INTERFACE REQUIREMENTS

5.1. HIGH-LEVEL FUNCTIONAL ARCHITECTURE AND END-TO-END BUSINESS PROCESS

6. Introduction

The main purpose of this document is to describe the High-level Functional Architecture including the flows, the interconnection, and the interfaces that will be the basis for the procedures and for the IT design.

We define the Market Coupling (MC) as the set of MC system components and arrangements created or adapted with the explicit aim of establishing coupling of the day-ahead electricity markets covering the [country 1 ... country n] countries of the ... zone.

Among the many perspectives possible, the present document adopts one particular perspective on the MC: that of information flows. This perspective can be labelled the information perspective. At a high level of abstraction, the document tries to answer the questions below:

1. *Which automated system components* play a role in the MC?
2. *Which human agents* (the 'Agents') play a role in the MC?
3. *What information* is produced by any of the MC components and Agents in the MC (only information relevant to the MC is taken into consideration)?
4. *What information* is exchanged between any of the MC components and Agents in the MC (applying the same restriction as item 3)?
5. In *what sequence* is the information produced by and exchanged between the S MC components and the Agents?

Other perspectives on the solution include the following and can be found in the related documents.

- The legal and governance perspective (concerned with roles and responsibilities, ownership, decision making and legal entities) reflected in the Framework Agreement and on subsidiary agreements.
- The algorithmic perspective (concerned with the rules applied in the calculation of the market coupling result and other pieces of information) reflected in the MC requirements.
- The IT perspective (concerned with the design and development of the MC components and the interfaces between them) reflected in the IT systems and interface specifications.
- The operational perspective (concerned with the procedures followed to operate the Systems) reflected in the procedures.

The Main assumptions:

- Shipping Agent : This HLA is realised on the main assumption that the Cross-PX clearing will be done via the Clearing Houses;
- Fallback system (Shadow auction): A specific HLA including the Shadow Auction will be edited in a separate document.

The below shown architecture is drawn on the basis of the design assumption that the Cross-PX clearing process is happening through the clearing houses.

7. High-level functional architecture and business process

This chapter contains the high-level functional architecture and business process with the current design assumption. The architecture diagram is also available as a separate PowerPoint sheet for better legibility.

7.1. Architecture overview

The architecture overview shown below was jointly drafted. It is explained in the following sections of this chapter, which are devoted to:

- The system components shown,
- The Agents shown,
- The information produced and exchanged,
- The indicative sequence in which the information is produced and exchanged,
- Remaining questions regarding the information flows (protocol flows and other) and assumptions,
- A glossary, explaining the terms used in the diagram and the remaining text of this chapter.

(...)

7.2. Systems

The list of systems below reflects the current design assumption.

In the architecture diagram, the automated system components further called Market Coupling Components that are expected to play a role in the Market Coupling are indicated with rectangles. These systems may either be existing systems adapted to the Market Coupling or systems to be newly built.

The MC Components distinguished are logical or virtual systems. This means, they do not necessarily correspond to single software applications or to dedicated computer hardware. The latter entities belong to the IT perspective. In the information perspective, a System can be thought of as a set of information manipulation functions for which it is convenient to consider as a separate entity.

The following Systems are distinguished: XXX

-
-

Systems are interconnected via Interfaces. Each Interface serves one or more information flows. The different information flows are defined in 2.7 with an indicative sequence.

7.3. Hosting, Operations and Interfaces

The information about the hosting, the operations and Interfaces are in the document called: HLA Implementation details.

7.4. External Agents

The Agents are represented in the diagram as abstract human figures.

Just like the MC components are abstract systems, the Agents distinguished are logical or virtual agents. An Agent is a non-automated entity interacting with one or more Systems or other Agents in

the information perspective on the Solution. An Agent is distinguished according to the role he plays. Conversely, millions of human beings appear as a single agent ('The General Public').

The following Agents are distinguished.

- The 'Market Participant' Agent represents the PX members.
- The 'General Public' Agent represents the recipient of all published data due to transparency requirements.

7.5. Information produced and exchanged

The information produced and exchanged is represented in the diagram by arrows with a label. The small arrows point in the direction of the information flow. The circular arrows indicate information produced in processes internal to a System. The label indicates the contents of the piece of information transferred or produced. The sequence of production and transfer of information is shown in section 2.5 of this document. The numbering of the information flows doesn't always respect the sequence of the actions.

The real frequency, timing and sequences are being defined in the procedures

It should be stressed that only flows of information are shown in the diagram. Other flows, like electricity and money flows, are not taken into account.

7.6. Sequence in which information is produced and exchanged

The numbering of the information flows doesn't always respect the indicative sequence of the actions.

More specifications as the responsibilities, the format and the interfaces are defined in the HLA Implementation details

Flow Nb	Info	Produced by	From	To	Predecessor

The below table contains an overview of the recipient of the programming authorizations, i.e. the CCP acting as BRP (or attached to an existing BRP for some countries), i.e. performing the cross-border TSO nominations and the Hub nominations.

Direction of Flow	PX1	PX2

7.7. Protocol flows

The high-level functional architecture and business process primarily includes the systems, agents and information flows between these which are crucial in establishing market coupling in the region. Some of these flows require confirmation or validation. The flows providing such validation or confirmation are referred to as 'protocol flows' as they owe their existence to a (validation or confirmation) protocol. In the current version of the architecture, the agreed protocol flows have been incorporated.

[*Number of protocols*] protocol flows are implemented.

- [*Protocol flow X*]
- [*Protocol flow Y*]

These flows are described below:

[*Flow X*]

Description:

[*Flow Y*]

Description:

Advantages and disadvantages of protocol flows

Adding extra flows for confirmation and validation has the advantage of providing additional comfort on the correctness of certain pieces of information, which could be relevant when it is transferred between separated entities in a contractual framework. But it comes at a cost: it adds throughput time and complexity to the operational procedures. Adding complexity also means adding risk, as each procedural step is a potential point of failure, and adding project work, as it will require testing. The question to ask is: 'Is the additional comfort really necessary and does it outweigh its cost?'

7.8. Glossary

We agree to use the following terms in the functional architecture, in the sense indicated in this glossary. We try to avoid using other terms to refer to the same entities.

Aggregated Order Information: set of all relevant data representing all Orders received by a Power Exchange for a given day. The precise aggregation of this data is for the Algorithm Workstream to define.

ATC: Available Transmission Capacity is the part of NTC that remains available, after each phase of the allocation procedure, for further commercial activity.

Congestion Revenue: total TSO income from selling in importing Market minus total TSO cost from buying in exporting Market.

Congestion Revenue Share: part of the Congestion Revenue which comes back to each TSO, after sharing between TSOs.

Critical Element Flows: the flows on all relevant Critical Network Elements as calculated by the MC System.

Critical Network Elements: it was agreed that this term does not require further definition for the purpose of this document.

Cross-border TSO Exchanges: (also known as Programming Authorisations) the exchanges (exchanges being anticipated CCP nominations) between interconnected TSOs insofar as these are exchanges between two hubs. This implies that cross-TSO exchanges within a Hub are excluded.

Final Net Position: for each Settlement Period of a given day in a given Market, the net quantity of electricity to be exported/imported by an Exchange, as validated by a Power Exchange and accepted by the TSOs.

Final Prices: price per Settlement period of a given day in a given Market as validated by a Power Exchange.

Flow Model Parameters: the complete set of parameters describing the grid in the region taken as an input by the MC System.

Grid Forecast: prognosis of demand and generation and the resulting physical flows in the grid.

Hub: a geographical area for which always one price per price period is calculated.

Individual Results: For each Settlement Period of a given day, Market Price and Schedule of a Market Participant.

Market (or Day-Ahead Market): platform run by a Power Exchange where bids and offers on electricity to be delivered the following day are matched in an auction process. In most cases a market is linked to a geographical area.

Market Participant: member of a power exchange trading in the day-ahead Market.

Matching: calculation of Market Results, as generally performed by a PX.

NTC: Net Transfer Capacity corresponds to the maximum exchange between two areas compatible with security standards applicable in both areas and taking into account the technical uncertainties on future network conditions.

Orders: order sent by Market Participants to the Exchanges. An order consists at least of a product, a price, a quantity, and a direction (purchase or sale). The order is a commitment to sell or buy (as specified in the order) the quantity specified in the order at the price specified in the order (or above the price in the case of sale, or below the price in the case of purchase), of the product specified in the order. Orders are either Divisible Hourly Orders or Block Orders.

Preliminary Net Position: for each Settlement Period of a given day in a given Market, the net quantity of electricity to be exported/imported by an Exchange, as calculated by the MC System.

Preliminary Prices: price per Settlement Period of a given day in a given Market as calculated by the MC System.

Programming Authorizations: see Cross-border TSO Exchanges.

PX net position: for each Settlement Period of a given day in a given Market, the net quantity of electricity to be exported/imported by an Exchange, as validated by a Power Exchange.

Scheduling Information: refers to the nomination or reservation by the market participants of long-term and day-ahead exchange programs with the TSOs.

Settlement Period: The minimum period of time for which Electricity is exchanged on the Day-Ahead Power Exchanges. The assumed Settlement Period is one hour of the following day.

Shadow Prices: for each Settlement Period of a given day, for each critical network element for that Settlement Period the marginal value of a single unit (MW) of capacity.

Technical Information which is input to the TSO back-end systems is to be specified by the TSOs.

Winning Block Set: set of contracted block orders.

5.2. HIGH-LEVEL FUNCTIONAL ARCHITECTURE AND END-TO-END BUSINESS PROCESS FOR SHADOW AUCTIONS

1. Introduction

The main purpose of this document is to describe the HLA including the flows, the interconnection, and the interfaces which will be the basis for the procedures and for the IT design of the Shadow Auctions.

Similarly to the case of the HLA established for the Market Coupling, with Shadow auction it is meant the set of systems, components and arrangements created or adapted to the aim to provide a fallback solution for the day ahead capacity allocation on the borders of the Region in case of Failure of the Market Coupling process at whatever stage.

As for the HLA document accompanying the graphical version of the HLA, the present document adopts one particular perspective on the Shadow Auction: that of information flows. The questions which this document tries to address are the same that have been listed in the twin paper for the Market Coupling, so they will not be repeated in this text.

Further on, this document clears the second assumption made in the HLA MC document: "Fallback system (Shadow auction): A specific HLA including the Shadow Auction will be edited in a separate document".

2. High-level functional architecture and business process

This chapter contains the high-level functional architecture and business process with the current design assumption.

2.1. Architecture overview

The architecture overview shown below was jointly drafted. It is explained in the following sections of this chapter, which are devoted to:

- The system components shown,
- The Agents shown,
- The information produced and exchanged,
- The indicative sequence in which the information is produced and exchanged,
- Remaining questions regarding the information flows (protocol flows and other) and assumptions,
- A glossary, explaining the terms used in the diagram and the remaining text of this chapter

2.2. Systems

The list of systems below reflects the current design assumption.

Concerning the definition of the SA components, reference is made to the MC document, since their meaning (definition, semantic and nature) is not changing in this paper.

The following SA Systems are distinguished: XXX

Systems are interconnected via Interfaces. Each Interface serves one or more information flows. The different information flows are defined in 2.5 with an indicative sequence.

2.3. External Agents

The Agents are represented in the diagram as abstract human figures. Just like the MC components are abstract systems, the Agents distinguished are logical or virtual agents. An Agent is a non-automated entity interacting with one or more Systems or other Agents in the information perspective on the Solution. An Agent is distinguished according to the role he plays. In the HLA Shadow Auction the identified External Agents are the “Fallback participant”, i.e. the entity submitting shadow bids to the Shadow Auction System, and the FSO, the Functional system operator (of the MC System).

2.4. Information produced and exchanged

The information produced and exchanged is represented in the diagram by arrows with a label. The small arrows point in the direction of the information flow. The circular arrows indicate information produced in processes internal to a System. The label indicates the contents of the piece of information transferred or produced. The sequence of production and transfer of information is shown in section 2.5 of this document. The numbering of the information flows doesn't always respect the sequence of the actions.

The real frequency, timing and sequences are being defined in the procedures and in the business process.

It should be stressed that only flows of information are shown in the diagram. Other flows, like energy and money flows, are not taken into account.

2.5. Sequence in which information is produced and exchanged

Flow Nb*	Info	Produced by	From	To	Predecessor
1					
1+n					

*The numbering of the interfaces doesn't necessarily respect the sequence of the actions.

Indicatively, the revenues generated by a Shadow Auction process should be shared according to the same arrangements adopted for the Long Term revenues sharing.

2.6. Protocol flows

The high-level functional architecture and business process primarily includes the systems, agents and information flows between these which are crucial in establishing market coupling in the region. Some of these flows require confirmation or validation. The flows providing such validation or confirmation are referred to as 'protocol flows' as they owe their existence to a (validation or confirmation) protocol. In the current version of the architecture, the agreed protocol flows have been incorporated.

2.7. Physical Link

Numbering	Owner	Technology	Status
[FA1]		[Web Interface/e-mail/ Electronic Highway/ Internet mail/FTP/XXX]	[Existed/tested..]
[FA1+n]		[Web Interface/e-mail/ Electronic Highway/ Internet mail/FTP/XXX]	[Existed/tested..]

2.8. Glossary

We agree to use the following terms in the functional architecture, in the sense indicated in this glossary. We try to avoid using other terms to refer to the same entities.

ATC: Available Transmission Capacity is the part of NTC that remains available, after each phase of the allocation procedure, for further commercial activity.

Congestion Revenue: total TSO income from selling in importing Market minus total TSO cost from buying in exporting Market.

Cross-border TSO Exchanges: (also known as Programming Authorisations) the exchanges (exchanges being anticipated CCP nominations) between interconnected TSOs insofar as these are exchanges between two hubs [*HubX - HubY, HubY – HubZ*]. This implies that cross-TSO exchanges within a Hub are excluded.

Explicit Auction: Capacity allocation operated by CASC on behalf of the TSO's of the region. This type of auction is organized on a yearly, monthly and daily basis and in case of decoupling situation for the region.

Hub: a geographical area for which always one price per price period is calculated.

Market (or Day-Ahead Market): platform run by a Power Exchange where bids and offers on electricity to be delivered the following day are matched in an auctioning process. In most cases a market is linked to a geographical area.

Fallback Participant: member of the XXX platform and taking part of the Shadow explicit Auction. This includes BRP's being participant or not on the Exchange(s).

FSO: Functional System Operator (of the MC System)

Matching: calculation of Market Results, as generally performed by PXs or by CASC in case of Fallback situation.

Orders: order sent by Market Participants to the Exchanges. An order consists at least of a product, a price, a quantity, and a direction (purchase or sale). The order is a commitment to sell or buy (as specified in the order) the quantity specified in the order at the price specified in the order (or above the price in the case of sale, or below the price in the case of purchase), of the product specified in the order. Orders are either Divisible Hourly Orders or Block Orders.

Programming Authorizations: see Cross-border TSO Exchanges.

Shadow bid: Bid entered by Fallback participant via the XXX platform. The bids are entered before a decoupling announcement and will be taken into consideration as soon as the decoupling is published on the market. Modification on the bid will not be permitted after decoupling announcement

5.3. ALGORITHM REQUIREMENTS

1. Introduction

This document lists the requirements that the market coupling (MC) algorithm to be designed for the [Name] project must fulfil.

These requirements relate

- either to the strict framework of the [name] project, i.e. they are considered as necessary to couple the [number] exchanges through scheduled electrical energy transfers using electric networks existing in the [number] [region] countries (“mandatory requirements”),
- or – as a second priority -to potential extensions of the [name] project, for instance the coupling of the [name] regions with other PXs belonging to other regions (“additional requirements”).

The latter “additional” requirements, if not strictly necessary for the success of the [name] project, will undoubtedly be highly useful, notably in the already planned multi-regional extensions. Therefore one of the evaluation criteria for the [name] algorithm is its flexibility: it must be relatively easily adaptable to fulfil the additional requirements.

2. Mandatory Functional requirements

2.1. Objective

The MC algorithm refers to the full solution, including elements that may be undertaken locally or centrally. The algorithm takes as input all necessary information¹ from all local orders submitted by the participants of the power exchanges and the parameters of the network constraints.

The MC Results, output of the algorithm, are:

- for each bidding area:
 - the area net position for each hour (exporting or importing),
 - the Market Clearing Price (MCP) for each hour,
 - the set of accepted and rejected, block orders;
- for each constraint in the network representation:
the shadow² price associated with the network constraint for each hour.

The algorithm must determine the best MC results under the exchanges’ constraints, the network constraints and the high level properties (see below) and in this way optimize the economical usage of the cross border transmission capacity.

¹ Minimum information to be provided includes volume and price of all individual but anonymized block orders and so called Net Export Curves, provision of more detailed information like all anonymized individual orders should also be supported by the algorithm but is not required

² a “shadow” price associated to a constraint is the increase of the objective function resulting from relaxing this constraint by one unit

2.1.1. Order types

2.1.2. Network constraints

2.1.3. High Level Properties

2.1.4. Performance requirements

2.1.5. Reproducibility

3. Algorithmic behaviour

The algorithm design process is described in a parallel document (“Algorithm design approach”). Nevertheless, this section describes the “targets” of the algorithm. Indeed, whereas the beginning of this document provides a description of various features to be included in the algorithm, this section presents insight on the qualitative aspects expected for the algorithm.

- a. Methodology**
- b. Simplicity**
- c. Performance**
- d. Scalability**
- e. Robustness**
- f. Reliability**
- g. Transparency**
- h. Data sensitivity**
- i. Extensibility**

5.4. MC SYSTEM EXTERNAL INTERFACE SPECIFICATION

1 Preface

This document contains the requirements on and specifications of the external interfaces of the Market Coupling System. It is primarily intended for the System Supplier who will develop the MC System and the internal or external parties that develop or adapt the systems that interface with the MC System. In second instance, it will be used by the MC project to validate and accept the MC System and the (adaptations to the) systems it interfaces with.

2 Introduction

2.1 Sequence overall process

2.2 Interface specification approach

3 Document descriptions

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Annex 7. CHANGE CONTROL PROCEDURE

1. Introduction

1.1. Purpose

This document describes the Change Control Procedure to be used as part of the Market Coupling operations. It provides a controlled environment in which changes can be implemented efficiently with the minimum of delay and the least risk.

The process aims at tracking all types of changes from major changes through the scope and functionality of the Market Coupling to minor bugs in the software.

Whilst the majority of changes are likely to be simple operational changes, it is still important that the procedure is robust to the processing of more complex changes.

1.2. Outline of the Change Control Procedure

The overall Change Control Procedure provides a process which caters for complex solutions. In the case of simple problems (with a low risk solution affecting a small number of Components owned by a single or joint Party) a provision of a notification process is foreseen. This notification process simply informs other parties of the changes that are being carried out.

For changes which are more complex, of a slightly higher risk or affecting multiple Components or for Components which are the responsibility of more than one Party (or its subcontractor), the process allows for:

- the distribution of the proposed changes;
- the possibility for Parties to review the changes and provide feedback; and
- when necessary, either because of objections or because of the complexity of the proposed change, to request a review by the Steering Committee.

Changes are recorded in the Request for Change (RFC).

For notifications and simple changes, the change will be recorded on just one form, the Request for Change (RFC) form. This will contain all the information required including the cause of the change, the proposed solution, its impact and the way in which the change will be implemented. **In this case no other forms will be required to be completed.**

In the case of complex changes it may not be possible for the originator to complete all of the sections of the RFC. In this case the other sections, such as e.g. solution analysis (Section B of the RFC), impact assessment (Section C of the RFC), implementation plan (section D) will be requested from the appropriate people using the relevant form(s). This will allow individual responses from several Parties in the case, for example, the solution affects several Components.

The Change Control Procedure is coordinated by the Change Control Administrator (CCA). The CCA shall rotate among the Parties on a yearly basis (according to the measures agreed in the Framework Agreement).

The Parties shall appoint a Local Change Administrator (LCA) for:

- (a) each of the Parties;
- (b) each of the Components jointly developed by the Parties;
- (c) each of the tasks subcontracted by the Parties.

The LCA is the single point of contact for the purpose of the Change Control Procedure. The LCA shall perform all tasks assigned to it/them, including when the tasks are subcontracted by the Parties.

Each of the steps involved in this procedure and their associated timings are described in Section 3.

1.3. Scope

Any changes can be proposed through this Change Control Procedure. In accordance with Paragraph 8.1.1 and Paragraph 18.1.2 of the Framework Agreement, the changes to the following must comply with the Change Control Procedure:

- The annexes indicated as “in scope” in Annex 14 of the Framework Agreement; and
- the Components indicated as “in scope” in the Component List (Annex 6 of the Framework Agreement).

Other elements falling under the scope of Change Control Procedure are the operational procedures (although annexed to the Framework Agreement which is not in scope of this Change Control Procedure) and IT/IS items. The changes applicable to the latter elements should follow the specific Change Control process described in section 2.3 of this document.

The local TSO's Components are not considered in scope of this procedure since the risk management procedure associated to these Components is defined and handled by the TSOs jointly.

1.4. Structure of Document

Section 2 contains a flowchart showing the steps to be taken in the identification and processing of changes. This forms the basis of this Change Control Procedure which is described in the remaining parts of the document.

Section 3 provides further details of the activities to be carried out. It expands on the flowchart and identifies the rules and options for some actions. Where there are specific time constraints these are identified.

Section 4 contains the various forms used by the procedure together with guidance on their use.

Section 5 gives information regarding the allocation of risk to changes.

Section 6 describes assurance gathering in the context of the Change Control Procedure.

Sections 7, 8 and 9 provide the terms of reference for each of the main participants in the Change Control Procedure.

2. Workflow Diagram

The workflow diagrams describe the overall flow of the procedure

3. Activity and Timing Information

The tables below provide details of the actions to be taken at each step of the procedure and the timeframe within which they should be carried out.

In all cases where there is activity to be carried out by the Parties (or their subcontractors if any) they should aim to do it as soon as practically possible. In particular, the CCA will aim to process documents within the timeframe allowed and in most cases on the Business Day of receipt of documentation.

Two sets of timings are identified for each process described in the Change. The column 'normal timing' provides the framework for dealing with changes, except for bug fixes and changes needed for continuity reasons which fall under the column 'fast track timing'. The fast track timing should only be used in exceptional conditions. In all cases the processing of changes will be much faster when the RFC will be as complete and as detailed as possible from the beginning.

The standard for communications will be email with fax and telephone as back up mechanisms.

4. Change Control Forms

4.1. Introduction

The Change Control Forms provide the basis of the information exchanges regarding changes between all interested Parties with respect to a particular change.

For complex changes (i.e. changes needing a thorough impact analysis, such as impacting several systems, a substantial change of a Component, etc.) the Solution Proposal Form, the Impact Assessment Form and the Implementation Plan Form (can be used to gather information from participants).

Objections are raised using the Objections Form and changes to Component versions are sent on the Component Version Update Form.

Changes to or new LCA registrations are carried out on the LCA Registration Form.

This section provides details of how to complete the forms and the information that is required in each one. The provision of complete and correct information is important to the efficient operation of the overall process. Generally as much information as possible should be provided at each stage to speed up the process.

Type of Forms:

- LCA Registration Form
- Operational Procedure Form
- Request for Change Form
- Solution Proposal Form
- Impact Assessment Form
- Implementation Plan Form
- Objections Form
- Component Version Update Form
- Risk and Impact Allocation

5. Categories and Risk

The overall impact of implementing a change will be defined through the nature of the Components affected and the risk associated with the particular change that is being carried out. Note that, when a Component is jointly operated by Parties, it is treated as if there was just a single Component.

The categories for each Component are defined as part of the Component description in the configuration database.

Each proposed change will have a degree of risk associated with it

5.1. Component Impact

For **each Component** affected by the proposed change the category and risk are combined to provide an impact for the Component as defined in the table below.

5.2. Route of the Change through the Procedure

6. Assurance Gathering

As part of the Change Control Procedure it is necessary to provide assurance that the changes that have been made are correct and suitable for live operation. This assurance gathering can take place using a range of activities as described below. The level of assurance gathering will depend on the nature and scope of the change.

6.1. Assurance Activities

6.2. Scope of Assurance Gathering

7. Tasks of the Steering Committee (or subcommittee) under the Change Control Procedure

The tasks of the SC under the Change Control Procedure are defined in the present section.

7.1. General tasks

Under the Change Control Procedure, the SC performs three (3) main tasks, namely it:

- (a) ratifies proposed changes (for those that are provided to it in accordance with the Change Control Procedure);
- (b) determines when changes should be scheduled (in case several changes relate to the same Component or to different Components but in the same timeframe); and
- (c) appoints a person responsible for implementing changes (or instructs that such person should be appointed).

7.2. Specific tasks

Under the Change Control Procedure, the SC has the following specific tasks, namely it:

- (a) designates, among its members, a CCA;
- (b) controls and monitors the activities of the CCA;
- (c) notifies the CCA of the contact details of the SC members;
- (d) is available within the timeframes set forth in the Change Control Procedure to perform the tasks as defined in the Change Control Procedure;
- (e) reviews RFC;
- (f) assesses completeness of the RFC in the light of the Change Control Procedure and requests for additional information;
- (g) accepts or rejects RFC;

Rejections can only be made when:

- (i) Costs exceed benefits;
- (ii) Development is excessive;
- (iii) Implementation entails risks;
- (iv) Objections are upheld; and
- (v) RFC contradicts other implementations.

- (h) reviews objections to changes;
 - (i) assesses completeness of objections to change in the light of the Change Control Procedure and requests for additional information;
- (j) accepts or rejects objections to changes;
- (k) confirms that the go live criteria have been met and determines the implementation date for changes and the timing of implementation;
- (l) receives monthly reports from the CCA;
- (m) escalates issues for decision of the SC as set forth in the Change Control Procedure (if subcommittee);
- (n) reviews the appropriateness and efficiency of the Change Control Procedure at least once a year ; and
- (o) proposes changes to the Change Control Procedure to the SC (if subcommittee).

8. Tasks of the CCA under the Change Control Procedure

8.1. Introduction

The CCA is the person responsible for the central management and administration of changes under the Change control Procedure. The role of the CCA is key to the successful operation of the Change Control Procedure. It is the single person of contact for notifications and RFC and for circulating information and analysis requests. It is the central repository for change control information.

8.2. Tasks of CCA

The tasks of the CCA under the Change Control Procedure are defined in the present section.

Under the Change Control Procedure, the CCA has the following tasks, namely it:

- (a) keeps an updated version of the contact details of the LCAs and distributes it to the attention of the OPSCOM and of the LCAs;
- (b) proposes updates of the List of Components (Annex 6 of the Framework Agreement) to the SC;
- (c) updates and maintains a register of changes;
- (d) reviews RFCs and notifications;
- (e) receiving notifications of change from the LCA's and circulating these for information in accordance with the change control procedure.
- (f) assesses the completeness of RFCs in the light of the Change Control Procedure, including the check of the Components and risk categories in accordance with the Change Control Procedure and the List of Components (Annex 6 of the Framework Agreement);
- (g) requests for additional information on RFCs;
- (h) allocates unique RFC numbers;

- (i) coordinates the items of the agenda of the OPSCOM that relate to the Change Control Procedure;
- (j) requests emergency meetings of the OPSCOM to review urgent RFCs;
- (k) provides relevant RFCs to the OPSCOM and ensures the follow up of the decisions of the OPSCOM in this matter;
- (l) reviews objections to changes;
- (m) assesses completeness of objections to change in the light of the Change Control Procedure;
- (n) requests for additional information on objections to change;
- (o) in case the objection to change remains unmotivated or motivated inadequately following a request for additional information, escalates the matter to the SC;
- (p) communicates to all LCAs the implementation date for changes and the timing for implementation;
- (q) communicates the go live criteria to the LCAs;
- (r) provides monthly change management reports to the OPSCOM and the LCAs, including details of the RFCs that have been raised, their type (notification, emergency fix, etc.), status (position in the change control cycle), risk category and impact on Components;
These reports are provided in due time before the OPSCOM meeting.
- (s) provides monthly implementation reports to the OPSCOM and LCAs setting out the dates of future planned changes, the Party responsible for the changes and the impact on Components;
These reports are provided in due time before the OPSCOM meeting.
- (t) provides advice to any concerned Party (or subcontractor if any) on completing the forms under the Change Control Procedure as necessary.

9. Tasks of the LCA under the Change Control Procedure

9.1. LCA Summary

LCAs perform a key role in the Change Control Procedure.

LCAs are the single point of contact for any communications in respect of the RFCs and notifications. As a general matter LCAs are responsible for:

- submitting RFCs and notifications;
- coordinating the responses to solution analysis requests (section B of the RFC) and impact assessments within their own companies;
- ensuring that agreed changes are implemented.

For any Component for which a RFC must be filed, the relevant LCAs will be responsible for submitting the RFC, for coordinating the assessment of the impact of the change and for ensuring that the change is implemented.

9.2. Tasks of LCA

Each LCA shall have the following tasks:

1. designate a person who will substitute the LCA in case the LCA cannot perform its tasks;
2. provide the CCA with its contact details and those of its substitute and keep the CCA updated of any change of these;
3. provide the CCA with details of any new Components that should be added to the register of change, including the Component category and risk category;
4. send complete RFC and notifications to the CCA in accordance with the Change Control Procedure;
5. inform all relevant persons within its company of RFCs as communicated by the CCA and follow up these internally;
6. take receipt of RFC from the CCA for solution analysis and impact assessment;
7. Receiving notifications of change from the CCA and ensuring that the relevant departments within their organisation are notified of the changes
8. The LCA will ensure that the relevant persons within its company are informed of it with a view of assessing the RFC within the timeframes set out in the Change Control Procedure.
9. raise objections, if any, against received RFC.
10. Objections shall always be motivated. Before raising an objection, the LCA ensures that reasonable efforts have been made to resolve the objection between the relevant Parties (or subcontractors if any) informally.
11. collect the results of the internal analysis/assessment and communicate a common position of its company to the CCA;
12. distribute the monthly overview reports received from CCA internally;
13. ensure that the date upon which a change will be implemented is reported to all the relevant persons within its company;
14. in case the CCA is not available, each LCA shall communicated himself/herself his/her RFC to the other LCAs.
15. The LCA circulating the RFC shall take upon him all responsibilities of the CCA concerning this RFC.
16. The LCA will perform its tasks during Business Hours.

ANNEX 8 PROCEDURES

- GLOSSARY
- RECEPTION AND INTEGRATION OF ATC VALUES IN THE MC SYSTEM
- TRANSFER OF CALCULATION RESULTS AND VALIDATIONS BETWEEN PX TRADING SYSTEMS, MC SYSTEM AND TSO COMMON SYSTEM
- TRANSFER OF ATC VALUES FROM TSO COMMON SYSTEM TO MC SYSTEM
- RECEPTION OF THE AGGREGATED ORDER FROM PX SYSTEMS TO MC SYSTEM
- MC CALCULATION INCL. CHECK AND TRANSFER ROUNDED PRICES
- NET POSITIONS VALIDATION BY TSO COMMON SYSTEM
- CONNECTION TO THE GUI AND TRANSFER OF FINAL PRICES AND NET POSITIONS FROM MC SYSTEM
- INCIDENT INVESTIGATION
- TRANSFER OF DATA FROM MC SYSTEM TO BOTH CROSS PX CLEARING SYSTEMS AND TRANSFER OF CROSS BORDER TSO EXCHANGES (PROGRAMMING AUTHORIZATIONS) FROM TSO COMMON SYSTEM TO CROSS PX CLEARING SYSTEMS
- HUB AND CROSS-BORDER NOMINATIONS PERFORMED BY THE CCPS
- INCIDENT COMMITTEE PROCEDURE
- COMMUNICATION TO MARKET PARTICIPANTS
- LONG CLOCK CHANGE
- MC SYSTEM SWITCH AND POSSIBLY RESET OF THE MC SYSTEM

Annex 9. TEMPLATE OPERATIONAL CALENDAR & CONTACT DETAILS

It is proposed to maintain the operational calendar & contact details within an Excel-file. Below a proposed scheme is shown:

Last Update: XX.XX.XXXX						
List of operational contact details				Operational Calendar		
Role	Contact Name	Phone number	Email	W1	W2	W..n
X						
Y						

Annex 10. List of Operational Data to Publish

This annex provides an overview of the publication of operational data during ATC based market coupling: definition of data, unit to use for publication and the entity responsible for the publication for normal operation, fall back and roll back. The obligation to publish these operational data, stems from European regulation and the rules on transparency (except for the market results).

Annex 11. License Agreement

Minimal or Extended license agreement for the mathematical algorithm on the basis of which among others price and volume calculation of the coupled markets will take place

- Parties : the “Licensors”; the “Licensee”;
- WHEREAS setting the context
- Interpretation – definitions – Interpretation
- Subject matter
- License : type of Granted License (Minimal License) - Permitted Use upon payment of the license fee - License Term - Geographical Scope - Future software versions
- Delivery
- License Fee and payment conditions
- Warranty
- Title and (Intellectual) Property Rights
- Confidentiality
- Limitation of liability
- Entry into force, duration and termination
- Governing law and disputes
- Varia

Annex 12. Simulation Facility Services

I.- Description of the Simulation Facility Services rendered to the TSOs

In accordance with Article 9 of the Agreement, the PXs shall jointly provide the Simulation Facility Services to the subscribing TSO(s). Subscription to the Simulation Facility Services entitles to the following services:

The PXs have appointed as the PX rendering the Simulation Facility Services to the subscribing TSO(s).

II.- Functionalities of the Simulation Facility

III.- Fees for the Simulation Facility Services

IV. Invoicing for the Simulation Facility Services

V. Termination of the subscription to the simulation facility services

Annex 13. Change Control Procedure Application

Format: Excel-file

Annexes indicated as "in scope" of the Change Control Procedure require the implementation of the Change Control Procedure before the SC decision/signature process

CHANGE CONTROL PROCEDURE APPLICATION	
Annexes modifiable by Steering Committee decision	In scope of the Change Control Procedure?
Annex 2: PARTIES' CONTRACTUAL CONTACT DETAILS	
Annex 3: SUBSIDIARY AND OTHER SPECIFIC CONTRACTS OVERVIEW	
Annex 4: RULES OF INTERNAL ORDER	
Annex 5: MC REQUIREMENTS	
Annex 6: LIST OF COMPONENTS	
Annex 7: CHANGE CONTROL PROCEDURE	
Annex 8: PROCEDURES	
Annex 9: TEMPLATE OPERATIONAL CALENDAR & CONTACT DETAILS	
Annex 10: LIST OF OPERATIONAL DATA TO PUBLISH	
Annex 12: SIMULATION FACILITY SERVICES	
Annex 15: MANAGEMENT OF THE CWE MC ROUNDING ENERGY	

Framework Agreement/Annexes modifiable by signature of all Parties	In scope of the Change Control Procedure? *
FRAMEWORK AGREEMENT MAIN BODY	
Annex 11: LICENSE AGREEMENTS	
Annex 14: CHANGE CONTROL PROCEDURE APPLICATION	

Annex 14. Management of the Rounding Energy

1. Definition of Rounding Energy :

- (a) The net positions of the Hubs resulting from the Market Coupling calculation (the mathematical algorithm on the basis of which among others price and volume calculation of the coupled markets will take place) are rounded. Following this rounding process, it can happen that the rounded net position values do not strictly sum up to zero.
- (b) For each Hub, bilateral exchanges are also rounded by the TSO Common System. Following this rounding process, it can happen that, for a given Hub, the sum of the bilateral exchanges do not strictly sum up to the net position of this Hub.

These two rounding processes result in a “rounding energy” on each Hub, which is mathematically equal to the difference between the net position of the Hub and the sum of bilateral exchanges of the Hub; this “rounding energy” per Hub is a combination of (a) and (b) described above (the “**Rounding Energy**”).

For a given Hub and a given hour, the Rounding Energy can be either deficit energy or surplus energy, depending on the Market Coupling Results and bilateral exchanges results.

2. Management of Rounding Energy

2.1. Local management

Each respective CCP manages Rounding Energy on a local basis, meaning that the rules for physical management and financial settlement of the Rounding Energy are defined between the local TSO(s) and the respective CCP.

2.2. Cost recovery

Provided such costs/income occur, TSOs undertake to bear the following real and accurate costs/incomes related to physical and financial management of the Rounding Energy on a local basis and under the modalities defined locally (on a country basis). These costs/incomes are:

- (a) cost/income linked to the purchase/sell of the rounding energy by the CCPs at spot market price on their respective power exchanges;
- (b) cost/income linked to the local imbalance on the respective CCPs’ balancing perimeters;

The treatment of any additional costs for handling the Rounding Energy has to be negotiated and decided locally between the TSO and its respective CCP.

2.3. Physical management of Rounding Energy

The concerned CCP accounts for the Rounding Energy. Where and in so far as this implies an imbalance of the CCP on the concerned Hub, this imbalance is affected to the TSO(s) on a local basis.

2.4. Technical management of Rounding Energy

The Rounding Energy is calculated in the Cross PX Clearing Systems of the PXs

This information is then transmitted to the CCPs IT system for Cross Border Nomination and financial settlement.

2.5. Financial settlement of Rounding Energy

Provided such costs/income occur, TSOs undertake to bear the costs/income related to the management of the Rounding Energy on a country basis.

2.6. Contractual arrangements for Rounding Energy

The contractual agreements between the respective CCPs and TSOs for Rounding Energy are formalised at the local level, on a bilateral basis.

General Framework Agreement organizing the Day-Ahead Market Coupling between and

Assumptions: this General Framework Agreement is based on several assumptions, because the design of the effective MC projects have not yet started and cannot serve as input for the GFA. The assumptions taken are the following :

- The MC projects are between two control areas within the Western Balkans: this Agreement is based on bilateral market coupling) but can be adapted being multilateral depending the scope of the project or the use of the GFA (as general global framework agreement).
- The PXs are different in the two control areas;
- A TSO Common System is set up;
- Agreement describes the most complex situation with other entities than PXs & TSOs realizing some of tasks that can be done by PXs & TSOs.
- Balanced rights & obligations between PXs & TSOs.
- The Algorithm Requirements are not listed within the list of MC requirements because Euphemia is already chosen, even if the algorithm is an essential element of the MC design.
- The daily operations are dependent of the technical design and procedures approved for the WB6 market coupling. We propose the most complex design with an independent central counter party (CCP) and a TSO entity for PTR calculation and making them available to PXs. However it can be differently organized (e.g. PXs taking the role of CCP and/or TSOs the one of calculating entity); Congestion revenue is collected and used through the CCP. The project design might decide not using CCPs, nor a TSO entity.
- To be decided if needed. The Simulation Facility is an application in which the Executable Software (Euphemia) is embedded. It allows the simulation of market coupling sessions based on any mix of historical data and/or

artificial input data as well as the reporting on the output of these simulations (limited to reporting available in the Simulation Facility):

- for analysis purposes and download of the available data to perform operational and management reporting
- to test changes to the market design; impact of modifications of the Capacity calculation model.

December 2018

Parties

THIS AGREEMENT IS ENTERED INTO AND MADE ON BETWEEN:

List of Parties of the General Framework Agreement (hereafter the “Agreement”) with all companies details:

- The power exchanges (PX having the licence/ Statute of PX for the Market Coupling’s related control zones): Individually referred to as “**PX**” and/or collectively referred to as “**PXs**”
- the TSOs competent for the Market Coupling’s related control zones : individually referred to as “**TSO**” and/or collectively referred to as “**TSOs**”

TSO(s) and PX(s) being referred to as “**Party**” individually and/or “**Parties**” collectively

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Preamble

1. Western Balkans 6 (WB6) refers to the six parties of the Energy Community Secretariat, in which several market coupling projects will be deployed : Albania, Bosnia and Herzegovina, Kosovo, former Yugoslav Republic of Macedonia, Montenegro and Serbia
2. This General Framework Agreement is organizing the Market Coupling agreement between two (2) control areas : ... and ... within the Western Balkans [and ..., outside the region of Western Balkans].
3. Market Coupling is recognised by the actors of electricity sector as the best mechanism to integrate electricity markets of different physical areas because it is based on an implicit, market based and non-discriminatory method for coordinated price formation in each involved hub and allocation of Available Interconnection Capacity. Market coupling calls upon core tasks of TSOs (allocation of Available Interconnection Capacity) and PXs (ensuring non-discriminatory, transparent and confidential price formation between market participants via their exchange platforms);
4. The Parties together with ministries and regulators, signed a Memorandum of Understanding in which they committed to improve cooperation in the field of cross border exchange of electricity in the Western Balkans and more specifically to use reasonable resources and support with the overall aim to (i) analyse, design and implement a Market Coupling between two control areas of the Western Balkans, (ii) enhance market integration and (iii) enhance security of supply in the Western Balkans;
5. To this effect, the Parties decided to set up and participate in a joint project for designing, developing and implementing the Market Coupling between ... and ... ;
6. Under this Market Coupling Project:
 - a. the Parties decided to implement the Market Coupling;
 - b. the Parties have decided to use Euphemia for the Market Coupling;
 - c. the Parties have concluded agreements to ensure amongst others the design, cost recovery, confidentiality, development of Components and their implementation;
7. The Parties now wish to enter into this General Framework Agreement (the “Agreement”) to set forth the main terms and conditions under which the Parties will cooperate to operate and maintain the Market Coupling.

IN CONSIDERATION OF THE ABOVE, THE PARTIES HEREBY AGREE, UNDER THE TERMS AND CONDITIONS OF THIS AGREEMENT, AS FOLLOWS:

Article 1- PURPOSES

This Agreement sets forth the rights and obligations of the Parties regarding their cooperation in respect of the operation, *in ... and ...* , of a Day Ahead Market Coupling, as regards roles and responsibilities in respect of operations, governance and decision making, by organizing a wholesale implicit day-ahead

allocation of cross-border transmission capacities on their mutual borders, in order to achieve the objectives of the MoU, in particular in order to:

- (a) enhance security of supply;
- (b) increase competition in electricity wholesale markets;
- (c) preserve and enhance a fair and orderly market including fair and orderly price formation;
- (d) enhance more efficient use of cross border interconnections by objective, implicit, market based, non-discriminatory and transparent methods of allocation of Available Interconnection Capacity;
- (e) provide fair and non-discriminatory access to the Market Coupling;
- (f) facilitate the coupling within adjacent markets and regions and thereby contribute to the integrated Western Balkans energy market and, more globally, the integrated European energy market with a goal to keep Price Coupling at least in the control areas and to promote Price Coupling wherever possible beyond the concerned control areas;
- (g) increase economic efficiency in the Western Balkans Region.

Article 2 - DEFINITIONS

The definitions used in this Agreement are set forth in Annex 1 or if relevant in the glossary of the Operational Procedures set forth in Annex 5.

Article 3 - CONTRACTUAL FRAMEWORK

Paragraph 3.1 - CONTRACTUAL SCHEME

3.1.1. This Agreement contains the general framework and the main principles of cooperation between all the Parties in respect of the purposes set forth in Article 1.

3.1.2. The Parties will enter into the Subsidiary Agreements listed in Annex 3 to further implement and elaborate in detail the general framework, as well as in any other agreements necessary for implementing this Agreement.

3.1.3. The Subsidiary Agreements shall at all times be compliant with this Agreement and shall not be in contradiction with it. The Party(ies) entering into other agreements necessary for implementing this Agreement shall ensure that such other agreements shall at all times be compliant with this Agreement and are not in contradiction with this Agreement.

If the Parties involved in Subsidiary Agreements notice that any of these arrangements is not aligned with the GFA, these Parties shall without delay notify in writing the Steering Committee thereof stipulating the reasons for not being able to ensure that Subsidiary Agreements are in line with this Agreement. Following such notification, the Steering Committee shall try to find the best reasonable solution with the least adverse consequences to the Market Coupling.

3.1.4. The Parties shall at all times perform and uphold the Subsidiary Agreements and other agreements they are a party to in accordance with this Agreement and with the relevant Subsidiary Agreements.

Paragraph 3.2 - CONTRACTS HIERARCHY

Notwithstanding Paragraph 3.1, should differences and/or contradictions exist between this Agreement and any of the Subsidiary Agreements, the terms and conditions of this Agreement shall prevail unless explicitly agreed otherwise by the Parties in this Agreement.

The Agreement is, at the time of its signature, composed of its main body and its Annexes listed at the end of this Agreement (which may be subdivided). Should differences and/or contradictions exist between the main body and any of the Annexes, the terms and conditions of the main body shall prevail.

Article 4 - PRINCIPLES OF COOPERATION

Paragraph 4.1 - BEST EFFORTS OBLIGATIONS

Obligations of the Parties under this Agreement shall be Best Efforts obligations unless explicitly otherwise specified in writing.

Paragraph 4.2 - ACTIVE COOPERATION

- 4.2.1.** Given that the success of the Market Coupling depends on the well-functioning of the Components, on interactions between these Components and on interactions between the Parties, the Parties shall cooperate actively in this respect with a view to realising the purposes of this Agreement set forth in Article 1 especially in case of unexpected difficulty.
- 4.2.2.** With a view to join the European electricity market and/or to create a Western Balkans Market, the Parties recognise the need to aim at a wider market coupling cooperation and the Parties agree to discuss on any potential option as may be agreed between the PXs and/or TSOs and other power exchanges and transmission system operators.

Paragraph 4.3 - GOOD FAITH COOPERATION ON EQUAL BASIS

The Parties shall exercise their rights and obligations under this Agreement in good faith and shall adopt a fair and loyal treatment towards each other, according to which all Parties should be treated equally without prejudice of interpretation principles set in Paragraph 23.8.

Paragraph 4.4 - TASK ALLOCATION

- 4.4.1.** The Parties shall allocate their tasks under this Agreement in the most efficient manner, taking into account the core competences of the TSOs on the one hand and of the PXs on the other hand and the purposes of this Agreement set forth in Article 1.

4.4.2. The Parties therefore agree that the:

- (a) PXs shall jointly put at disposal their know-how and experience in their daily activity of matching electricity orders and price determination and jointly perform the Market Coupling by using their local existing market platforms and the Market Coupling System through which Available Interconnection Capacity will be implicitly Allocated on a day ahead basis; and
- (b) TSOs shall jointly put at disposal their know-how and experience in their daily activity of Available Interconnection Capacity calculation, of management of Congestions, of the granting of Physical Transmission Rights for Cross Border Exchanges and of management of grid security, and shall jointly put at disposal of the Market Coupling the Available Interconnection Capacity.

Given that, on the one hand, the daily business of the TSOs to calculate the Available Interconnection Capacity on the grid is essential to the Market Coupling and, on the other hand, that the outcome of this calculation has a material impact on the price formation which is the core business of the PXs, Parties agree that TSOs may decide to change their current Available Interconnection Capacity calculation methodology, as communicated to the PXs at the date of entry into force of this Agreement set forth in Paragraph 19.1, provided that the PXs are timely informed of any such change that could materially adversely affect price formation. PXs may request a validation study or a market consultation.

Paragraph 4.5 - STATE OF THE ART PERFORMANCE

4.5.1. Each Party shall perform its obligations under this Agreement and under the relevant Subsidiary Agreements:

- (a) in compliance with all requirements of this Agreement, the relevant Subsidiary Agreements and all laws and regulations applicable to it;
- (b) in compliance with good practice, state of the art and current professional standards applicable to this type of obligations, and any specifications and requirements decided upon by the Steering Committee;
- (c) within target dates and/or target deadlines specified as the case may be under this Agreement;
- (d) using, where appropriate, suitable technology, materials and/or equipment including necessary backups and contingency plans and trained and competent staff for the execution of its obligations under this Agreement;
- (e) with a view to assuring the good implementation of it in the best interest of all Parties; and
- (f) with all necessary licenses, certification and authorisations, at local and/or regional level, to perform their obligations under this Agreement.

The Parties shall ascertain cost efficiency and shall co-operate to avoid unnecessary costs and identify and implement efficient solutions. Parties shall ensure that costs are in line with CACM, more specifically costs shall be reasonable, efficient and proportionate.

4.5.2. Each Party declares, by signing this Agreement, that it has the knowledge, experience and human and technical competence necessary for the satisfactory performance of its obligations in accordance with this Agreement.

Paragraph 4.6 - SUBCONTRACTING

- 4.6.1.** In the event of subcontracting to a third party, the performance of subcontractors shall be in accordance with this Agreement.
- 4.6.2.** A Party subcontracting the performance of all or part of its obligations under this Agreement shall at all times remain fully responsible and liable towards the other Parties for the fulfilment of its obligations and for the performance of the subcontractor, in accordance with this Agreement, unless otherwise specified in this Agreement.
- 4.6.3.** To the extent the subcontracting concerns one of the essential activities identified in this Paragraph 4.6.3 (a) to (c), the Party subcontracting its performance shall inform the other Parties in writing of the identity of the subcontractor, the scope of the subcontracting and of any practical implication of this subcontracting on the Market Coupling, unless this information has already been provided to the other Parties at the date of entry into force of this Agreement set forth in Paragraph 19.1.

For the purpose of this Paragraph, the following activities are deemed to constitute essential activities :

- (a) hosting and operating the Market Coupling System;
- (b) hosting and operating the TSO Common System; and
- (c) hosting of the data storage.

Article 5 – MARKET COUPLING COMPONENTS AND RESPONSIBILITIES

Paragraph 5.1 - GENERAL PRINCIPLES REGARDING ROLES AND RESPONSIBILITIES, AND COMPONENTS

- 5.1.1.** Roles and responsibilities of the TSOs on the one hand and PXs on the other hand, shall be compliant with the roles and responsibilities needed for the Market Coupling related to the capacity calculation and the capacity allocation.
- 5.1.2.** The Parties shall put at disposal, operate and maintain the Components for the Market Coupling set forth in this Article.
- 5.1.3.** The Parties shall have backups for the Components to ensure continuity of the Market Coupling.
- 5.1.4.** The Parties shall agree in good faith on which supporting documentation in respect of Components is to be exchanged between them and on the required detail level of this documentation.

- 5.1.5.** A Party undertakes to promptly notify to the Steering Committee any difficulty to comply with this Article 5 or any non-compliance with this Article 5. The Steering Committee is entitled to discuss any possible solution and decide on it.
- 5.1.6.** The Parties shall put at disposal and maintain Physical Links and Interfaces as set forth in the Component List as mentioned in Annex 6.

Paragraph 5.2 - MC REQUIREMENTS

The Parties shall jointly determine and maintain the MC Requirements, consisting of the following documents:

- (a) High Level Functional Architecture for Normal Circumstances and Fallback Circumstances (Annex 8);
- (b) Market Coupling System external interface requirements (Annex 8);
- (c) Change Control Procedure (Annex 7) and the Operational Procedures (Annex 8) included.

Paragraph 5.3 - JOINT PX COMPONENT

- 5.3.1.** PXs shall jointly put at disposal, operate and maintain, to the benefit of all Parties and in compliance with this Agreement a Market Coupling System, it being understood that for operational purposes each PX may use its own instance of the Market Coupling System when performing operations.
- 5.3.2.** PXs shall jointly determine and maintain the requirements of the Market Coupling System and the internal interface requirements between the ATC calculation Executable Software and the Market Coupling System. In case of an updated version of any of these requirements, PXs shall jointly put at the disposal of the TSOs the latest version of these requirements on their request.
- 5.3.3.** PXs shall jointly ensure maintenance of the Joint PX Components in compliance with the MC Requirements as mentioned in Paragraph 5.2.

Paragraph 5.4 - JOINT TSO COMPONENT

- 5.4.1.** TSOs shall jointly put at disposal, operate and maintain, to the benefit of all Parties and in compliance with this Agreement a TSO Common System.
- 5.4.2.** The TSO Common System calculates in a first phase the Available Interconnection Capacity based on the ATC Based Capacity Calculation Method.
- 5.4.3.** TSOs shall jointly put at disposal, operate and maintain to the benefit of all Parties the TSO Common System.

- 5.4.4.** TSOs shall jointly ensure maintenance of the TSO Common System in compliance with the MC Requirements as mentioned in Paragraph 5.2.

Paragraph 5.5 - INDIVIDUAL PX COMPONENTS

- 5.5.1.** Each PX shall individually ensure that, at the latest as of the ATC Based Launch Date its own systems (including the necessary backup copies of them), business processes and products concerned by or involved in the Market Coupling as well as its own systems or mechanisms needed for Cross PX Clearing enable the Market Coupling in compliance with this Agreement.
- 5.5.2.** In particular, each PX shall, in case this is necessary, adapt its products, Market Rules, systems, Physical Links and Interfaces and processes concerned by or involved in the Market Coupling, in order to:
- (a) send anonymous data from its order book to the Market Coupling System;
 - (b) receive the Market Coupling Results and ensure the local conclusion of electricity contracts between market participants in compliance with the Market Coupling Results; and
 - (c) publish the preliminary and final Market Coupling Results.
- 5.5.3.** Each PX shall ensure maintenance of its Individual PX Components in compliance with the MC Requirements as mentioned in Paragraph 5.2.

Paragraph 5.6 - INDIVIDUAL TSO COMPONENTS

- 5.6.1.** Each TSO shall ensure individually that, at the latest as of the ATC Based Launch Date its own systems (including the necessary backup copies of them), business processes and products concerned by or involved in the Market Coupling enable the Market Coupling in compliance with this Agreement.
- 5.6.2.** In particular, each TSO shall, in case this is necessary, adapt its systems, adapt its relevant contractual framework falling within its authority, request the necessary changes to the relevant regulatory and contractual framework falling outside its authority and adapt its business processes necessary for the Market Coupling, in order to be able to:
- (a) send the network data necessary for defining the Available Interconnection Capacity to the TSO Common System;
 - (b) put at the disposal of the PXs the Physical Transmission Rights, by sending the Programming Authorisations, for energy flows resulting from the Market Coupling in exchange of the Congestion Revenue, as specified in Paragraph 6.2.5.1;
 - (c) receive and process nominations after the Market Coupling.
- 5.6.3.** Each TSO shall ensure maintenance of the Individual TSO Components in compliance with the MC Requirements as mentioned in Paragraph 0

Article 6 - DAILY OPERATIONS

Paragraph 6.1- GENERAL PRINCIPLES

- 6.1.1.** As the daily operation of the Market Coupling is dependent on data exchange between the different Components, the Parties shall operate the Components in accordance with this Article, comply strictly with the Operational Procedures referred to in this Article 6 and further developed in Annex 8; and take all actions necessary to duly implement this Article 6.
- 6.1.2.** The responsibilities of each Party in respect of data exchange and transmission are further set forth in Annex 8.
- 6.1.3.** Ad hoc Operational Procedures may be established by the Steering Committee to determine how the Parties shall act on specific days or in specific circumstances.
- 6.1.4.** The Parties shall establish an Operational Calendar indicating which Party is responsible for the performance of the operational tasks as mentioned in the Operational Calendar and for what moment in time exactly (Annex 9).

Paragraph 6.2 - NORMAL PROCEDURE

6.2.1. Introductory principle

In Normal Circumstances, the Parties shall perform Market Coupling on a daily basis in accordance with the provisions in this Paragraph 6.2.

6.2.2. Available Interconnection Capacity Calculation

The TSOs (or their subcontractors) shall jointly calculate, aggregate and communicate to the PXs the Available Interconnection Capacity on a daily basis and in accordance with the procedure described in Annex 8. This Available Interconnection Capacity shall be made available to the PXs according to the conditions as defined in Article 7 on firmness.

6.2.3. Market Coupling Result calculation and validation

- 6.2.3.1.** PXs shall proceed to the calculation of the Market Coupling Results taking into account the Available Interconnection Capacity communicated by the TSOs.
- 6.2.3.2.** The calculated PX Net Positions shall subsequently be subject to validation by the TSOs in accordance with the procedure described in Annex 8. While awaiting such a validation, PXs may

publish preliminary Market Coupling Results it being understood that TSOs will not be held liable for any damage arising from the use of those preliminary results.

6.2.4. Publication of the final Market Coupling Results

6.2.4.1. As soon as the PX Net Positions have been validated by the TSOs, the Parties shall publish final Market Coupling Results and perform the actions requested as described in detail in procedure described in Annex 8, after the publication of the final Market Coupling Results.

6.2.5. Cross Border Nominations

6.2.5.1. The TSOs shall provide the Physical Transmission Rights and Programming Authorizations to the PXs. The TSOs have jointly designated an entity to act in this process as described in Paragraph 6.2.5.2 and 6.2.5.3. and specified in Subsidiary Agreements or other agreements.

6.2.5.2. By means of the TSO Common System, this entity shall on behalf of the TSOs and on a daily basis,

- (a) calculate the Physical Transmission Rights;
- (b) make available the Physical Transmission Rights as calculated in accordance with the PX Net Positions to the respective PX;
- (c) send the Programming Authorisations in accordance with the procedure described in Annex 8.

The modalities of making available the Physical Transmission Rights and sending the Programming Authorisations are further organised in Subsidiary Agreements or other agreements.

6.2.5.3. Each PX ensures that the Programming Authorisations it received from the entity designated by the TSOs are provided to its designated CCP. Each PX shall request the designated CCP to perform the Cross Border Nominations to the respective TSOs in accordance with the Programming Authorisations and according to the procedure in Annex 8.

6.2.6. Cross PX Clearing and pay out of Congestion Revenue

6.2.6.1. PXs undertake to organise Cross PX Clearing, by means of the intervention of the CCP designated to perform the clearing and settlement of the transactions concluded on their respective trading platforms.

6.2.6.2. Therefore, PXs shall take the necessary arrangements between themselves and/or the designated CCP to (among others):

- (a) jointly agree on a procedure for the execution of the financial and physical settlements between themselves and/or the designated CCPs; and
- (b) jointly select and agree on a bank to facilitate financial settlement of transactions between the designated CCPs.

- (c) taking into account the necessary procedures concerning the technical management of Rounding Energy as provided in Annex 14.
- 6.2.6.3. Each PX shall make the necessary contractual arrangements authorising and instructing its designated CCP to pay out the collected Congestion Revenue directly to the entity designated by the TSOs. The modalities of the collection of Congestion Revenue in return, are organised in Subsidiary Agreements or other agreements.
- 6.2.6.4. The PXs shall take necessary contractual arrangements for the pay out of the Congestion Revenue in cases of negative prices. Each PX shall request its designated CCP to ensure that the system of each designated CCP is designed in a way so as to allow the handling of negative prices.
- 6.2.6.5. In case a PX and the CCP it designated are separate legal entities, the Parties acknowledge that this PX shall not be liable for the payment of the Congestion Revenue to the entity designated by the TSOs. In case a PX and the CCP it designated are not separate legal entities, the Parties acknowledge that only such PX may be held liable for the pay out of the Congestion Revenue.
- 6.2.6.6. The TSOs agree that each of the designated CCPs shall be relieved from its payment obligation in respect of the Congestion Revenue as soon as the Congestion Revenue is received on the bank account designated by the TSOs. For the avoidance of doubt, each TSO shall remain the sole owner of its share of the Congestion Revenue.
- 6.2.6.7. Each TSO shall make the necessary contractual arrangements authorising and instructing the designated entity of the TSOs to receive and validate the collected Congestion Revenue directly from the designated CCPs.
- 6.2.6.8. Each TSO and its respective CCP shall make the necessary contractual arrangements with respect to the financial, technical and physical management of Rounding Energy in accordance with Annex 14.

Paragraph 6.3 – BACK-UP PROCEDURE

- 6.3.1.** In case of Back-Up Circumstances, the Parties shall comply with the Back-Up Procedure(s) in Annex 8 in order to recover from a failure of the indicated process step in the Normal Procedure.

Paragraph 6.4 - FALL BACK PROCEDURES

- 6.4.1.** In case of Fall Back Circumstances, the Parties shall comply with the Fall Back Procedures in Annex 8.
- 6.4.2.** TSOs shall jointly make the necessary contractual arrangements to organise the allocation of Available Interconnection Capacity in Fall Back Circumstances.

Article 7 - FIRMNESS

In the process of transferring energy between market participants across borders, the TSOs shall accept Cross Border Nominations on day ahead according to Paragraph 6.2.5, subject to potential curtailment on the day of delivery for exceptional reasons, meaning reasons of security of supply and/or Force Majeure.

TSOs shall ensure that capacities are firm as stipulated in applicable regulation as the case may be.

PXs and/or the CCPs shall not be subject to any financial damages or benefits regarding imbalance settlement by TSOs due to any imbalance created by such curtailment. The TSOs are not obliged to pay any other indemnification towards the PXs and/or the CCPs in the aforementioned cases of curtailment.

Article 8 - CHANGES

Paragraph 8.1 - GENERAL PRINCIPLES

- 8.1.1.** The Steering Committee shall decide on the final approval of changes or decisions on issues related to change requests under the Change Control Procedure.
- 8.1.2.** Changes shall be financed according to the principles set forth in Article 12 unless decided otherwise in writing by the Steering Committee.
- 8.1.3.** A Party or subset of Parties may request a change to a Component that serves only its/their own benefit. In such a case, the other Parties shall facilitate the implementation of the required change provided that:
 - (a) the requesting Party/subset of Parties shall pay the other Parties for the costs related to such change. In case the request is from a subset of Parties, this subset of Parties shall agree on the sharing between themselves of the costs related to such changes in a specific agreement; and
 - (b) following the application of the Change Control Procedure, the Steering Committee shall agree unanimously on the modalities of implementation of the required change; and
 - (c) the requested change has no impact to the other Parties.
- 8.1.4.** In case the benefit of a change issued and implemented according to Paragraph 8.1.3 is extended to more or all Parties in a later stage, the newly benefiting Parties shall participate in the cost sharing on a pro rata basis with the Parties who had paid for the change to reflect the benefits enjoyed. Parties shall agree in good faith on the sharing key for such costs.

Paragraph 8.2 - MARKET COUPLING WITH OTHER AREAS, OUTSIDE MRC

- 8.2.1.** Parties of this Agreement entering into implementation of another market coupling with other area(s) shall inform the other Parties no later than six (6) months before the planned effective launch.

8.2.2. The other Parties are entitled to receive the necessary information reasonably required in order to verify that their legitimate interests are not harmed and to evaluate the possible impacts on the Market Coupling organized under this Agreement.

Parties shall use their Best Efforts to identify mutually acceptable solutions in due time without harming the existing Market Coupling.

Article 9 - SIMULATION FACILITY

9.1.1. The PXs shall, as a service accessory to the performance of the Market Coupling, jointly provide the TSOs with the Simulation Facility Services described in Annex 12 with a view to allowing them to use the Simulation Facility as described in this Annex.

9.1.2. The Simulation Facility (including the data contained in it) is made available as such for TSOs' use as set forth in Annex 12 and does not constitute any form of advice, recommendation, representation or endorsement on the part of the PXs. The PXs shall not be responsible for any business decision taken by a TSO that is based on a simulation performed with the Simulation Facility.

9.1.3. Historical data made available via the Simulation Facility and any simulation results produced with the market data used are commercially sensitive information and are deemed Confidential Information. Any use of the historical market data available via the simulation facility services for purposes other than simulation is strictly forbidden. No download by TSOs of the historical market data included in the simulation facility services shall be possible.

9.1.4. The simulation facility services shall take into account the data from all Parties. All Parties undertake to provide free of charge their historical data to enable such simulation facility services. Any output of the simulations can be freely used by TSOs in their TSO business and published by any Party.

9.1.5. Except otherwise set out in this Agreement, no representation, warranty or indemnity, expressed or implied, statutory or otherwise, whether as to correctness, accuracy, quality, fitness for purpose, non-infringement or any other matter, is given or assumed by the PXs in respect of the Simulation Facility, the historical data contained in it and the simulations performed with it.

9.1.6. In particular, and without prejudice to the generality of Paragraph 9.1.4, no guarantee is given by the PXs for:

- (a) an uninterrupted access to the Simulation Facility; and
- (b) the absence of viruses and similar computer software code designed to disrupt or disable TSOs ability to access the Simulation Facility or their operations.

- 9.1.7.** Since use of and access to the Simulation Facility depends on third parties (e.g. telecommunication carriers) whose performance is outside PXs' control, PXs disclaim all liability for direct or indirect damages arising from the failure of the transmission or receipt or corruption of the simulation results or data (or part of them) due to (i) causes beyond the reasonable control of the PXs or (ii) causes which are not reasonably foreseeable by the PXs, including but not limited to interruption or failure of communication or digital transmission links and internet slowdowns or failures.
- 9.1.8.** Paragraph 9.1.4 and Paragraph 9.1.5 shall not apply in case of fraud or intentional corruption or disruption of access or injection of viruses by the PXs.

Article 10 - INTELLECTUAL PROPERTY RIGHTS

Paragraph 10.1 - GENERAL PRINCIPLES

10.1.1. Joint Parties' Developments

- 10.1.1.1. All works, documentation and information elaborated by the Parties jointly or on their joint behalf, in the framework of this Agreement, whether prior to or after entry into this Agreement (hereafter "Joint Parties' Developments") shall as of their creation be jointly owned by all Parties and all (Intellectual) Property Rights, interests and title in respect to them shall be vested with all the Parties to the fullest extent possible under applicable law.
- 10.1.1.2. As co-owner each Party is entitled to use the Joint Parties' Developments as if it were the sole owner of it for internal business purposes only, without prejudice to the confidentiality obligations set in Article 15. A Party may only use Joint Parties' Development for business purposes outside the scope of the Market Coupling provided that it obtained the prior written consent of all the other co-owners.
- 10.1.1.3. Ownership rights of Joint Parties' Developments may be transferred to Parties' affiliated companies subject to the prior written consent of all Parties, which shall not be unreasonably withheld.

10.1.2. Joint TSO Components/Joint PX Components

- 10.1.2.1. Ownership over, title to or interest in the Joint TSO Components or to the Joint PX Components respectively shall be governed by the Subsidiary Agreements entered into between the TSOs and between the PXs respectively.

Nothing in this Agreement shall be understood as a transfer of ownership, title or interest on the Joint TSO Components to the PXs and the PXs shall not benefit from any right on the Joint TSO Components.

Nothing in this Agreement shall be understood as a transfer of ownership, title to or interest in the Joint PX Components to the TSOs and the TSOs shall not benefit from any right on the Joint PX Components, except as indicated in Paragraph 10.2.

10.1.3. Simulation Facility

- 10.1.3.1. The TSOs acknowledge that the PXs jointly own as co-owners the Simulation Facility and the Intellectual Property Rights pertaining to it. Nothing in this Agreement shall be understood as a transfer of ownership, title to or interest in the Simulation Facility to the TSOs and they shall not benefit from any right to the Simulation Facility.
- 10.1.3.2. The PXs hereby grant to each TSO for the term it is bound by this Agreement a non-exclusive, non-sub-licensable, non-transferable license within the control area(s) to access and use, for internal purposes, the Simulation Facility (including the historical data contained in it) as described in Annex 12.

10.1.4. Individual PX/TSO Components

Each Party shall remain the sole owner of the Individual PX Components or TSO Components and the other Parties shall not have any rights on such Individual PX Components or TSO Components.

10.1.5. Data

- 10.1.5.1. Confidential Information disclosed in the framework of this Agreement shall remain the exclusive property of the Party(ies) from which it emanates and this Agreement shall not be construed as providing any (Intellectual) Property Rights or any other rights, title to or interest in the Confidential Information to the Party receiving Confidential Information.
- 10.1.5.2. Exchange market data, i.e. data relating to the bids or contracts of participants of PXs, the supply and demand curves, anonymous block order lists, the market clearing price and market clearing volume and related indices, historical data contained in the Simulation Facility shall remain the exclusive property of the PXs concerned. This Agreement shall not be construed as providing any (Intellectual) Property Rights or any other rights, title or interest to the TSOs.
- 10.1.5.3. Data generated by the TSOs in respect of available Cross-Zonal Capacities (and optional Allocation Constraints) remain the exclusive property of the TSOs concerned.

Paragraph 10.2 - TSO LICENSE

- 10.2.1.** Upon entry into force of this Agreement in accordance with principles set in Paragraph 19.1, the PXs shall grant each TSO, on its request and against payment of a license fee, a Minimal License or an Extended License. This will be in respect of the terms and conditions set forth in the standard contract form for the Minimal License, respectively for the Extended License attached as Annex

11. It will be subject to the conclusion by such TSO of this standard contract for the Minimal License respectively for the Extended License.

10.2.2. TSOs having purchased the Minimal License or not having purchased any license at the time of entry into force of this Agreement may at any time purchase the Extended License or the Minimal License at the price indicated in the standard contract form for the Minimal License respectively for the Extended License attached as Annex 11.

10.2.3. Such License will provide for disclosure of the Confidential Information, under strict conditions of confidentiality and such information may only be used for TSO internal purposes, which shall include but not be limited to further developments.

Article 11 - GOVERNANCE

Paragraph 11.1 - GENERAL PRINCIPLES

11.1.1. The governance of the Market Coupling shall be carried out by the Parties by means of a Steering Committee. The Steering Committee shall be empowered to discuss and decide on any matter related to the implementation, operation and adaptation of this Agreement and any other matter for which it is expressly made competent pursuant to any other provision of this Agreement.

11.1.2. Decisions of the Steering Committee shall be binding on all Parties under the terms of the Rules of Internal Order of the Steering Committee.

11.1.3. The Steering Committee shall be supported, in accordance with the provisions of the Rules of Internal Order of the Steering Committee, by any other committee or working group as decided by the Steering Committee. The Steering Committee determines the composition and the modalities of the functioning of such committee or working group. Annex 4 includes Rules of Internal Order of the Steering Committee.

Paragraph 11.2 - COMPOSITION AND MEETINGS OF THE STEERING COMMITTEE

11.2.1. All Parties are entitled to participate to and vote in the Steering Committee. To this effect, each Party shall designate one (1) voting representative and shall ensure that its Steering Committee voting representative has all necessary powers and authority to take decisions binding upon its company on all items of the agenda.

11.2.2. Each Party shall be duly represented, with respect to each meeting of the Steering Committee.

11.2.3. The meetings of the Steering Committee shall be co-chaired by one representative from the PXs and one representative from the TSOs. The co-chairmanship of the meetings of the Steering Committee shall be rotating on a yearly basis.

11.2.4. Meetings shall be organised in accordance with the Rules of Internal Order of the Steering Committee.

Paragraph 11.3 - STEERING COMMITTEE DECISION MAKING RULES AND RECORDING

11.3.1. The Steering Committee shall be quorate when all Parties entitled to vote on a particular decision are represented according to the principles set forth in the Rules of Internal Order of the Steering Committee. The Steering Committee is deemed quorate also in case a Party is excused due to exceptional circumstances under the Rules of Internal Order of the Steering Committee, if the Party cannot participate via web/skype means.

11.3.2. Decisions of the Steering Committee are, unless otherwise provided in this Agreement, taken by unanimous consent of the voting members of the Steering Committee in accordance with the decision-making process rules in the Rules of Internal Order of the Steering Committee.

11.3.3. The Steering Committee Secretary shall record the decisions of the Steering Committee and communicate them to each Party, which shall be considered sufficient proof of the decisions to which it relates.

Article 12 - REMUNERATION AND COST RECOVERY

Paragraph 12.1 GENERAL PRINCIPLES

12.1.1. Cost sharing of any further design and implementation costs shall be supported by the Parties benefiting from the change, guaranteeing objective and fair criteria for their redistribution among the concerned Parties. The Steering Committee may decide to consider certain costs as common costs, to be then shared by all the Parties on an equal basis, except provided otherwise by the Steering Committee.

If the costs are based on a service agreement with an external party, all Parties benefiting of this service and party to this service agreement (subject to the approval of this external party) are supporting these costs; they shall be shared amongst the relevant Parties according to the sharing key, payment and invoicing terms set forth in such service agreement.

12.1.2. Modalities of the implementation of cost recovery at the local level shall be set forth in the relevant Subsidiary Arrangements between the corresponding PX and TSOs, subject to approval or comfort by competent authorities if applicable, or in local NRAs' decision.

Paragraph 12.2 - INDIVIDUAL AND JOINT TSO COSTS

12.2.1. Each TSO shall recover its own individual costs arising under this Agreement (such as local operation and maintenance costs related to the Market Coupling, e.g.) at its local level.

12.2.2. TSOs shall recover joint TSO costs arising under this Agreement (such as operation and maintenance costs of the TSO Common System, e.g.) by way of a sharing key to be agreed upon in a Subsidiary Agreement between the relevant TSOs as under Annex 3.

Paragraph 12.3 - PX' COSTS RELATED TO THE OPERATIONS AND MAINTENANCE OF THE WB6 MARKET COUPLING

12.3.1. Each PX shall recover its own individual costs related to operations and maintenance of the Market Coupling from the TSOs. Each PX shall recover its costs under Paragraph 12.2.1 and its share of the costs under Paragraph 12.2.2 by way of Subsidiary Agreements with its corresponding TSO(s) as under Annex 3.

12.3.2. PXs shall recover joint PX costs arising under this Agreement (such as maintenance of the MC System, e.g.) by way of a sharing key to be agreed upon in a Subsidiary Agreement between the PXs as under Annex 3.

Paragraph 12.4 - CROSS PX CLEARING COSTS

12.4.1. The TSOs recognise that, with regard to their tasks in Cross PX Clearing, the PXs and/or CCPs will incur costs related to the use of their infrastructure or services necessary for the performance of their respective tasks related to the Cross PX Clearing.

12.4.2. Costs under Paragraph 12.3 shall be invoiced by the PXs and/or the CCPs to the entity designated by the TSOs. TSOs shall agree with their designated entity on a sharing key in a specific agreement. This agreement shall stipulate that these costs will be reimbursed to the CCPs by their designated entity, on behalf of the TSOs.

12.4.3. TSOs commit to reimburse or not to bill the CCP for the costs incurred in case of subscribing to specific contracts between the CCP and the relevant TSO(s) (specific agreement and/or balance responsible party contract) necessary to perform the Cross Border Nominations for the Market Coupling (such as costs of collaterals, membership fees, costs for bank guarantees, e.g.).

Paragraph 12.5 - PX OR CCP COSTS RELATED TO OTHER SERVICES

12.5.1. If the Parties make the necessary contractual arrangements with third party related to the data storage according the High Level Functional Architecture, they have to foresee a burden sharing (Annex 8).

12.5.2. Costs of operations and maintenance of the Simulation Facility incurred by the PXs shall be reimbursed by direct invoicing by the concerned PX(s) of the subscribing TSO(s) according to a share determined by total costs divided by the number of subscribers.

12.5.3. TSOs shall be entitled to request from PXs any justification of the costs charged under Paragraph 12.4.1 and Paragraph 12.4.2 at any time.

Paragraph 12.6 - NON RECOVERABLE COSTS & OTHER AD-HOC COSTS

The recovery mechanism and cost sharing of costs related to the operation of the Market Coupling not falling under the costs categories listed under Paragraph 12.1 to Paragraph 12.5 shall be decided on a case-by-case and ad hoc basis, by the Steering Committee. In the decision process, the Steering Committee may decide that the ad hoc cost falls within the TSO or PX categories, in which case the corresponding Paragraph is applicable for its recovery, or that they are non-recoverable (e.g. meeting costs, travel costs).

Paragraph 12.7 - APPROVAL BY REGULATORS

12.7.1. For the avoidance of doubt, each Party acknowledges that the recovery of the costs under this Article 12 is subject to the endorsement or approval of the competent national regulator if those costs are subject to any national regulatory validation process.

12.7.2. In case of non-approval or non-endorsement of the costs under this Article 12, either *post-factum* or for the future, by a competent national regulator, the involved Parties shall seek to find a solution, for the involved TSO(s) and PX(s), at the local level, under the terms and conditions of the relevant Subsidiary Agreement or of any other agreement.

12.7.3. In case of non-approval or non-endorsement for the future of the costs under Paragraph 12.4, by a competent national regulator, this case shall be considered as Hardship, consequently the Parties shall apply the procedure as under Paragraph 18.4.

12.7.4. When identifying the solution mentioned in Paragraph 12.6.2 and Paragraph 12.6.3, the involved Parties shall seek to mitigate costs.

Paragraph 12.8 - COST RECOVERY IMPLEMENTATION AT THE LOCAL LEVEL

The modalities of the implementation of cost recovery at the local level shall be set forth in the relevant Subsidiary Agreement(s) or in any other agreement. In case of contradiction with this Agreement, the terms of the Subsidiary Agreement(s) or of the other agreement regarding cost recovery shall prevail over Article 12.

Article 13 - EXTERNAL COMMUNICATION

Paragraph 13.1 - SCOPE OF APPLICATION

13.1.1. Without prejudice to (i) Article 20 and (iii) Commission Regulation (EU) No 543/2013 of 14 June 2013 on submission and publication of data in electricity markets, the principles under this Article 13 shall apply to external communication in all forms relating to any subject in the framework of this Agreement or related to Market Coupling, without prejudice to the confidentiality obligations under Article 15.

13.1.2. The Parties may deviate from the principles under this Article 13 only if necessary to comply with applicable mandatory laws and regulations.

Paragraph 13.2 - GENERAL PRINCIPLES

13.2.1. The Parties shall be free to express written or oral positions or opinions about all Market Coupling related matters in their own name, provided they do not prejudice or negatively affect the collective and/or individual interests or the reputation of the other Parties.

13.2.2. The Parties shall not express positions or opinions in the name of one or more other Party(ies) unless they have been explicitly mandated to do so in writing.

13.2.3. The Parties shall communicate at all times correct and accurate information.

13.2.4. A Party, intending to communicate on results of simulations performed individually or with other parties and for which Confidential Information is used, shall, prior to such communication, have the consent of the Parties to whom the Confidential Information, contributing to the results of the simulation, belongs. Such consent shall not be unreasonably withheld or delayed.

13.2.5. In the event a communication by a Party does not comply with this Article, the other Parties are entitled to request such Party to publicly correct its communication, without prejudice to any other rights or remedies under this Agreement or by law (such as but not limited to its right to claim compensation in accordance with Article 16). Upon receipt of such valid request, such Party shall forthwith correct its communication publicly in accordance with the request.

Paragraph 13.3 - JOINT COMMUNICATION

13.3.1. The Steering Committee shall decide on the channel via which joint communications are made to the public and to the market participants. Each joint communication shall bear the logo of each Party or a common Market Coupling logo, if available. Joint communications shall only take place after formal approval by the Steering Committee of the content of the communication. The Parties shall also agree, for any joint communication, on the date and hour at which the joint communication is effective.

13.3.2. The Parties shall communicate jointly on, at least, the following events:

- (a) reporting on major incidents (Annex 8);
- (b) operation suspensions or interruptions;
- (c) content of this Agreement that must be disclosed to the public;
- (d) market coupling with other areas;
- (e) exit of Parties;
- (f) termination;
- (g) Market Coupling launch; and
- (h) other major changes or events for which a joint communication is judged necessary by the Steering Committee.

13.3.3. A Party may communicate individually to third parties on the issues which are subject to joint communication as mentioned under Paragraph 13.3 after Steering Committee approval of the content thereof.

Paragraph 13.4 - OPERATIONAL DATA COMMUNICATION

The Parties shall publish operational data regarding Market Coupling, for which content, format, communication channel and frequency have been agreed upon with the competent regulatory authority. The undertaking by a Party to publish operational data is additional to any publication obligation under local laws or regulations to which a Party may be subject.

Paragraph 13.5 - WEBSITE

The Parties may decide to develop a common website for the general public. In such case, one Party shall be appointed by the other Parties for maintenance and registration of the domain name. The content of the common website shall be explicitly approved by all the Parties. The Steering Committee shall follow the development and maintenance of the common website, as well as shall decide the cost-sharing of the website.

Article 14 – REGULATORY RELATIONS WITH COMPETENT AUTHORITIES

14.1.1. The Parties shall cooperate to respond as adequately, consistently and soon as possible to any information request issued by a competent authority (administrative, judicial or other) in relation to this Agreement or to Market Coupling when such information request relates to more Parties than the addressed Party. A Party shall assist the addressed Party and provide it with information upon its request to the extent reasonably necessary for the latter to respond to such a competent authority's request.

14.1.2. Each Party shall, to the extent possible, before providing the information addressing the information request mentioned in Paragraph 14.1.1, ensure that the following conditions are fulfilled:

- (a) the request is in writing or confirmed in written form;
- (b) the request is duly motivated and the request is based on a well identified legal basis;

- (c) the scope of the requested information is clearly identified/defined; and
- (d) the information requested is necessary for the purpose of the enquiry.

14.1.3. In case a Party receives an information request of a competent authority as under Paragraph 14.1.1, it shall, to the extent possible, prior to any communication of information:

- (a) narrow down the scope of information provided to the authorities as much as possible to fulfil the regulatory request and in compliance with the legal framework applicable to the inquiry;
- (b) inform the relevant other Parties of it as soon as reasonably possible of the existence, scope, terms and circumstances of the request (provided it is not prohibited to do so by law or Market Rules);
- (c) explain to the relevant other Parties the circumstances, the content and the consequences of the information request and of the information to be provided in accordance with a);
- (d) explain to the relevant other Parties the competence of the authority to request the information; and
- (e) to the extent the information to be communicated concerns Confidential Information:
 - (i) consult the concerned Party(ies) on the advisability of taking legal steps to resist or narrow the request; and
 - (ii) obtain an order or a reliable assurance, from the requesting authority, that the Confidential Information will be treated confidentially.

Except if prior written consent causes restriction on compliance with applicable mandatory law or with legally justified orders or information requests of a competent authority, a Party shall not provide proprietary data of another Party without prior written consent of this other Party, such consent not being unreasonably withheld.

14.1.4. Should the competent authority wish to publish the information, the Parties to which the information relates (depending on the request) shall provide the authority with a non-confidential version of the information for this publication purpose.

Article 15 - CONFIDENTIALITY

Paragraph 15.1 - CONFIDENTIAL INFORMATION

15.1.1. The term “Confidential Information” under this Agreement shall mean any information whether or not marked as confidential, exchanged between the Parties in relation to this Agreement or to the Market Coupling, as well as the content of this Agreement.

Paragraph 15.2 - NON DISCLOSURE OF CONFIDENTIAL INFORMATION

15.2.1. A Party shall not:

- (a) disclose, convey or transfer Confidential Information without the prior written explicit consent of the Party(ies) from which the information emanates, such consent not unreasonably to be withheld or delayed;

- (b) use the Confidential Information for any other purpose than that of the Market Coupling (unless such other use is explicitly authorised by the Party(ies) from which the information emanates in prior written form);
- (c) copy or reproduce the Confidential Information except as strictly necessary for the purpose of the Market Coupling; and
- (d) share or disclose the Confidential Information with any person, entity, affiliate, etc. other than the Parties.

15.2.2. By derogation to Paragraph 15.2.1, a Party may disclose the Confidential Information in the following limited exceptional situations:

- (a) in the event the information was known to it prior to the disclosure, with no breach of confidentiality obligation;
- (b) in the event the information is already in the public domain, with no fault or negligence of the Party wishing to disclose;
- (c) In the event the disclosure is required by law or by a competent authority, provided in the latter case that the conditions of Article 14 are fulfilled; and
- (d) In the event of disclosure to its directors, members of management, officers, employees, designated entities under this Agreement, subcontractors, agents, lawyers, professional advisors, external consultants, insurers, financiers provided that such persons:
 - (i) have a definite need to know the information for the purpose of executing an assignment related to the Market Coupling and only to the extent strictly necessary for the performance of this assignment;
 - (ii) is informed by the Party wishing to disclose of the confidential nature of the Confidential Information; and
 - (iii) is bound to respect the confidential nature of the Confidential Information under terms at least equivalent to those under this Agreement.

15.2.3. A Party shall:

- (a) immediately notify in writing to the Party(ies) from which the information emanates any unauthorised disclosure of the Confidential Information of which it had knowledge and for which disclosure it is responsible. In such a case, this Party shall take all reasonable steps to mitigate any harmful effect of the unauthorised disclosure;
- (b) at the first written request of the Party(ies) from which the information emanates, immediately, and in any case no later than three Business Days after the reception of the written request return and/or destroy all Confidential Information disclosed by the latter Party;
- (c) indemnify the Party(ies) from which the information emanates in accordance with this Article and Article 15.4.

15.2.4. Each Party shall take all necessary and appropriate measures and procedures to enforce and maintain the protection of Confidential Information and to prevent any disclosure of it.

Paragraph 15.3 - RETURN OR DESTRUCTION OF CONFIDENTIAL INFORMATION

In case of termination of this Agreement, exit or exclusion of a Party, the concerned Party(ies) shall return the Confidential Information to the Party(ies) from which the Confidential Information emanates or have

it destroyed. In case of destruction, the Parties shall give the concerned Party(ies) sufficient proof of the destruction of the Confidential Information.

Paragraph 15.4 - BREACH OF CONFIDENTIALITY

15.4.1. In case of breach, by a Party, of any of its obligations under this Article, that Party shall pay a fixed lump sum **sum XYZ** € per breach to the affected Party(ies). The lump sum **XYZ** € shall be shared equally between the Parties affected by the breach of confidentiality.

15.4.2. A Party, able to prove higher damages than the sum it will receive after sharing the lump sum of **XYZ** € under Paragraph 15.4.1 may claim further indemnification, subject to the liability limitations in Paragraph 16.3.

15.4.3. The Parties acknowledge that indemnification may not be an adequate remedy for any breach of this Article. The Party(ies) from which the information emanates shall be entitled to the remedy of injunction, specific performance and other equitable or similar relief for any threatened or actual breach of this Article and no proof of special damages shall be necessary for the enforcement of this Paragraph 15.4.3.

Article 16 - LIABILITY

Paragraph 16.1 - SCOPE OF APPLICATION

The principles of liability defined in this Article shall apply to all damage occurring after the Launch Date for the Market Coupling.

Paragraph 16.2 - NO JOINT AND SEVERAL LIABILITY

16.2.1. Except otherwise stipulated in this Agreement, each Party is liable for its own commitments only and Parties shall not bear joint and several liability.

16.2.2. This principle shall also be applicable in case of commitments jointly undertaken by the Parties or a subset of them, it being understood however and for the avoidance of doubt, that in such circumstances:

- (a) a proven breach of a jointly undertaken commitment, irrespective of any division of tasks between the Parties jointly undertaking the commitment, constitutes a breach by each of the Parties jointly undertaking that commitment; and
- (b) any indemnification due as a result of such claim(s), shall be divided in equal parts between the Parties having jointly undertaken the concerned joint commitment and each of such Parties shall only be held to pay such part to the claiming Party(ies). No single Party can be held to pay the whole amount for the other Parties having jointly undertaken the

concerned commitment and it is up to the Parties having jointly undertaken the concerned commitment to organise recovery between them, by way of Subsidiary Agreement or other agreements.

Paragraph 16.3 - SCOPE OF LIABILITY BETWEEN THE PARTIES

- 16.3.1.** For the avoidance of doubt, the provisions of this Paragraph 16.3 shall apply to all cases of liability between the Parties in the context of Market Coupling for any reason whatsoever (contractual, extra-contractual or otherwise), either in relation to this Agreement and/or to Subsidiary Agreements.
- 16.3.2.** In case of liability of a Party under this Agreement, the other Parties shall be entitled to claim compensation from this Defaulting Party for any and all losses, damages, charges, fees or expenses, expected and unexpected, which can be considered as a direct damage arising out, or resulting from a default or negligence in the context of this Agreement.
- 16.3.3.** The Parties shall not be held liable for any indirect, immaterial, incidental or consequential damages such as loss of revenues (including, without limitation, loss of Congestion Revenues, loss of opportunity, etc.).
- 16.3.4.** Except in the event of fraud or intentional breach, the indemnification obligations of each Defaulting Party shall at all times for any negligence and default (including in the event of gross negligence and gross default) be limited to an amount of XYZ € per year, irrespective of the number of breaches and the number of Parties suffering damages.
- 16.3.5.** If the sum of all damages exceeds the amount of the liability limitation in Paragraph 16.3.4, the compensation payable to the Party(ies) suffering damages shall be reduced pro rata.
- 16.3.6.** If a Subsidiary Agreement or a local agreement provides operational procedures and liability provisions related to a specific obligation thereof, only the relevant Subsidiary Agreement or a local agreement shall apply in case of a breach of such specific obligation.

Paragraph 16.4 - MITIGATION OBLIGATION

The Defaulting Party(ies) and the Party(ies) suffering damages shall mitigate damages occurring, in particular, but not limited to, damages towards market participants.

For the avoidance of doubt, to the extent that no obligation under the Agreement and its Procedures has been breached, decoupling and application of fallback procedures shall not be considered as a breach of the present Agreement.

Paragraph 16.5 - THIRD PARTY CLAIMS

16.5.1. In case a Party receives a claim for damages suffered by a third party and resulting directly or indirectly from the execution of this Agreement, it shall:

- (a) notify promptly the other Party(ies) in writing of any such claim or of any matters in respect of which such third party claim may apply and keep them informed of the proceedings; and
- (b) fully cooperate with the Defaulting Party in such response and defence as reasonably required.

16.5.2. If a Subsidiary Agreement or a local agreement provides operational procedures and liability provisions related to a specific obligation thereof related to a third party claim, only the relevant Subsidiary Agreement or a local agreement shall apply in this case.

16.5.3. In case the third party claim is based on mere contractual fault, and causing a mere contractual damage, in the framework of an agreement between this third party and the defendant Party, the indemnification obligation(s) of the Defaulting Party towards the defendant Party shall at all times for any default or negligence (including in case of gross negligence and gross default) be limited, to the cap mentioned in Paragraph 16.3.3 except in the event of fraud or intentional breach.

16.5.4. The financial cap mentioned in Paragraph 16.5.2 shall not be applicable between the Parties in case the third party claim is based on tort.

16.5.5. The Defaulting Party shall hold harmless the defendant Party from and against the third party claim brought against the defendant Party as specified under Paragraph 16.5.2 and Paragraph 16.5.4.

16.5.6. The alleged Defaulting Party shall be obliged to join any discussions or dispute settlement procedure (whether amicable, judicial or arbitral) following a third party claim and its right of defence shall be duly observed.

16.5.7. The defendant Party shall not approve any proposed settlement without the agreement of the Defaulting Party. This agreement shall not be unreasonably withheld, conditioned or delayed.

Paragraph 16.6 - SUBROGATION

16.6.1. The alleged Defaulting Party shall be entitled to subrogate its insurance company to its rights and obligations under this Agreement against the defendant Party, who, by signing this Agreement, is deemed to agree with this subrogation.

Article 17 - FORCE MAJEURE

17.1. No Party shall be liable for delay or failure in fulfilling its obligations under this Agreement or non-compliance with this Agreement if the delay, failure or non-compliance result(s) from Force

Majeure. The obligations of the Party(ies) invoking Force Majeure that are affected by the Force Majeure shall be suspended for the period during which the Force Majeure lasts.

- 17.2.** Upon occurrence of Force Majeure, the Party(ies) invoking Force Majeure shall notify orally or by email the other Parties of it as soon as practicably possible, to be confirmed by registered letter as soon as possible. The oral notice or the email shall, to the extent possible, and, in any event, the confirmation by registered letter, contain a description of the event constituting Force Majeure, of the obligations it can no longer perform and of the probable duration of this event of Force Majeure.
- 17.3.** The Party(ies) invoking Force Majeure shall take all measures which may reasonably be required to resume the performance of its (their) obligations under this Agreement as quickly as practicably possible.
- 17.4.** The Parties shall, if necessary, jointly examine the measures to be taken to limit the effect of Force Majeure.
- 17.5.** If Force Majeure continues for **two (2)** consecutive months following the registered letter under Paragraph 17.2, the Party (or the subset of Parties) that has invoked Force Majeure shall be entitled to exit from this Agreement (under the terms and conditions of Article 20) upon a three (3) months prior notice period to be notified in writing and provided that it demonstrates that:
- (a) the event of Force Majeure invoked in the registered letter under Paragraph 17.2 affects the performance by it of its obligations under this Agreement which are to be considered as essential obligations under this Agreement (such as e.g. but not limited to, the essential activities listed in Paragraph 4.6.3); and
 - (b) it has taken all reasonable measures to remedy such Force Majeure but it is impossible to remedy it.
- 17.6.** If a Party having invoked an event of Force Majeure to suspend the performance of its obligations continues to invoke this event of Force Majeure for more than two (2) consecutive months following the registered letter under Paragraph 17.2, the other Parties shall be entitled to request the exclusion of that Party from this Agreement (under the terms and conditions of Article 21) upon a three (3) months prior notice period.

Article 18 - AGREEMENT MODIFICATIONS

Paragraph 18.1 - GENERAL PRINCIPLES

- 18.1.1.** The Agreement's or Annexes' amendment or modification requires the written signature of all Parties to be effective and binding.

18.1.2. The Steering Committee shall be entitled to change the Annexes to this Agreement, by following the Change Control Procedure (Annex 7).

18.1.3. The Steering Committee Secretary shall communicate any decided new version of an Annex to the Parties.

18.1.4. The Steering Committee is entitled to propose to the Parties amendments to this Agreement and to its Annexes.

Paragraph 18.2 - MODIFICATIONS DUE TO REGULATORY REASONS

18.2.1. In case measures and/or decisions (including modification of laws and regulations) of competent public authority require amendment or modification of this Agreement or of any other document influencing this Agreement, any affected Party(ies) by this measure and/or decision may send a request for modification of this Agreement to the other Parties, as under Paragraph 18.4.

18.2.2. The Parties shall examine as soon as possible the possibilities/conditions for the amendment or modification of this Agreement due to regulatory reasons.

18.2.3. The Parties may refuse to make the necessary amendments to this Agreement due to regulatory reasons on reasonable grounds only.

Paragraph 18.3 - MODIFICATIONS DUE TO HARDSHIP

18.3.1. The Party(ies) affected by Hardship may send a request for modification of this Agreement to the other Parties, in accordance with Paragraph 18.4.

18.3.2. Under this Agreement shall not be considered as Hardship, changes to the legal or the regulatory framework applicable to the Parties or decisions of competent administrative/regulatory authorities.

18.3.3. The Parties shall seek to adjust the conditions of this Agreement to re-establish the initial contractual equilibrium while protecting the interests of all the Parties.

Paragraph 18.4 – PROCEDURE – REQUEST FOR MODIFICATION AND CONSEQUENCES

18.4.1. The Party affected by event(s) under regulatory decisions or hardship, including for the event under Paragraph 12.9.4 shall send a request for modification to the other Parties mentioning:

- (a) the provisions of the Agreement that are subject to modification;
- (b) the reason why such modification is necessary (including the demonstration that the conditions are fulfilled); and

(c) a proposal of modification of the concerned provisions.

18.4.2. The request for modification shall contain a meeting request. At the latest ten (10) Business Days after receipt of the request for modification, the Parties shall consult each other to find an agreement on the required modifications. The Parties shall negotiate any modification taking into account the principles of cooperation as defined in Article 4 and Article 18 of this Agreement.

18.4.3. Negotiations shall be deemed to have failed in case:

(a) the Steering Committee decides it; or

(b) the Parties fail to reach an agreement within six (6) months following the receipt of the request for modification.

In such a case, the dispute resolution principles under Article 22 will apply.

Article 19 - ENTRY INTO FORCE AND TERMINATION

Paragraph 19.1 - ENTRY INTO FORCE

19.1.1. This Agreement shall enter into force as of the MC Launch Date provided it has been validly signed by each of the Parties. For the purpose of this Agreement, the Agreement is validly signed when and if the designated notary, Mr. X, receives the last signed signatory page, as scanned and sent by email to the notary, Mr. X, by the last Party signing this Agreement.

19.1.2. This Agreement is concluded for an indefinite period of time.

Paragraph 19.2 - TERMINATION

19.2.1. This Agreement may be terminated at any time by written agreement of all Parties, without any court intervention and without any compensation being due (to the exception of payment of remaining payment obligations under this Agreement). In case of termination, the Steering Committee shall decide on the implementation of the termination.

In doing so, it shall favour a progressive termination (if possible) and it shall duly inform the market participants and consult the competent regulatory authorities to the extent required by national law. To the extent required by national law, termination shall not take effect as long as all relevant regulatory authorisations have not been obtained.

19.2.2. This Agreement shall be terminated under a concurrent order of all relevant regulatory authorities. In case of termination, the Steering Committee shall decide on the implementation of the termination. In doing so, it shall favour a progressive termination (if possible) and it shall duly inform the market participants.

Paragraph 19.3 - SURVIVAL CLAUSE

19.3.1. The protection of confidentiality granted under Article 15 shall terminate five (5) years from the date of termination of this Agreement.

Article 20 - EXIT

Paragraph 20.1 - EVENTS AND CONDITIONS

20.1.1. One or more Party(ies) may exit from this Agreement under the following circumstances and upon the following conditions:

- (a) for no specific motive upon a twelve (12) months prior written notice by registered letter;
- (b) in the event of Force Majeure subject to Paragraph 17.1.7;
- (c) in the event of Hardship, in case of failure to reach an agreement with regard to the modification of the Agreement according to Paragraph 18.4.3 (b), subject to a three (3) months prior written notice by registered letter;
- (d) in the event of change due to regulatory reasons, in case of failure to reach an agreement with regard to the modification of the Agreement according to Paragraph 18.4.3 (b), subject to a three (3) months prior written notice by registered letter;
- (e) in the event of bankruptcy or any other insolvency proceeding (to the extent compatible with applicable law), dissolution or liquidation of such Party upon one (1) month prior written notice by registered letter; and
- (f) in the event of an order of competent regulatory, administrative or judicial authorities to end the participation of a Party to the Market Coupling upon a twelve (12) months prior written notice (or shorter if required by that authority).

Paragraph 20.2 - CONSEQUENCES IN TERMS OF RIGHTS AND OBLIGATIONS

20.2.1. During the notice period mentioned under Paragraph 20.1, the Parties shall remain entitled to all rights and bound by all obligations deriving from this Agreement and the Subsidiary Agreements.

20.2.2. In case of exit by a PX or a TSO, the TSO(s) or PX on the same Hub is also entitled to exit at the same Exit Date as the exiting PX or TSO, subject to a confirmation of such exit by the TSO(s) or PX on the same Hub to the other Parties by notice via registered letter.

20.2.3. The Exit Date shall be the date at which the exit of a Party enters into effect as a consequence of which such Party will no longer be bound by the Agreement, except the survival clauses under this Agreement.

20.2.4. The Parties shall mitigate the damages caused by the exit as much as possible.

20.2.5. The exiting Party shall, in accordance with the exit plan under Paragraph 20.3.2, assist the remaining Parties to enable continuity of the Market Coupling and to enable migration of the services it performs or the documentation/information it provides.

20.2.6. The exiting Party shall in no event object to the solutions implemented by the remaining Parties to ensure the continuity of the Market Coupling, including the granting of rights on any joint asset to any new party appointed to take over the services performed by the Exiting Party.

20.2.7. During the notice period, the exiting Party shall have the right to vote on all matters having financial impact on itself and/or all of other committees. For other matters, the exiting Party shall not be entitled to vote unless the Steering Committee decides otherwise or unless the vote has consequences over the exiting Party.

Paragraph 20.3 - PROCEDURE

20.3.1. As soon as the event giving rise to exit occurs, the exiting Party(ies) shall notify the other Parties of it by registered letter. In case of an order of a competent regulatory, administrative or judicial body, the notification shall be done immediately following receipt of such order.

20.3.2. The Steering Committee shall define an exit plan, including estimate of the costs and taking into account the consequences of the exit, including the following:

- (a) assessment of the changes needed for pursuing the Market Coupling without the exiting Party(ies);
- (b) continuity of the Market Coupling shall be ensured as reasonably as possible; and
- (c) exit shall be as smooth as possible, entailing as least as possible disruptions for the remaining Parties;
- (d) assessment of cost related to such Exit and recovery thereof;
- (e) the concrete date on which the Exit shall become effective, according to the abovementioned timescales.

Paragraph 20.4 - SURVIVAL CLAUSE

20.4.1. The confidentiality obligations under Article 15 shall bind the exiting Party for five (5) years after the Exit Date of that Party.

Article 21 - EXCLUSION

Paragraph 21.1 - GENERAL CONDITIONS

21.1.1. The Parties may request the exclusion of one (or more) Party(ies) from this Agreement in case:

- (a) of material breach by such Party(ies) of this Agreement or of any other agreement in the framework of this Agreement affecting the other Parties and subsequent failure for the breaching Party(ies) to remedy the failure within a reasonable period of time;

- (b) of behaviour of such Party(ies) significantly damaging the functioning of the Market Coupling or significantly prejudicing the interest of all Parties in connection with the Market Coupling and subsequent failure by the Defaulting Party(ies) to adapt its(their) behaviour within a reasonable period of time;
- (c) such Party has no longer the necessary authorisations/licenses for the performance of the Market Coupling: if the Party is a PX, loss of its PX designation(s); if the Party is a TSO, loss of its TSO certification, license or authorisation;
- (d) of bankruptcy or any other insolvency proceeding (to the extent compatible with applicable law), dissolution or liquidation of such Party.;
- (e) of Force Majeure subject to Paragraph 17.1.7.

For the purpose of this Agreement, a material breach by a Party of its commitment is a breach by it of any obligation under this Agreement, which is so substantial that it defeats the purpose of the Parties in concluding the Agreement, such as but not limited to, breach of the principles of cooperation, the repetitive and not remedied non-compliance with the agreed Operational Procedures within the agreed timeframes due to which Market Coupling cannot take place on a given day, breach of confidentiality obligations and violation of the Intellectual Property Rights of the Party(ies).

21.1.2. The Defaulting Party shall take part in the deliberations in front of the Steering Committee, and may bring defence without however taking part in the voting.

21.1.3. The Steering Committee shall decide whether or not to exclude the Defaulting Party. In case of exclusion, it shall define an exclusion plan, addressing the same issues as those set forth for the exit plan mentioned under Paragraph 20.3.2. Any dispute related to this Article shall be settled according to Paragraph 22.3.

Paragraph 21.2 - CONSEQUENCES IN TERMS OF RIGHTS AND OBLIGATIONS

21.2.1. The Parties shall remain bound by all rights and obligations deriving from this Agreement until the date of effective exclusion.

21.2.2. In case of exclusion of a PX or a TSO, the corresponding TSO/PX is entitled to exit at the same date as that of effective exclusion of the excluded PX/TSO, subject to a confirmation of such exit of the corresponding TSO/PX to the other Parties by notice via registered letter.

21.2.3. The Parties shall mitigate the damages caused by the exclusion as much as possible.

21.2.4. The Parties shall cooperate to find solutions ensuring the continuity of the Market Coupling and its future developments.

21.2.5. The excluded Party shall assist the remaining Parties to enable continuity of the Market Coupling and to enable migration of the services it performs or the documentation/information it provides in accordance with the exclusion plan under Paragraph 21.1.3.

21.2.6. The excluded Party shall in no event object to the solutions implemented by the remaining Parties to ensure the continuity of the Market Coupling.

21.2.7. During the notice period, the exiting Party shall have the right to vote on all matters having financial impact on itself and/or all matters related to daily operations on the agenda of the Steering Committee or of other committees. For other matters, the exiting Party shall not be entitled to vote unless the Steering Committee decides otherwise or unless the vote has consequences over the exiting Party.

Paragraph 21.3 - SURVIVAL CLAUSE

The confidentiality obligations under Article 15 shall bind the excluded Party for five (5) years after the Exit Date of that Party.

Article 22 – DISPUTE RESOLUTION

Paragraph 22.1 - GENERAL PRINCIPLES

22.1.1. Any dispute arising under, in connection to or in the framework of this Agreement shall be subject to this Article 22. Any dispute arising under, in connection to or in the framework of this Agreement and at the same time under, in connection to or in the framework of a Subsidiary Agreement and/or of other agreements shall be first handled between the Parties to the Subsidiary Agreement and/or to the other agreements.

22.1.2. Any dispute arising under, in connection to or in the framework of this Agreement and at the same time under, in connection to or in the framework of a Subsidiary Agreement and/or of other agreements shall promptly be notified by the involved Party(ies) to the Steering Committee.

22.1.3. Any dispute arising between one or more Parties shall be submitted by the most diligent Party to dispute settlement in accordance with this Article 22 by sending a request for dispute resolution to the other Parties mentioning:

- (a) the alleged event triggering the dispute resolution clause;
- (b) the Party(ies) responsible for this event;
- (c) if possible, the provisions of this Agreement or of any other agreement in the framework of this Agreement, which have allegedly been breached; and
- (d) if possible, a first estimate of the damage as the case may be.

Paragraph 22.2 - AMICABLE SETTLEMENT

22.2.1. The concerned Parties shall use their Best Efforts to settle the disputes arising under or in the framework of this Agreement by way of an amicable settlement within the Amicable Dispute Resolution Period during which:

- (a) The concerned Parties shall, during a period of two (2) months (or such other period as agreed upon in writing by the Parties) try to achieve an amicable settlement within the Steering Committee. The Steering Committee will declare and notify all Parties officially in writing of the beginning, the expected duration and the end of the Amicable Dispute Resolution Period. As soon as a Party requests amicable settlement, it shall not notify a request for exit during the Amicable Dispute Resolution Period;
- (b) In the event the Steering Committee fails to achieve an amicable settlement within the period mentioned under a), the dispute shall be escalated to the CEOs of each Party who will try to achieve an amicable settlement within a new period of two (2) months. The Steering Committee will declare and notify all Parties officially in writing of the beginning, the expected duration and the end of the Amicable Dispute Resolution Period. As soon as a Party requests amicable settlement, it shall not notify a request for exit during the Amicable Dispute Resolution Period.

22.2.2. During the Amicable Dispute Resolution Period, a concerned Party may at any time, request to revert to mediation by one external independent highly estimated mediator (certified, if available), with experience in the electricity sector and/or the ICT sector and who will abide by the European Code of Conduct for Mediators. Each concerned Party is entitled to propose a mediator fulfilling the mentioned conditions and the final mediator shall be chosen by unanimity of the concerned Parties. The Parties will pay the mediator fees and expenses in an equal proportion, unless otherwise agreed.

22.2.3. The Steering Committee or the CEOs may hear and/or appoint technical experts provided that they are bound by confidentiality obligations at least equivalent to those in this Agreement.

22.2.4. During the Amicable Dispute Resolution Period, the Steering Committee and the CEOs respectively shall:

- (a) assess the facts;
- (b) in case of damage:
 - (i) estimate the damage (and its nature and extent);
 - (ii) determine which Party(ies) suffered the damage;
 - (i) determine which Party(ies) is(are) liable for the damage;
 - (ii) determine the extent and modalities of indemnification;
- (c) Assess the interests of the Parties in light of the objectives of this Agreement;
- (d) Formulate a proposal for settlement or solution.

22.2.5. Any amicable settlement reached shall only be effective and binding for the Parties to it, provided it is laid down into a binding written settlement contract, signed by the Parties participating in the concerned amicable settlement.

22.2.6. During the Amicable Dispute Resolution Period, the Parties are entitled to apply injunctive relief in summary proceedings.

Paragraph 22.3 - ARBITRATION

22.3.1. In case no amicable settlement between the Parties is reached at the end of the Amicable Dispute Resolution Period, the dispute shall be settled by arbitration according to the rules of a party organizing arbitration at the request of the most diligent Party.

22.3.2. The place of arbitration shall be XYZ

22.3.3. The language of the arbitration proceedings shall be English.

22.3.4. The number of arbitrators shall be XYZ. At least one of the appointed arbitrators shall have a strong legal background. At least one of the appointed arbitrators shall have a strong technical background in the energy sector and/or in the Information and Communication Technologies sector. All appointed arbitrators shall preferably be familiar with the applicable sector specific legislations and regulations.

22.3.5. During arbitration proceedings, the Parties are entitled to apply injunctive relief in summary proceedings.

22.3.6. The Parties acknowledge that this Agreement, the Subsidiary Agreements and other agreements present such close links that, should separate dispute procedures be followed in their respects, there would be a high risk of contradiction between several courts/arbitral tribunals.

22.3.7. Without prejudice to the general principle of contractual relativity, in order to facilitate the comprehensive resolution of related disputes, the Parties agree to the following cumulative terms:

- (a) the Parties have included and shall maintain in the Subsidiary Agreements and in the other agreements arbitration provisions identical to and mirroring those included in this Agreement;
- (b) the Parties expressly agree that disputes within the scope of this Agreement between the same Parties may be consolidated in one single arbitration. The party organizing arbitration will be asked to take a decision within one (1) month of request for consolidation, and order consolidation of the disputes if such serves the interest of justice and efficiency;
- (c) in case a dispute arises out of this Agreement, the Parties agree that related disputes with other Parties to this Agreement or related disputes between the Parties (or of one of them) and one or several co-contractors, subcontractors, agents, etc. of the Parties (or of one of them) within the Subsidiary Agreements and/or the other agreements may be joined with the dispute arising out of this Agreement, and the Parties consent to the joinder of the parties to these agreements in the arbitration, it being understood that:
 - (i) such joinder shall be requested by the Party(ies) in a duly motivated request for joinder within the arbitration of such co-contractors, subcontractors, agents, etc., issued before

the signature or approval by the ICC court of arbitration of the terms of references of the arbitration initiated between the Parties;

- (ii) the party organizing arbitration will be asked to take a decision within a month of such request, and order joinder of the disputes if such serves the interest of justice and efficiency.

22.3.8. Symmetrically, if a dispute arises out of the Subsidiary Agreements and/or out of the other agreements, a Party to this Agreement who has been attracted in such arbitration may obtain that a related dispute with another Party to this Agreement be joined to the initial arbitration under the same conditions as expressed under Paragraph 22.3.7 (c).

22.3.9. If the party organizing arbitration so decides, all Parties to this Agreement consent, to the competency of the first appointed arbitral tribunal to handle the joined or consolidated proceedings, and to the jurisdiction of such existing arbitral tribunal on parties joined or consolidated to the proceedings.

22.3.10. The award of the arbitration shall be final and binding to the involved Parties participating in the concerned arbitration proceedings.

22.3.11. For the purpose of this Paragraph 22.3, disputes are deemed to be related where they are so closely connected that it is expedient to hear and determine them together to avoid the risk of irreconcilable judgments resulting from separate proceedings.

Article 23 - MISCELLANEOUS

Paragraph 23.1 - NOTICES

23.1.1. As a rule, notices required under this Agreement shall be served in writing (either by registered letter, courier, regular mail, fax or email) and in English to the persons indicated in Annex 2, unless expressly otherwise provided in this Agreement.

23.1.2. By derogations to the Paragraph 23.1.1, notices in case of urgent situation may be delivered by phone/mail, it being understood that such notice shall be re-confirmed in writing as soon as possible.

23.1.3. Service of notices shall be deemed effective:

- (a) by email: at the time/date when the email sent by the sender is indicated as delivered to the recipient or when the recipient acknowledges the receipt of it.
- (b) by Registered Letter or Courier: at the time/date when the mail sent by the sender is delivered as evidenced by the receipt.

23.1.4. In case notice is received on a Business Day after 5 PM CET or on a day which is not a Business Day, the notice is deemed given and effective on the first following Business Day.

Paragraph 23.2 - SEVERABILITY

23.2.1. Without prejudice to Paragraph 18.2, in case one or more provisions of this Agreement is/are declared invalid, illegal or unenforceable under any applicable law or public policy, the validity, legality and enforceability of the remaining provisions of this Agreement shall not be affected and they shall remain in full force and effect as long as the economic or legal substance of this Agreement is not affected.

23.2.2. The Parties shall as soon as possible negotiate a legally valid replacement provision with the same economic effect as the invalid/illegal/unenforceable provision.

Paragraph 23.3 - NON WAIVER

The failure or delay of any Party to exercise any right or remedy under this Agreement shall not be considered as a final waiver of it.

Paragraph 23.4 - LANGUAGE OF THE AGREEMENT

The language of this Agreement shall be [English]. Any exchange or notice in the framework of this Agreement shall be made in [English].

Paragraph 23.5 - GOVERNING LAW

This Agreement is governed by and construed in all its aspects (including, but not limited to, the conclusion, coming into force and proof of this Agreement) in accordance with the laws of ... , without regard to the conflict of law principles of it.

Paragraph 23.6 - ASSIGNMENT AND LEGAL SUCCESSION

23.6.1. Rights and obligations under this Agreement shall be transferable to a legal successor by way of universal legal succession without prior written consent of the Parties.

23.6.2. Assignment of rights and/or obligations other than by way of universal legal succession to another party shall be subject to the prior written consent of all Parties, which consent shall not be unreasonably withheld, conditioned or delayed.

23.6.3. This Agreement shall be binding upon and inure to the benefit of the Parties and their permitted assignees and/or their legal successors.

23.6.4. In the event a Change of Control of a Party occurs, this Party shall, as soon as reasonably possible (taking into account the confidential and sensitive nature of such transactions), notify in writing the other Parties of it.

Paragraph 23.7 - REMEDIES PROVIDED BY LAW

The rights and obligations under this Agreement are cumulative and not exclusive of any rights or remedies provided by law.

Paragraph 23.8 – INTERPRETATION

23.8.1. No provision of this Agreement shall be interpreted adversely against a Party solely because that Party was responsible for drafting that particular provision.

23.8.2. The headings of Articles, (sub)Paragraphs or Annexes are inserted for convenience only and do not affect their interpretation.

23.8.3. Any reference to any rule, enactment, statutory provision, regulation or code or any subdivision or provision of it shall be construed at the particular time as a reference to the text then in force, as it may have been amended, modified, consolidated, re-enacted or replaced.

23.8.4. All references to Articles or Annexes refer to the corresponding Articles or Annexes of this Agreement as amended, supplemented or modified from time to time, in accordance with Article 18 unless otherwise specified.

Paragraph 23.9 – PROOF OF THE AGREEMENT

The bundled original version of this Agreement, signed by the Parties, stamped and kept by the notary Mr. XYZ, or a certified copy of such bundled original, shall be used to prove the existence and the content of this Agreement.

LIST OF ANNEXES as referred to in the GFA

Annex 1	DEFINITIONS
Annex 2	PARTIES' CONTRACTUAL CONTACT DETAILS
Annex 3	SUBSIDIARY AND OTHER SPECIFIC CONTRACTS OVERVIEW LIST OF SUBSIDIARY AGREEMENTS
Annex 4	RULES OF INTERNAL ORDER OF THE STEERING COMMITTEE
Annex 5	MC REQUIREMENTS INCLUDING HLFA, ALGORITHM AND EXTERNAL INTERFACE REQUIREMENTS
Annex 6	LIST OF COMPONENTS
Annex 7	CHANGE CONTROL PROCEDURE
Annex 8	PROCEDURES: <ul style="list-style-type: none">• GLOSSARY• RECEPTION AND INTEGRATION OF ATC VALUES IN THE MC SYSTEM• TRANSFER OF CALCULATION RESULTS AND VALIDATIONS BETWEEN PX TRADING SYSTEMS, MC SYSTEM AND TSO COMMON SYSTEM• TRANSFER OF ATC VALUES FROM TSO COMMON SYSTEM TO MC SYSTEM• RECEPTION OF THE AGGREGATED ORDER FROM PX SYSTEMS TO MC SYSTEM• MC CALCULATION INCL. CHECK AND TRANSFER ROUNDED PRICES• NET POSITIONS VALIDATION BY TSO COMMON SYSTEM• CONNECTION TO THE GUI AND TRANSFER OF FINAL PRICES AND NET POSITIONS FROM MC SYSTEM• INCIDENT INVESTIGATION• TRANSFER OF DATA FROM MC SYSTEM TO BOTH CROSS PX CLEARING SYSTEMS AND TRANSFER OF CROSS BORDER TSO EXCHANGES (PROGRAMMING AUTHORIZATIONS) FROM TSO COMMON SYSTEM TO CROSS PX CLEARING SYSTEMS• HUB AND CROSS-BORDER NOMINATIONS PERFORMED BY THE CCPS• INCIDENT COMMITTEE PROCEDURE• COMMUNICATION TO MARKET PARTICIPANTS• LONG CLOCK CHANGE• MC SYSTEM SWITCH AND POSSIBLY RESET OF THE MC SYSTEM
Annex 9	TEMPLATE OPERATIONAL CALENDAR AND TEMPLATE CONTACT DETAILS
Annex 10	LIST OF OPERATIONAL DATA TO PUBLISH
Annex 11	LICENSE AGREEMENTS
Annex 12	SIMULATION FACILITY SERVICES
Annex 13	CHANGE CONTROL PROCEDURE APPLICATION
Annex 14	MANAGEMENT OF THE MC ROUNDING ENERGY

Annexes

General Framework Agreement organizing the Day Ahead Market Coupling between and

December 2018

LIST OF ANNEXES AS REFERRED TO IN THE GENERAL FRAMEWORK AGREEMENT

- Annex 1** DEFINITIONS
- Annex 2** PARTIES' CONTRACTUAL CONTACT DETAILS
- Annex 3** SUBSIDIARY AND OTHER SPECIFIC CONTRACTS OVERVIEW
LIST OF SUBSIDIARY AGREEMENTS
- Annex 4** RULES OF INTERNAL ORDER
RIO OF THE STEERING COMMITTEE
RIO OF THE OPERATIONS COMMITTEE
- Annex 5** MC REQUIREMENTS including HLFA, Algorithm and external interface requirements
- Annex 6** LIST OF COMPONENTS
- Annex 7** CHANGE CONTROL PROCEDURE
- Annex 8** PROCEDURES:
 - GLOSSARY
 - RECEPTION AND INTEGRATION OF ATC VALUES IN THE MC SYSTEM
 - TRANSFER OF CALCULATION RESULTS AND VALIDATIONS BETWEEN PX TRADING SYSTEMS, MC SYSTEM AND TSO COMMON SYSTEM
 - TRANSFER OF ATC VALUES FROM TSO COMMON SYSTEM TO MC SYSTEM
 - RECEPTION OF THE AGGREGATED ORDER FROM PX SYSTEMS TO MC SYSTEM
 - MC CALCULATION incl. CHECK AND TRANSFER ROUNDED PRICES
 - NET POSITIONS VALIDATION BY TSO COMMON SYSTEM
 - CONNECTION TO THE GUI and TRANSFER OF FINAL PRICES AND NET POSITIONS FROM MC SYSTEM
 - INCIDENT INVESTIGATION
 - TRANSFER OF DATA FROM MC SYSTEM TO BOTH CROSS PX CLEARING SYSTEMS and TRANSFER OF CROSS BORDER TSO EXCHANGES (PROGRAMMING AUTHORIZATIONS) FROM TSO COMMON SYSTEM TO CROSS PX CLEARING SYSTEMS
 - HUB AND CROSS-BORDER NOMINATIONS PERFORMED BY THE CCPS
 - INCIDENT COMMITTEE PROCEDURE
 - COMMUNICATION TO MARKET PARTICIPANTS
 - LONG CLOCK CHANGE
 - MC SYSTEM SWITCH AND POSSIBLY RESET OF THE MC SYSTEM
- Annex 9** TEMPLATE OPERATIONAL CALENDAR AND TEMPLATE CONTACT DETAILS
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- Annex 13** CHANGE CONTROL PROCEDURE APPLICATION
- Annex 14** MANAGEMENT OF THE MC ROUNDING ENERGY

Annex 1. Definitions

Agreement:	this General Framework Agreement, including its Annexes;
Algorithm:	refers to Algorithm described in Annex 5;
Algorithm Requirements:	the requirements regarding Algorithm as agreed upon by the Parties and set forth in <u>Annex 5</u> ;
Allocation or Allocate:	the process by which a Physical Transmission Right is attributed as a result of the Market Coupling to the concerned CCP via the PX;
Amicable Dispute Resolution Period:	the period for amicable settlement, in accordance with <u>Article 22</u> of this Agreement, of disputes arising under or in connexion with this Agreement, which shall not exceed four (4) months (unless decided otherwise by the Parties) as under <u>Article 22</u> of this Agreement;
Annex:	any document attached to this Agreement, which forms an integral part of this Agreement;
Article:	any article of this Agreement, including its Paragraphs and sub-Paragraphs;
ATC Based Capacity Calculation Method:	coordinated method applied by the TSOs in order to define the ATC, compatible with security standards applicable in all Hubs, which will be allocated through the Market Coupling;
ATC Based Launch Date:	the date of launch of the ATC Based Market Coupling as decided by the Steering Committee ;
ATC Based Master Test Plan:	the document jointly approved by all the Parties, aiming at giving a clear and complete view on the test approach, the schedule, the activities, the deliverables and the launch criteria related to these deliverables to assure readiness of all Parties to launch ATC Based Market Coupling, to be delivered in the testing of the ATC Based Market Coupling before the ATC Based Launch Date;
ATC Based Market Coupling :	the Market Coupling using coordinated ATC values;
Available Transfer Capacity ("ATC"):	part of the NTC made available by the TSOs to the Market Coupling;
Available Interconnection Capacity:	means ATC for ATC Based Market Coupling;
Back Up Circumstances:	operational circumstances in which failure on a particular process step occurs, requiring the application of a Backup Procedure to recover such failure for this particular process step;
Back up Procedure ("BUP"):	the procedure attached in <u>Annex 8</u> describing the actions to be taken during the Market Coupling operations by the Parties or the entity(ies) designated by them in the event Backup Circumstances occur;
Best Efforts:	the obligation for a Party to take, in the performance of its commitments under this Agreement, all reasonable actions and measures and more generally doing everything that may reasonably be expected from a normal, diligent and reasonable professional placed in the same circumstances;
Business Day:	means a day on which banks located in all the respective places of the registered office of the Parties concerned are open for normal banking business;

Central Counter Party ("CCP"):	this is an entity (not a subcontractor) designated by each PX;
CEO:	chief executive officer, empowered to represent a Party;
Change Control Administrator:	The person responsible for the central management and administration of changes under the Change Control Procedure, as designated under the terms and conditions of Section 1.2 of the Change Control Procedure;
Change Control Procedure:	the procedure set forth in <u>Annex 7</u> of this Agreement;
Change of Control:	Direct or indirect merger and/or acquisition by a third party of: <ul style="list-style-type: none"> a) shareholding and/or holding of voting rights; b) holding of any other right permitting to direct or control the operations; or c) any decision making bodies that manage the business of a Party;
Components:	the whole set of different information and communication technology systems (software and hardware), interfaces between these systems set forth in <u>Annex 6</u> of this Agreement, which are necessary for the functioning of the Market Coupling;
Component List:	the list of Components set forth in <u>Annex 6</u> of the Agreement;
Confidential Information:	shall have the meaning set forth in <u>Paragraph 15.1.1</u> of this Agreement;
Congestion	means a situation where the sum of day-ahead implicit demand for capacity exceeds the daily Available Interconnection Capacity;
Congestion Revenue:	the revenue arising from the implicit auctioning of the Available Interconnection Capacity in case of Congestion;
XXX Executable Software:	the industrialised software, application or computer program in executable form, used by the Market Coupling System in which the algorithm is implemented;
XXX Executable Software Documentation:	the supporting documentation, and information necessary to use the XXX Executable Software as appended to the Minimal and Extended License Agreement;
Critical Deadline:	the latest possible time for the transmission of an information according to the operational procedures as set forth in <u>Annex 8</u> ;
Cross Border Exchange:	the cross border electricity flow resulting specifically from the Market Coupling;
Cross Border Nomination:	In the event of Cross Border Exchange, the exchange declaration to be sent by the designated CCP to one of the two TSOs concerned by such Cross Border Exchange, indicating the power, expressed in MW, which it wishes to exchange at a specific border in a given direction for each hourly period of a given day. A Cross Border Nomination shall correspond to the received Programming Authorisation;
Cross PX Clearing:	The physical balancing and financial clearing of the Cross Border Exchanges resulting from the Market Coupling, as defined in Paragraph 6.2.6 of this Agreement;

Cross PX Clearing Systems:	Module developed by the PXs to receive and to treat the PA which will be transferred to the CCP System after their treatment in the system;
Market Coupling:	the coordinated mechanism implemented by the Parties in the Region in accordance with the terms and conditions of this Agreement, whereby the supply and demand curves of different PXs are matched by the PXs taking into account the relevant network constraints as provided by the TSOs;
Market Coupling Project:	the project during which the design , the development and the implementation of the Market Coupling took place;
TSO Common System:	the system to be made available jointly by TSOs consisting in: <ul style="list-style-type: none"> • Pre-Coupling Function: calculating Available Interconnection Capacity on the basis of grid forecasts delivered by each TSO; • Post-Coupling Functions: <ul style="list-style-type: none"> • net position validation: verifying, on the one hand, that the PX Net Positions calculated by the MC System are compatible with Available Interconnection Capacity as determined by the Pre-Coupling Function; and • bilateral exchange calculation: calculating, on the other hand, cross border data flows resulting from the previously determined net positions. • Communication Layer: the software and protocols allowing the TSO Common System to interact with other systems.
Defaulting Party:	a Party not fulfilling one or more of its obligations under this Agreement;
Defendant Party:	shall have the meaning as set forth in <u>Paragraph 16.5</u> of this Agreement;
Design Phase:	the phase of the Market Coupling Project during which the Parties have established the high level architecture and business process of Market Coupling, have analysed and decided upon the different options for market coupling algorithms, possible organisation and governance structures and during which the TSOs have analysed the possible ATC network representations;
European Code of Conduct for Mediators:	the code of conduct for mediators, as developed with the assistance of the European Commission, available on the website of the European Commission;
Exit Date:	date at which the exit of a Party under <u>Article 20</u> enters into effect;
Extended License Agreement:	is the license agreement as attached in <u>Annex 12, Chapter 12.2</u> ;
Fall Back Circumstances:	operational circumstances in which an incident occurs that cannot be remedied through the Back Up Procedure and in which the Parties shall revert to the application of the Fall Back Procedure;
Fall Back Procedures:	the procedures in <u>Annex 8</u> describing the actions to be taken during the Market Coupling operations by the Parties or the entity(ies) designated by them in the event Fall Back Circumstances occur;
Force Majeure:	any event or situation that is (i) not reasonably foreseeable, (ii) beyond the reasonable control of the affected Party, (iii) not due to the fault or negligence of the affected Party, (iv) which cannot reasonably be avoided or overcome, and (v) which makes it impossible for this Party to fulfil, temporarily or definitively, its obligations under this Agreement;
Full Decoupling:	the situation where no Market Coupling Results can be produced, leading to Fall Back Circumstances;

Framework Agreement:	means Agreement;
Hardship:	any extraordinary event or any extraordinary change of circumstances that is (i) independent of the will of the affected Party(ies); (ii) beyond the control of the affected Party(ies); (iii) unforeseeable at the time of conclusion of this Agreement, and (iv) which fundamentally and negatively affects for a substantial period of time, for the concerned Party(ies), the initial contractual equilibrium of this Agreement;
High Level Functional Architecture for Normal Mode and Fall Back Mode :	the high level description of systems and interfaces necessary for operating the Market Coupling for Normal Circumstances and Fall Back Circumstances set forth in <u>Annex 5</u> (Chapter 5.1 and 5.2) of this Agreement;
Hub:	a geographical area for which a single clearing price is calculated for each hour of the day;
ICC:	International Chamber of Commerce;
ICT:	information and communication technologies;
Implementation Phase:	the phase of the Market Coupling Project during which the Parties have developed all Components necessary for the implementation and for the functioning of Market Coupling;
Individual Component:	Component belonging to one of the Parties individually as described in <u>Paragraph 5.5.1</u> and <u>Paragraph 5.6.1</u> respectively;
Intellectual Property Rights (“IPR”):	means all existing and future, registered or unregistered, intellectual, industrialised, commercial and all other property and similar or related rights, title and interest including applications for the same, in the Region and/or elsewhere in the world, including but not limited to copyrights, neighbouring rights, portrait rights, moral rights, sui generis database rights, models and design rights and all other possible rights in the field of literature, arts and science, rights to patents or patent applications, topography rights, rights to know-how or trade secrets, and all other rights on intellectual creations in the field of technology, trademarks, trade names rights to statutory and commercial denominations, domain names and all other possible rights to signs used in business to distinguish one good or service from another in trade;
Interface:	content and format of the information to be transferred;
IT:	Information technology;
Joint Parties’ Developments:	shall have the meaning set forth under <u>Paragraph 10.1.1.1</u> of this Agreement;
Joint PX Component:	shall have the meaning set forth in <u>Paragraph 5.3.1</u> of this Agreement;
Joint TSO Component:	shall have the meaning set forth in <u>Paragraph 5.4.1</u> of this Agreement;
Licensed Material:	the material licensed to the TSOs as the case may be and as defined in article 1.1 of the standard form for the Minimal License Agreement, respectively article 1.1 of the standard form for the Extended License Agreement as attached as Annex 12
Market Coupling Requirement; or MC Requirement:	the requirements with which Market Coupling must at all times comply, as set forth in the documents enumerated under <u>Paragraph 5.2.1.</u> of this Agreement;

Market Coupling Results:	the results, in the framework of the Market Coupling, calculated by the PXs consisting of, for each PX: <ul style="list-style-type: none"> - preliminary price, preliminary PX Net Position per hour per Hub; - winning block sets per Hub; - shadow price per hour per Hub; - rounded price, rounded net position per hour per Hub; - final price, final PX Net Position per hour per Hub; as described in the High Level Functional Architecture for Normal Mode (Chapter 5.1 of Annex 5);
Market Coupling System; or MC System:	the system (software and hardware) in which the XXX Executable Software is embedded and that interfaces with other IT systems involved in Market Coupling, in accordance with the requirements and specifications set forth in <u>Annex 5</u> of this Agreement;
Market Rules:	the terms and conditions regarding the organisation, the functioning and the access to a PX, governing the relationship between a PX and its members;
Minimal License:	the license described in the Minimal License Agreement;
Extended License:	the license described in the Extended License Agreement;
Minimal License Agreement:	is the license agreement as attached in <u>Annex 12</u> ;
MoU:	the memorandum of understanding signed by the Parties on the [Date] ;
MPLS:	multiprotocol label switching;
MPLS Cloud:	a mechanism in high performance telecommunications networks which directs and carries data from one network node to the next, thereby making it easy to create virtual links between distant nodes. It can encapsulate packets of various network protocols;
Normal Circumstances:	normal Market Coupling operational circumstances, during which no incident occurs;
Normal Procedure (“NOR”):	the procedure attached in Annex 8 describing the actions to be taken during the Market Coupling operations by the Parties or the entity(ies) designated by them in order to operate the Market Coupling under Normal Circumstances;
Net transfer capacity (“NTC”)	the maximum cross border exchanges between Hubs compatible with security standards applicable in both Hubs and taking into account the technical uncertainties on future network conditions;
Operational Calendar:	the calendar of operations determining responsibilities in time and submitted by the Parties within the deadlines and under the conditions as mentioned in Paragraph 6.1.4. of this Agreement;
Operational Procedures:	the procedures set forth in Article 6 of this Agreement and further developed in Annex 8 of this Agreement;
Paragraph:	any paragraph of this Agreement, including its sub-paragraphs;
Parties:	all the signatories of this Agreement, referred to collectively;
Party:	any of the signatories of this Agreement, referred to individually;
Physical Link:	hardware through which information passes in the event of data transmission;

Physical Transmission Right (“PTR”):	the right granted to a market participant under ATC Based Market Coupling to use a specified quantity of the ATC in the export direction, expressed in MW, for each hourly period of a given day. In the framework of the ATC Based CWE Market Coupling, the PTR is granted to the CCP through the local PX if applicable;
Price Coupling:	market coupling where the market clearing prices and PX Net Positions are determined in a single step;
Programming Authorisations (“PA”):	the total, for each TSO border, for each hourly period of a given day, of the Physical Transmission Rights granted to the CCP via the PX where applicable. The Programming Authorisation specifies clearly for each Physical Transmission Right the PX and/or the CCP concerned;
PX Net Position:	the rounded net position (i.e. total import or export) per hour per Hub for each of the PXs;
Roll Back Circumstances:	operational circumstance in which it is necessary to the revert to the systems and operational processes as described in Chapter 8.17 of Annex 8 ;
Rounding Energy:	shall have the meaning as provided in section 2 of Annex 15 ;
Rules of Internal Order (“RIO”):	the rules of internal order for the respective committees created under this Agreement as described in Annex 4 and in Chapter 8.15 (section 1.3) of Annex 8 ;
Shadow Auction System:	system that enables to organise explicit auctions for day ahead Capacity Allocation after Full Decoupling pursuant to the Fall Back Procedure set forth in Annex 8 ;
Simulation Facility:	a web based application embedding XXX Executable Software, which allows simulating market coupling sessions based on a mix of historical and artificial input data and also on the historical Market Coupling Results, and which allows reporting on the output of these simulations;
Simulation Facility Services:	The services described in Annex 13 of this Agreement;
Specific Agreements:	the agreements listed under Annex 3.2 of this Agreement;
Steering Committee (“SC”):	the committee referred to under Paragraph 11.1.1 of this Agreement;
Steering Committee Secretary (“SC Secretary”):	the secretary of the SC mentioned under Paragraph 11.1.3 of this Agreement and performing tasks as mentioned in the RIO of the SC;
Subsidiary Agreements:	the subsidiary agreements referred to under Paragraph 3.1 of this Agreement;

Annex 2. Contractual Contact Details

Firm	Address	Name of representative + Contact Details

Annex 3. LIST OF SUBSIDIARY AGREEMENTS

List showing related contracts that have been agreed on in the context of this Market Coupling Framework Agreement. List has to be finalized based on the Market Coupling design selected for each project.

Proposed form: Excel-file.

Contract Title	Parties involved		Subcontractors/Service providers	
	Party 1 (PX/TSO)	Party 1+n (PX/TSO)	Party 1	Party 1+n
All-Party Cooperation Agreement				
All-TSO Cooperation Agreement				
“serviced PX” agreement				
Agreement PX-TSO information agreement				
Joint TSO capacity calculation agreement				
Auction Rules				
CCP, PX and/or TSO shipping and nomination agreement				
Local agreement TSO-PX				
Hosting and support SLA – for common TSO system				
License agreement (limited or extended)				
Simulation Facility Services				
Clearing settlement cooperation agreement between PX and CCP				
.....				

Annex 4. RULES OF INTERNAL ORDER OF THE STEERING COMMITTEE

These Rules of Internal Order set forth the decision making process rules of the Steering Committee ("SC") under the Agreement. All capitalised terms not expressly defined herein shall be construed as defined in the Agreement.

1. Composition of the SC

1.1. Voting members

The official voting representative of each Party in the SC is designated in writing. The list of such voting representatives including their contact details are held by the Secretary.

A Party may change its voting representative in the SC provided such change is notified to the Secretary at least three (3) Business Days before the SC meeting that the new voting representative attends.

Each Party is, with respect to each meeting of the SC, duly represented either:

- by the voting representative (as designated by it in the conditions described above); or
- if the voting representative cannot attend a meeting of the SC, by any other person duly mandated and empowered to take decisions binding upon its company on all items of the agenda.

If a Party is unable to attend a SC meeting, such absent Party mandates the SC representative of another Party. In such case the absent Party:

- informs the Secretary at least three (3) Business Days before the SC meeting it cannot attend; and
- gives the name of the person representing the Party on its behalf.

In case the absent Party does not wish to mandate, it is deemed to accept any decision of the SC on the topics of the agenda except in the cases under [point 3.2.](#)

One voting representative may represent more than one Party provided it is duly mandated to do so.

1.2. Non-voting members

Each Party is entitled to designate non-voting representatives who are entitled to participate to the meetings and deliberations of the SC, but are not entitled to vote.

In case a Party wishes to designate a non-voting representative for a particular SC meeting, this Party notifies to the Secretary the name of the non-voting representative and the date of the SC meeting he/she attends at least three (3) Business Days before the SC meeting that the non-voting representative attends.

1.3. Chairman

TSOs elect their co-chairman among the voting representatives of the TSOs.

PXs elect their co-chairman among the voting representatives of the PXs.

Each chairman may, in exceptional circumstances which prevent him/her to exercise his/her functions at a meeting of the SC, delegate such task to the other Co-chairman or to a voting representative of the other Parties.

1.4. Secretary

The Secretary is ensured by one Party on rotating basis. The Secretary is yearly chosen by the SC upon proposal of the Parties.

The Secretary has no voting rights. For the avoidance of doubt, the Secretary cannot be mandated as voting representative of one of the Parties even in exceptional circumstances when the official voting representative cannot attend a SC meeting.

The Secretary assists the SC, amongst others by:

- Drafting the agenda, preparing session files of meetings and notices and sending them, along with the Co-chairmen;
- Preparing the attendance list of the meetings;
- Verifying before each SC meeting that the voting representatives attending the SC meetings have been either listed on the list of official representatives or announced in case of replacement. In the event of representation by another Party, the Secretary verifies whether a valid power of attorney has been given by the Party not attending.
- Ensuring the drafting and circulation of the minutes of the meetings and/or of decisions.

The costs of the Secretary are borne by the Party ensuring the Secretary for the corresponding year.

2. SC meetings

The SC meets at least quarterly except if the Co-chairmen consider such meeting is not necessary given the absence of matters to be discussed.

Any Party may at any time request the Secretary to convene a SC by sending a motivated written request to this effect to the Secretary with indication of the matters to be put on the agenda.

The notices for a meeting of the SC are notified by the Secretary in writing to the members of the SC at least ten (10) Business Days before such SC. The notices contain the date, place and time as well as the agenda of the meeting. Any supporting documentation to the points on the agenda is sent at least five (5) Business Days before the meeting.

A Party may propose to add issues on the agenda of a meeting of the SC, and these proposals are taken into account provided they have been received by the Secretary at the latest 5 (five) Business Days before such SC.

The SC may hold ad hoc SC meetings for urgent matters at any time, without prior notice period.

A member of the SC who attends the meeting or is represented to it is considered as having received due notice.

The duty of the practical organisation of the meetings of the SC is borne by each Party on a rotating basis. The Secretary keeps track of the rotation and indicates within reasonable period of time prior to the SC which Party is responsible for organising the meeting. The meeting costs (hosting, organisation, etc.) are borne by the Party organising the meeting, it being understood that the travel costs of each Party's representative is borne by the Party(ies) he/she is representing.

The SC may meet either physically or by distant meeting devices (such as e.g. conference call, video call, written procedure, etc.).

3. Decision-making rules within the SC

3.1. Unexpected items

The SC may only decide on the topics of the agenda circulated by the Secretary in accordance with these RIO, except in the event of Urgent Decisions, in which case the procedure and terms for Urgent Decisions set forth in point 4.2 of these RIO applies.

Unexpected Item(s) may be subject to decision at the meeting during which the Unexpected Item(s) arose, provided that all representatives are duly mandated. A representative indicates when he/she is not duly mandated in such case.

Decisions on Unexpected Item(s) are taken, in principle, at the next available SC, by which time the members of the SC have sought the necessary power and authority to decide on the Unexpected Item(s).

However in case Urgent Decisions are concerned, decisions on Unexpected Item(s) are taken at an ad-hoc conference call which takes place ten (10) Business Days at the latest following the meeting during which the Unexpected Item(s) arose and, for clarity's sake, is subject to the general rules on quorum and decision making. By the time of this ad-hoc conference call, the voting members of the SC have sought the necessary power and authority to decide on the Unexpected Item(s).

3.2. Exceptional circumstances

By derogation to point 1.1 of these RIO, in case a Party, due to exceptional circumstances, should not be present or represented at a meeting of the SC, then decision(s) can however be taken by the other SC members attending, subject to the possibility, for the Party who did not attend, to challenge such decision(s) in writing within five (5) Business Days two (2) in case Urgent Decisions are concerned) after sending of the minutes in accordance with these RIO. Absent such written challenging, the decision(s) is deemed final and binding, pursuant, for the remainder, to the provisions set forth below under point 4 of these RIO.

In case a Party challenges such decision(s), the challenged decision(s) is put at the agenda of the next available SC meeting. The Party who challenged the decision(s) attends this next SC meeting. In its absence, the decision(s) is deemed final and binding as of the close of the meeting.

In case a Party challenges a(n) Urgent Decision(s), the challenged Urgent Decision(s) is put at the agenda of an ad hoc conference call, which takes place (ten) 10 Business Days at the latest following the challenges of the Urgent Decision(s). The Party who challenged the Urgent Decision(s) attends this conference call. In its absence, the Urgent Decision(s) are deemed final and binding, pursuant, for the remainder, to the procedure set forth under point 4.2 of these RIO.

4. Recording of SC decisions

4.1. Normal procedure

The decisions of the SC are recorded by the Secretary in minutes.

The draft minutes are circulated to the members of the SC by the Secretary, within a maximum of three (3) Business Days of the meeting concerned.

In case the next SC meeting takes place within one (1) month after the previous meeting, members of the SC may comment on the minutes within ten (10) Business Days after sending of the minutes in accordance with these RIO (it being understood for the avoidance of any doubt that, except in the strict circumstances described in 3.1 and 3.2 above, the decisions themselves cannot be challenged).

The comments on the minutes received in the abovementioned deadlines are discussed at the next available meeting of the SC, until a final agreement is reached on the text of the minutes.

In case the next SC meeting does not take place within one (1) month after the previous meeting, the approval of the minutes is organised by the Co-chairmen, assisted by the Secretary, within one (1) month of the concerned meeting.

In absence of comments, minutes are deemed approved within one (1) month.

The decision(s) as recorded in these finalised minutes are binding, as approved, as of close of the meeting. A copy of these finalised minutes is circulated to the members of the SC by its Secretary, within a maximum of two (2) Business Days of the meeting concerned.

The Parties agree not to organise a common register of minutes and each Party ensures its own record keeping of the copies of the minutes of the SC it receives from the Secretary.

4.2. Urgent decisions

Urgent Decision(s) of the SC are recorded by the Secretary in a separate written decision document, prepared, shown and discussed during the SC meeting. Except in the strict circumstances described in 3.1 and 3.2 above, such separate decision document are immediately binding, as approved, as of close of the meeting.

A copy of this separate decision document is circulated to the members of the SC by the Secretary, on the very same date of the meeting. This separate decision document is also reflected in the minutes of the SC meeting during which it was adopted. Such minutes are elaborated in accordance with the provisions above, it being understood, for the avoidance of any doubt, that neither the Urgent Decision(s) nor the separate decision document can be subject to any further commenting.

5. Possible Subcommittees of the SC

The SC may organise for committees or working groups provided the SC demonstrates such committees or working groups are necessary to assist the SC. In such event, the SC determines the composition and the modalities of the functioning of such committee or working group

- **Operations Committee**
- **Incident Committee**
- **Development Group**

The Development Group performs studies and analyses upon request of the SC.

In particular, the Development Group performs the following tasks:

- Analysis of change request related to algorithmic matters;
- Simulation and validation studies;
- Any other studies or analyses requested by the SC.

Annex 5. MC REQUIREMENTS INCLUDING HIGH-LEVEL FUNCTIONAL ARCHITECTURE, ALGORITHM AND EXTERNAL INTERFACE REQUIREMENTS

5.1. HIGH-LEVEL FUNCTIONAL ARCHITECTURE AND END-TO-END BUSINESS PROCESS

6. Introduction

The main purpose of this document is to describe the High-level Functional Architecture including the flows, the interconnection, and the interfaces that will be the basis for the procedures and for the IT design.

We define the Market Coupling (MC) as the set of MC system components and arrangements created or adapted with the explicit aim of establishing coupling of the day-ahead electricity markets covering the [country 1 ... country n] countries of the ... zone.

Among the many perspectives possible, the present document adopts one particular perspective on the MC: that of information flows. This perspective can be labelled the information perspective. At a high level of abstraction, the document tries to answer the questions below:

1. *Which automated system components* play a role in the MC?
2. *Which human agents* (the 'Agents') play a role in the MC?
3. *What information* is produced by any of the MC components and Agents in the MC (only information relevant to the MC is taken into consideration)?
4. *What information* is exchanged between any of the MC components and Agents in the MC (applying the same restriction as item 3)?
5. In *what sequence* is the information produced by and exchanged between the S MC components and the Agents?

Other perspectives on the solution include the following and can be found in the related documents.

- The legal and governance perspective (concerned with roles and responsibilities, ownership, decision making and legal entities) reflected in the Framework Agreement and on subsidiary agreements.
- The algorithmic perspective (concerned with the rules applied in the calculation of the market coupling result and other pieces of information) reflected in the MC requirements.
- The IT perspective (concerned with the design and development of the MC components and the interfaces between them) reflected in the IT systems and interface specifications.
- The operational perspective (concerned with the procedures followed to operate the Systems) reflected in the procedures.

The Main assumptions:

- Shipping Agent : This HLA is realised on the main assumption that the Cross-PX clearing will be done via the Clearing Houses;
- Fallback system (Shadow auction): A specific HLA including the Shadow Auction will be edited in a separate document.

The below shown architecture is drawn on the basis of the design assumption that the Cross-PX clearing process is happening through the clearing houses.

7. High-level functional architecture and business process

This chapter contains the high-level functional architecture and business process with the current design assumption. The architecture diagram is also available as a separate PowerPoint sheet for better legibility.

7.1. Architecture overview

The architecture overview shown below was jointly drafted. It is explained in the following sections of this chapter, which are devoted to:

- The system components shown,
- The Agents shown,
- The information produced and exchanged,
- The indicative sequence in which the information is produced and exchanged,
- Remaining questions regarding the information flows (protocol flows and other) and assumptions,
- A glossary, explaining the terms used in the diagram and the remaining text of this chapter.

(...)

7.2. Systems

The list of systems below reflects the current design assumption.

In the architecture diagram, the automated system components further called Market Coupling Components that are expected to play a role in the Market Coupling are indicated with rectangles. These systems may either be existing systems adapted to the Market Coupling or systems to be newly built.

The MC Components distinguished are logical or virtual systems. This means, they do not necessarily correspond to single software applications or to dedicated computer hardware. The latter entities belong to the IT perspective. In the information perspective, a System can be thought of as a set of information manipulation functions for which it is convenient to consider as a separate entity.

The following Systems are distinguished: XXX

-
-

Systems are interconnected via Interfaces. Each Interface serves one or more information flows. The different information flows are defined in 2.7 with an indicative sequence.

7.3. Hosting, Operations and Interfaces

The information about the hosting, the operations and Interfaces are in the document called: HLA Implementation details.

7.4. External Agents

The Agents are represented in the diagram as abstract human figures.

Just like the MC components are abstract systems, the Agents distinguished are logical or virtual agents. An Agent is a non-automated entity interacting with one or more Systems or other Agents in

the information perspective on the Solution. An Agent is distinguished according to the role he plays. Conversely, millions of human beings appear as a single agent ('The General Public').

The following Agents are distinguished.

- The 'Market Participant' Agent represents the PX members.
- The 'General Public' Agent represents the recipient of all published data due to transparency requirements.

7.5. Information produced and exchanged

The information produced and exchanged is represented in the diagram by arrows with a label. The small arrows point in the direction of the information flow. The circular arrows indicate information produced in processes internal to a System. The label indicates the contents of the piece of information transferred or produced. The sequence of production and transfer of information is shown in section 2.5 of this document. The numbering of the information flows doesn't always respect the sequence of the actions.

The real frequency, timing and sequences are being defined in the procedures

It should be stressed that only flows of information are shown in the diagram. Other flows, like electricity and money flows, are not taken into account.

7.6. Sequence in which information is produced and exchanged

The numbering of the information flows doesn't always respect the indicative sequence of the actions.

More specifications as the responsibilities, the format and the interfaces are defined in the HLA Implementation details

Flow Nb	Info	Produced by	From	To	Predecessor

The below table contains an overview of the recipient of the programming authorizations, i.e. the CCP acting as BRP (or attached to an existing BRP for some countries), i.e. performing the cross-border TSO nominations and the Hub nominations.

Direction of Flow	PX1	PX2

7.7. Protocol flows

The high-level functional architecture and business process primarily includes the systems, agents and information flows between these which are crucial in establishing market coupling in the region. Some of these flows require confirmation or validation. The flows providing such validation or confirmation are referred to as 'protocol flows' as they owe their existence to a (validation or confirmation) protocol. In the current version of the architecture, the agreed protocol flows have been incorporated.

[*Number of protocols*] protocol flows are implemented.

- [Protocol flow X]
- [Protocol flow Y]

These flows are described below:

[Flow X]

Description:

[Flow Y]

Description:

Advantages and disadvantages of protocol flows

Adding extra flows for confirmation and validation has the advantage of providing additional comfort on the correctness of certain pieces of information, which could be relevant when it is transferred between separated entities in a contractual framework. But it comes at a cost: it adds throughput time and complexity to the operational procedures. Adding complexity also means adding risk, as each procedural step is a potential point of failure, and adding project work, as it will require testing. The question to ask is: 'Is the additional comfort really necessary and does it outweigh its cost?'

7.8. Glossary

We agree to use the following terms in the functional architecture, in the sense indicated in this glossary. We try to avoid using other terms to refer to the same entities.

Aggregated Order Information: set of all relevant data representing all Orders received by a Power Exchange for a given day. The precise aggregation of this data is for the Algorithm Workstream to define.

ATC: Available Transmission Capacity is the part of NTC that remains available, after each phase of the allocation procedure, for further commercial activity.

Congestion Revenue: total TSO income from selling in importing Market minus total TSO cost from buying in exporting Market.

Congestion Revenue Share: part of the Congestion Revenue which comes back to each TSO, after sharing between TSOs.

Critical Element Flows: the flows on all relevant Critical Network Elements as calculated by the MC System.

Critical Network Elements: it was agreed that this term does not require further definition for the purpose of this document.

Cross-border TSO Exchanges: (also known as Programming Authorisations) the exchanges (exchanges being anticipated CCP nominations) between interconnected TSOs insofar as these are exchanges between two hubs. This implies that cross-TSO exchanges within a Hub are excluded.

Final Net Position: for each Settlement Period of a given day in a given Market, the net quantity of electricity to be exported/imported by an Exchange, as validated by a Power Exchange and accepted by the TSOs.

Final Prices: price per Settlement period of a given day in a given Market as validated by a Power Exchange.

Flow Model Parameters: the complete set of parameters describing the grid in the region taken as an input by the MC System.

Grid Forecast: prognosis of demand and generation and the resulting physical flows in the grid.

Hub: a geographical area for which always one price per price period is calculated.

Individual Results: For each Settlement Period of a given day, Market Price and Schedule of a Market Participant.

Market (or Day-Ahead Market): platform run by a Power Exchange where bids and offers on electricity to be delivered the following day are matched in an auction process. In most cases a market is linked to a geographical area.

Market Participant: member of a power exchange trading in the day-ahead Market.

Matching: calculation of Market Results, as generally performed by a PX.

NTC: Net Transfer Capacity corresponds to the maximum exchange between two areas compatible with security standards applicable in both areas and taking into account the technical uncertainties on future network conditions.

Orders: order sent by Market Participants to the Exchanges. An order consists at least of a product, a price, a quantity, and a direction (purchase or sale). The order is a commitment to sell or buy (as specified in the order) the quantity specified in the order at the price specified in the order (or above the price in the case of sale, or below the price in the case of purchase), of the product specified in the order. Orders are either Divisible Hourly Orders or Block Orders.

Preliminary Net Position: for each Settlement Period of a given day in a given Market, the net quantity of electricity to be exported/imported by an Exchange, as calculated by the MC System.

Preliminary Prices: price per Settlement Period of a given day in a given Market as calculated by the MC System.

Programming Authorizations: see Cross-border TSO Exchanges.

PX net position: for each Settlement Period of a given day in a given Market, the net quantity of electricity to be exported/imported by an Exchange, as validated by a Power Exchange.

Scheduling Information: refers to the nomination or reservation by the market participants of long-term and day-ahead exchange programs with the TSOs.

Settlement Period: The minimum period of time for which Electricity is exchanged on the Day-Ahead Power Exchanges. The assumed Settlement Period is one hour of the following day.

Shadow Prices: for each Settlement Period of a given day, for each critical network element for that Settlement Period the marginal value of a single unit (MW) of capacity.

Technical Information which is input to the TSO back-end systems is to be specified by the TSOs.

Winning Block Set: set of contracted block orders.

5.2. HIGH-LEVEL FUNCTIONAL ARCHITECTURE AND END-TO-END BUSINESS PROCESS FOR SHADOW AUCTIONS

1. Introduction

The main purpose of this document is to describe the HLA including the flows, the interconnection, and the interfaces which will be the basis for the procedures and for the IT design of the Shadow Auctions.

Similarly to the case of the HLA established for the Market Coupling, with Shadow auction it is meant the set of systems, components and arrangements created or adapted to the aim to provide a fallback solution for the day ahead capacity allocation on the borders of the Region in case of Failure of the Market Coupling process at whatever stage.

As for the HLA document accompanying the graphical version of the HLA, the present document adopts one particular perspective on the Shadow Auction: that of information flows. The questions which this document tries to address are the same that have been listed in the twin paper for the Market Coupling, so they will not be repeated in this text.

Further on, this document clears the second assumption made in the HLA MC document: "Fallback system (Shadow auction): A specific HLA including the Shadow Auction will be edited in a separate document".

2. High-level functional architecture and business process

This chapter contains the high-level functional architecture and business process with the current design assumption.

2.1. Architecture overview

The architecture overview shown below was jointly drafted. It is explained in the following sections of this chapter, which are devoted to:

- The system components shown,
- The Agents shown,
- The information produced and exchanged,
- The indicative sequence in which the information is produced and exchanged,
- Remaining questions regarding the information flows (protocol flows and other) and assumptions,
- A glossary, explaining the terms used in the diagram and the remaining text of this chapter

2.2. Systems

The list of systems below reflects the current design assumption.

Concerning the definition of the SA components, reference is made to the MC document, since their meaning (definition, semantic and nature) is not changing in this paper.

The following SA Systems are distinguished: XXX

Systems are interconnected via Interfaces. Each Interface serves one or more information flows. The different information flows are defined in 2.5 with an indicative sequence.

2.3. External Agents

The Agents are represented in the diagram as abstract human figures. Just like the MC components are abstract systems, the Agents distinguished are logical or virtual agents. An Agent is a non-automated entity interacting with one or more Systems or other Agents in the information perspective on the Solution. An Agent is distinguished according to the role he plays. In the HLA Shadow Auction the identified External Agents are the “Fallback participant”, i.e. the entity submitting shadow bids to the Shadow Auction System, and the FSO, the Functional system operator (of the MC System).

2.4. Information produced and exchanged

The information produced and exchanged is represented in the diagram by arrows with a label. The small arrows point in the direction of the information flow. The circular arrows indicate information produced in processes internal to a System. The label indicates the contents of the piece of information transferred or produced. The sequence of production and transfer of information is shown in section 2.5 of this document. The numbering of the information flows doesn't always respect the sequence of the actions.

The real frequency, timing and sequences are being defined in the procedures and in the business process.

It should be stressed that only flows of information are shown in the diagram. Other flows, like energy and money flows, are not taken into account.

2.5. Sequence in which information is produced and exchanged

Flow Nb*	Info	Produced by	From	To	Predecessor
1					
1+n					

*The numbering of the interfaces doesn't necessarily respect the sequence of the actions.

Indicatively, the revenues generated by a Shadow Auction process should be shared according to the same arrangements adopted for the Long Term revenues sharing.

2.6. Protocol flows

The high-level functional architecture and business process primarily includes the systems, agents and information flows between these which are crucial in establishing market coupling in the region. Some of these flows require confirmation or validation. The flows providing such validation or confirmation are referred to as 'protocol flows' as they owe their existence to a (validation or confirmation) protocol. In the current version of the architecture, the agreed protocol flows have been incorporated.

2.7. Physical Link

Numbering	Owner	Technology	Status
[FA1]		[Web Interface/e-mail/ Electronic Highway/ Internet mail/FTP/XXX]	[Existed/tested..]
[FA1+n]		[Web Interface/e-mail/ Electronic Highway/ Internet mail/FTP/XXX]	[Existed/tested..]

2.8. Glossary

We agree to use the following terms in the functional architecture, in the sense indicated in this glossary. We try to avoid using other terms to refer to the same entities.

ATC: Available Transmission Capacity is the part of NTC that remains available, after each phase of the allocation procedure, for further commercial activity.

Congestion Revenue: total TSO income from selling in importing Market minus total TSO cost from buying in exporting Market.

Cross-border TSO Exchanges: (also known as Programming Authorisations) the exchanges (exchanges being anticipated CCP nominations) between interconnected TSOs insofar as these are exchanges between two hubs [*HubX - HubY, HubY – HubZ*]. This implies that cross-TSO exchanges within a Hub are excluded.

Explicit Auction: Capacity allocation operated by CASC on behalf of the TSO's of the region. This type of auction is organized on a yearly, monthly and daily basis and in case of decoupling situation for the region.

Hub: a geographical area for which always one price per price period is calculated.

Market (or Day-Ahead Market): platform run by a Power Exchange where bids and offers on electricity to be delivered the following day are matched in an auctioning process. In most cases a market is linked to a geographical area.

Fallback Participant: member of the XXX platform and taking part of the Shadow explicit Auction. This includes BRP's being participant or not on the Exchange(s).

FSO: Functional System Operator (of the MC System)

Matching: calculation of Market Results, as generally performed by PXs or by CASC in case of Fallback situation.

Orders: order sent by Market Participants to the Exchanges. An order consists at least of a product, a price, a quantity, and a direction (purchase or sale). The order is a commitment to sell or buy (as specified in the order) the quantity specified in the order at the price specified in the order (or above the price in the case of sale, or below the price in the case of purchase), of the product specified in the order. Orders are either Divisible Hourly Orders or Block Orders.

Programming Authorizations: see Cross-border TSO Exchanges.

Shadow bid: Bid entered by Fallback participant via the XXX platform. The bids are entered before a decoupling announcement and will be taken into consideration as soon as the decoupling is published on the market. Modification on the bid will not be permitted after decoupling announcement

5.3. ALGORITHM REQUIREMENTS

1. Introduction

This document lists the requirements that the market coupling (MC) algorithm to be designed for the [Name] project must fulfil.

These requirements relate

- either to the strict framework of the [name] project, i.e. they are considered as necessary to couple the [number] exchanges through scheduled electrical energy transfers using electric networks existing in the [number] [region] countries (“mandatory requirements”),
- or – as a second priority -to potential extensions of the [name] project, for instance the coupling of the [name] regions with other PXs belonging to other regions (“additional requirements”).

The latter “additional” requirements, if not strictly necessary for the success of the [name] project, will undoubtedly be highly useful, notably in the already planned multi-regional extensions. Therefore one of the evaluation criteria for the [name] algorithm is its flexibility: it must be relatively easily adaptable to fulfil the additional requirements.

2. Mandatory Functional requirements

2.1. Objective

The MC algorithm refers to the full solution, including elements that may be undertaken locally or centrally. The algorithm takes as input all necessary information¹ from all local orders submitted by the participants of the power exchanges and the parameters of the network constraints.

The MC Results, output of the algorithm, are:

- for each bidding area:
 - the area net position for each hour (exporting or importing),
 - the Market Clearing Price (MCP) for each hour,
 - the set of accepted and rejected, block orders;
- for each constraint in the network representation:
the shadow² price associated with the network constraint for each hour.

The algorithm must determine the best MC results under the exchanges’ constraints, the network constraints and the high level properties (see below) and in this way optimize the economical usage of the cross border transmission capacity.

¹ Minimum information to be provided includes volume and price of all individual but anonymized block orders and so called Net Export Curves, provision of more detailed information like all anonymized individual orders should also be supported by the algorithm but is not required

² a “shadow” price associated to a constraint is the increase of the objective function resulting from relaxing this constraint by one unit

2.1.1. Order types

2.1.2. Network constraints

2.1.3. High Level Properties

2.1.4. Performance requirements

2.1.5. Reproducibility

3. Algorithmic behaviour

The algorithm design process is described in a parallel document (“Algorithm design approach”). Nevertheless, this section describes the “targets” of the algorithm. Indeed, whereas the beginning of this document provides a description of various features to be included in the algorithm, this section presents insight on the qualitative aspects expected for the algorithm.

- a. Methodology**
- b. Simplicity**
- c. Performance**
- d. Scalability**
- e. Robustness**
- f. Reliability**
- g. Transparency**
- h. Data sensitivity**
- i. Extensibility**

5.4. MC SYSTEM EXTERNAL INTERFACE SPECIFICATION

1 Preface

This document contains the requirements on and specifications of the external interfaces of the Market Coupling System. It is primarily intended for the System Supplier who will develop the MC System and the internal or external parties that develop or adapt the systems that interface with the MC System. In second instance, it will be used by the MC project to validate and accept the MC System and the (adaptations to the) systems it interfaces with.

2 Introduction

2.1 Sequence overall process

2.2 Interface specification approach

3 Document descriptions

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Annex 7. CHANGE CONTROL PROCEDURE

1. Introduction

1.1. Purpose

This document describes the Change Control Procedure to be used as part of the Market Coupling operations. It provides a controlled environment in which changes can be implemented efficiently with the minimum of delay and the least risk.

The process aims at tracking all types of changes from major changes through the scope and functionality of the Market Coupling to minor bugs in the software.

Whilst the majority of changes are likely to be simple operational changes, it is still important that the procedure is robust to the processing of more complex changes.

1.2. Outline of the Change Control Procedure

The overall Change Control Procedure provides a process which caters for complex solutions. In the case of simple problems (with a low risk solution affecting a small number of Components owned by a single or joint Party) a provision of a notification process is foreseen. This notification process simply informs other parties of the changes that are being carried out.

For changes which are more complex, of a slightly higher risk or affecting multiple Components or for Components which are the responsibility of more than one Party (or its subcontractor), the process allows for:

- the distribution of the proposed changes;
- the possibility for Parties to review the changes and provide feedback; and
- when necessary, either because of objections or because of the complexity of the proposed change, to request a review by the Steering Committee.

Changes are recorded in the Request for Change (RFC).

For notifications and simple changes, the change will be recorded on just one form, the Request for Change (RFC) form. This will contain all the information required including the cause of the change, the proposed solution, its impact and the way in which the change will be implemented. **In this case no other forms will be required to be completed.**

In the case of complex changes it may not be possible for the originator to complete all of the sections of the RFC. In this case the other sections, such as e.g. solution analysis (Section B of the RFC), impact assessment (Section C of the RFC), implementation plan (section D) will be requested from the appropriate people using the relevant form(s). This will allow individual responses from several Parties in the case, for example, the solution affects several Components.

The Change Control Procedure is coordinated by the Change Control Administrator (CCA). The CCA shall rotate among the Parties on a yearly basis (according to the measures agreed in the Framework Agreement).

The Parties shall appoint a Local Change Administrator (LCA) for:

- (a) each of the Parties;
- (b) each of the Components jointly developed by the Parties;
- (c) each of the tasks subcontracted by the Parties.

The LCA is the single point of contact for the purpose of the Change Control Procedure. The LCA shall perform all tasks assigned to it/them, including when the tasks are subcontracted by the Parties.

Each of the steps involved in this procedure and their associated timings are described in Section 3.

1.3. Scope

Any changes can be proposed through this Change Control Procedure. In accordance with Paragraph 8.1.1 and Paragraph 18.1.2 of the Framework Agreement, the changes to the following must comply with the Change Control Procedure:

- The annexes indicated as “in scope” in Annex 14 of the Framework Agreement; and
- the Components indicated as “in scope” in the Component List (Annex 6 of the Framework Agreement).

Other elements falling under the scope of Change Control Procedure are the operational procedures (although annexed to the Framework Agreement which is not in scope of this Change Control Procedure) and IT/IS items. The changes applicable to the latter elements should follow the specific Change Control process described in section 2.3 of this document.

The local TSO's Components are not considered in scope of this procedure since the risk management procedure associated to these Components is defined and handled by the TSOs jointly.

1.4. Structure of Document

Section 2 contains a flowchart showing the steps to be taken in the identification and processing of changes. This forms the basis of this Change Control Procedure which is described in the remaining parts of the document.

Section 3 provides further details of the activities to be carried out. It expands on the flowchart and identifies the rules and options for some actions. Where there are specific time constraints these are identified.

Section 4 contains the various forms used by the procedure together with guidance on their use.

Section 5 gives information regarding the allocation of risk to changes.

Section 6 describes assurance gathering in the context of the Change Control Procedure.

Sections 7, 8 and 9 provide the terms of reference for each of the main participants in the Change Control Procedure.

2. Workflow Diagram

The workflow diagrams describe the overall flow of the procedure

3. Activity and Timing Information

The tables below provide details of the actions to be taken at each step of the procedure and the timeframe within which they should be carried out.

In all cases where there is activity to be carried out by the Parties (or their subcontractors if any) they should aim to do it as soon as practically possible. In particular, the CCA will aim to process documents within the timeframe allowed and in most cases on the Business Day of receipt of documentation.

Two sets of timings are identified for each process described in the Change. The column 'normal timing' provides the framework for dealing with changes, except for bug fixes and changes needed for continuity reasons which fall under the column 'fast track timing'. The fast track timing should only be used in exceptional conditions. In all cases the processing of changes will be much faster when the RFC will be as complete and as detailed as possible from the beginning.

The standard for communications will be email with fax and telephone as back up mechanisms.

4. Change Control Forms

4.1. Introduction

The Change Control Forms provide the basis of the information exchanges regarding changes between all interested Parties with respect to a particular change.

For complex changes (i.e. changes needing a thorough impact analysis, such as impacting several systems, a substantial change of a Component, etc.) the Solution Proposal Form, the Impact Assessment Form and the Implementation Plan Form (can be used to gather information from participants.

Objections are raised using the Objections Form and changes to Component versions are sent on the Component Version Update Form.

Changes to or new LCA registrations are carried out on the LCA Registration Form.

This section provides details of how to complete the forms and the information that is required in each one. The provision of complete and correct information is important to the efficient operation of the overall process. Generally as much information as possible should be provided at each stage to speed up the process.

Type of Forms:

- LCA Registration Form
- Operational Procedure Form
- Request for Change Form
- Solution Proposal Form
- Impact Assessment Form
- Implementation Plan Form
- Objections Form

- Component Version Update Form
- Risk and Impact Allocation

5. Categories and Risk

The overall impact of implementing a change will be defined through the nature of the Components affected and the risk associated with the particular change that is being carried out. Note that, when a Component is jointly operated by Parties, it is treated as if there was just a single Component.

The categories for each Component are defined as part of the Component description in the configuration database.

Each proposed change will have a degree of risk associated with it

5.1. Component Impact

For **each Component** affected by the proposed change the category and risk are combined to provide an impact for the Component as defined in the table below.

5.2. Route of the Change through the Procedure

6. Assurance Gathering

As part of the Change Control Procedure it is necessary to provide assurance that the changes that have been made are correct and suitable for live operation. This assurance gathering can take place using a range of activities as described below. The level of assurance gathering will depend on the nature and scope of the change.

6.1. Assurance Activities

6.2. Scope of Assurance Gathering

7. Tasks of the Steering Committee (or subcommittee) under the Change Control Procedure

The tasks of the SC under the Change Control Procedure are defined in the present section.

7.1. General tasks

Under the Change Control Procedure, the SC performs three (3) main tasks, namely it:

- (a) ratifies proposed changes (for those that are provided to it in accordance with the Change Control Procedure);
- (b) determines when changes should be scheduled (in case several changes relate to the same Component or to different Components but in the same timeframe); and
- (c) appoints a person responsible for implementing changes (or instructs that such person should be appointed).

7.2. Specific tasks

Under the Change Control Procedure, the SC has the following specific tasks, namely it:

- (a) designates, among its members, a CCA;
- (b) controls and monitors the activities of the CCA;
- (c) notifies the CCA of the contact details of the SC members;
- (d) is available within the timeframes set forth in the Change Control Procedure to perform the tasks as defined in the Change Control Procedure;
- (e) reviews RFC;
- (f) assesses completeness of the RFC in the light of the Change Control Procedure and requests for additional information;
- (g) accepts or rejects RFC;
 - Rejections can only be made when:
 - (i) Costs exceed benefits;
 - (ii) Development is excessive;
 - (iii) Implementation entails risks;
 - (iv) Objections are upheld; and
 - (v) RFC contradicts other implementations.
- (h) reviews objections to changes;

- (i) assesses completeness of objections to change in the light of the Change Control Procedure and requests for additional information;
- (j) accepts or rejects objections to changes;
- (k) confirms that the go live criteria have been met and determines the implementation date for changes and the timing of implementation;
- (l) receives monthly reports from the CCA;
- (m) escalates issues for decision of the SC as set forth in the Change Control Procedure (if subcommittee);
- (n) reviews the appropriateness and efficiency of the Change Control Procedure at least once a year ; and
- (o) proposes changes to the Change Control Procedure to the SC (if subcommittee).

8. Tasks of the CCA under the Change Control Procedure

8.1. Introduction

The CCA is the person responsible for the central management and administration of changes under the Change control Procedure. The role of the CCA is key to the successful operation of the Change Control Procedure. It is the single person of contact for notifications and RFC and for circulating information and analysis requests. It is the central repository for change control information.

8.2. Tasks of CCA

The tasks of the CCA under the Change Control Procedure are defined in the present section.

Under the Change Control Procedure, the CCA has the following tasks, namely it:

- (a) keeps an updated version of the contact details of the LCAs and distributes it to the attention of the OPSCOM and of the LCAs;
- (b) proposes updates of the List of Components (Annex 6 of the Framework Agreement) to the SC;
- (c) updates and maintains a register of changes;
- (d) reviews RFCs and notifications;
- (e) receiving notifications of change from the LCA's and circulating these for information in accordance with the change control procedure.
- (f) assesses the completeness of RFCs in the light of the Change Control Procedure, including the check of the Components and risk categories in accordance with the Change Control Procedure and the List of Components (Annex 6 of the Framework Agreement);
- (g) requests for additional information on RFCs;
- (h) allocates unique RFC numbers;
- (i) coordinates the items of the agenda of the OPSCOM that relate to the Change Control Procedure;
- (j) requests emergency meetings of the OPSCOM to review urgent RFCs;

- (k) provides relevant RFCs to the OPSCOM and ensures the follow up of the decisions of the OPSCOM in this matter;
- (l) reviews objections to changes;
- (m) assesses completeness of objections to change in the light of the Change Control Procedure;
- (n) requests for additional information on objections to change;
- (o) in case the objection to change remains unmotivated or motivated inadequately following a request for additional information, escalates the matter to the SC;
- (p) communicates to all LCAs the implementation date for changes and the timing for implementation;
- (q) communicates the go live criteria to the LCAs;
- (r) provides monthly change management reports to the OPSCOM and the LCAs, including details of the RFCs that have been raised, their type (notification, emergency fix, etc.), status (position in the change control cycle), risk category and impact on Components;
These reports are provided in due time before the OPSCOM meeting.
- (s) provides monthly implementation reports to the OPSCOM and LCAs setting out the dates of future planned changes, the Party responsible for the changes and the impact on Components;
These reports are provided in due time before the OPSCOM meeting.
- (t) provides advice to any concerned Party (or subcontractor if any) on completing the forms under the Change Control Procedure as necessary.

9. Tasks of the LCA under the Change Control Procedure

9.1. LCA Summary

LCAs perform a key role in the Change Control Procedure.

LCAs are the single point of contact for any communications in respect of the RFCs and notifications. As a general matter LCAs are responsible for:

- submitting RFCs and notifications;
- coordinating the responses to solution analysis requests (section B of the RFC) and impact assessments within their own companies;
- ensuring that agreed changes are implemented.

For any Component for which a RFC must be filed, the relevant LCAs will be responsible for submitting the RFC, for coordinating the assessment of the impact of the change and for ensuring that the change is implemented.

9.2. Tasks of LCA

Each LCA shall have the following tasks:

1. designate a person who will substitute the LCA in case the LCA cannot perform its tasks;
2. provide the CCA with its contact details and those of its substitute and keep the CCA updated of any change of these;

3. provide the CCA with details of any new Components that should be added to the register of change, including the Component category and risk category;
4. send complete RFC and notifications to the CCA in accordance with the Change Control Procedure;
5. inform all relevant persons within its company of RFCs as communicated by the CCA and follow up these internally;
6. take receipt of RFC from the CCA for solution analysis and impact assessment;
7. Receiving notifications of change from the CCA and ensuring that the relevant departments within their organisation are notified of the changes
8. The LCA will ensure that the relevant persons within its company are informed of it with a view of assessing the RFC within the timeframes set out in the Change Control Procedure.
9. raise objections, if any, against received RFC.
10. Objections shall always be motivated. Before raising an objection, the LCA ensures that reasonable efforts have been made to resolve the objection between the relevant Parties (or subcontractors if any) informally.
11. collect the results of the internal analysis/assessment and communicate a common position of its company to the CCA;
12. distribute the monthly overview reports received from CCA internally;
13. ensure that the date upon which a change will be implemented is reported to all the relevant persons within its company;
14. in case the CCA is not available, each LCA shall communicated himself/herself his/her RFC to the other LCAs.
15. The LCA circulating the RFC shall take upon him all responsibilities of the CCA concerning this RFC.
16. The LCA will perform its tasks during Business Hours.

ANNEX 8 PROCEDURES

- GLOSSARY
- RECEPTION AND INTEGRATION OF ATC VALUES IN THE MC SYSTEM
- TRANSFER OF CALCULATION RESULTS AND VALIDATIONS BETWEEN PX TRADING SYSTEMS, MC SYSTEM AND TSO COMMON SYSTEM
- TRANSFER OF ATC VALUES FROM TSO COMMON SYSTEM TO MC SYSTEM
- RECEPTION OF THE AGGREGATED ORDER FROM PX SYSTEMS TO MC SYSTEM
- MC CALCULATION INCL. CHECK AND TRANSFER ROUNDED PRICES
- NET POSITIONS VALIDATION BY TSO COMMON SYSTEM
- CONNECTION TO THE GUI AND TRANSFER OF FINAL PRICES AND NET POSITIONS FROM MC SYSTEM
- INCIDENT INVESTIGATION
- TRANSFER OF DATA FROM MC SYSTEM TO BOTH CROSS PX CLEARING SYSTEMS AND TRANSFER OF CROSS BORDER TSO EXCHANGES (PROGRAMMING AUTHORIZATIONS) FROM TSO COMMON SYSTEM TO CROSS PX CLEARING SYSTEMS
- HUB AND CROSS-BORDER NOMINATIONS PERFORMED BY THE CCPS
- INCIDENT COMMITTEE PROCEDURE
- COMMUNICATION TO MARKET PARTICIPANTS
- LONG CLOCK CHANGE
- MC SYSTEM SWITCH AND POSSIBLY RESET OF THE MC SYSTEM

Annex 9. TEMPLATE OPERATIONAL CALENDAR & CONTACT DETAILS

It is proposed to maintain the operational calendar & contact details within an Excel-file. Below a proposed scheme is shown:

Last Update: XX.XX.XXXX						
List of operational contact details				Operational Calendar		
Role	Contact Name	Phone number	Email	W1	W2	W..n
X						
Y						

Annex 10. List of Operational Data to Publish

This annex provides an overview of the publication of operational data during ATC based market coupling: definition of data, unit to use for publication and the entity responsible for the publication for normal operation, fall back and roll back. The obligation to publish these operational data, stems from European regulation and the rules on transparency (except for the market results).

Annex 11. License Agreement

Minimal or Extended license agreement for the mathematical algorithm on the basis of which among others price and volume calculation of the coupled markets will take place

- Parties : the “Licensors”; the “Licensee”;
- WHEREAS setting the context
- Interpretation – definitions – Interpretation
- Subject matter
- License : type of Granted License (Minimal License) - Permitted Use upon payment of the license fee - License Term - Geographical Scope - Future software versions
- Delivery
- License Fee and payment conditions
- Warranty
- Title and (Intellectual) Property Rights
- Confidentiality
- Limitation of liability
- Entry into force, duration and termination
- Governing law and disputes
- Varia

Annex 12. Simulation Facility Services

I.- Description of the Simulation Facility Services rendered to the TSOs

In accordance with Article 9 of the Agreement, the PXs shall jointly provide the Simulation Facility Services to the subscribing TSO(s). Subscription to the Simulation Facility Services entitles to the following services:

The PXs have appointed as the PX rendering the Simulation Facility Services to the subscribing TSO(s).

II.- Functionalities of the Simulation Facility

III.- Fees for the Simulation Facility Services

IV. Invoicing for the Simulation Facility Services

V. Termination of the subscription to the simulation facility services

Annex 13. Change Control Procedure Application

Format: Excel-file

Annexes indicated as "in scope" of the Change Control Procedure require the implementation of the Change Control Procedure before the SC decision/signature process

CHANGE CONTROL PROCEDURE APPLICATION	
Annexes modifiable by Steering Committee decision	In scope of the Change Control Procedure?
Annex 2: PARTIES' CONTRACTUAL CONTACT DETAILS	
Annex 3: SUBSIDIARY AND OTHER SPECIFIC CONTRACTS OVERVIEW	
Annex 4: RULES OF INTERNAL ORDER	
Annex 5: MC REQUIREMENTS	
Annex 6: LIST OF COMPONENTS	
Annex 7: CHANGE CONTROL PROCEDURE	
Annex 8: PROCEDURES	
Annex 9: TEMPLATE OPERATIONAL CALENDAR & CONTACT DETAILS	
Annex 10: LIST OF OPERATIONAL DATA TO PUBLISH	
Annex 12: SIMULATION FACILITY SERVICES	
Annex 15: MANAGEMENT OF THE CWE MC ROUNDING ENERGY	

Framework Agreement/Annexes modifiable by signature of all Parties	In scope of the Change Control Procedure? *
FRAMEWORK AGREEMENT MAIN BODY	
Annex 11: LICENSE AGREEMENTS	
Annex 14: CHANGE CONTROL PROCEDURE APPLICATION	

Annex 14. Management of the Rounding Energy

1. Definition of Rounding Energy :

- (a) The net positions of the Hubs resulting from the Market Coupling calculation (the mathematical algorithm on the basis of which among others price and volume calculation of the coupled markets will take place) are rounded. Following this rounding process, it can happen that the rounded net position values do not strictly sum up to zero.
- (b) For each Hub, bilateral exchanges are also rounded by the TSO Common System. Following this rounding process, it can happen that, for a given Hub, the sum of the bilateral exchanges do not strictly sum up to the net position of this Hub.

These two rounding processes result in a “rounding energy” on each Hub, which is mathematically equal to the difference between the net position of the Hub and the sum of bilateral exchanges of the Hub; this “rounding energy” per Hub is a combination of (a) and (b) described above (the “**Rounding Energy**”).

For a given Hub and a given hour, the Rounding Energy can be either deficit energy or surplus energy, depending on the Market Coupling Results and bilateral exchanges results.

2. Management of Rounding Energy

2.1. Local management

Each respective CCP manages Rounding Energy on a local basis, meaning that the rules for physical management and financial settlement of the Rounding Energy are defined between the local TSO(s) and the respective CCP.

2.2. Cost recovery

Provided such costs/income occur, TSOs undertake to bear the following real and accurate costs/incomes related to physical and financial management of the Rounding Energy on a local basis and under the modalities defined locally (on a country basis). These costs/incomes are:

- (a) cost/income linked to the purchase/sell of the rounding energy by the CCPs at spot market price on their respective power exchanges;
- (b) cost/income linked to the local imbalance on the respective CCPs’ balancing perimeters;

The treatment of any additional costs for handling the Rounding Energy has to be negotiated and decided locally between the TSO and its respective CCP.

2.3. Physical management of Rounding Energy

The concerned CCP accounts for the Rounding Energy. Where and in so far as this implies an imbalance of the CCP on the concerned Hub, this imbalance is affected to the TSO(s) on a local basis.

2.4. Technical management of Rounding Energy

The Rounding Energy is calculated in the Cross PX Clearing Systems of the PXs

This information is then transmitted to the CCPs IT system for Cross Border Nomination and financial settlement.

2.5. Financial settlement of Rounding Energy

Provided such costs/income occur, TSOs undertake to bear the costs/income related to the management of the Rounding Energy on a country basis.

2.6. Contractual arrangements for Rounding Energy

The contractual agreements between the respective CCPs and TSOs for Rounding Energy are formalised at the local level, on a bilateral basis.

Annexes

General Framework Agreement organizing the Day Ahead Market Coupling between and

December 2018

LIST OF ANNEXES AS REFERRED TO IN THE GENERAL FRAMEWORK AGREEMENT

- Annex 1** DEFINITIONS
- Annex 2** PARTIES' CONTRACTUAL CONTACT DETAILS
- Annex 3** SUBSIDIARY AND OTHER SPECIFIC CONTRACTS OVERVIEW
LIST OF SUBSIDIARY AGREEMENTS
- Annex 4** RULES OF INTERNAL ORDER
RIO OF THE STEERING COMMITTEE
RIO OF THE OPERATIONS COMMITTEE
- Annex 5** MC REQUIREMENTS including HLFA, Algorithm and external interface requirements
- Annex 6** LIST OF COMPONENTS
- Annex 7** CHANGE CONTROL PROCEDURE
- Annex 8** PROCEDURES:
 - GLOSSARY
 - RECEPTION AND INTEGRATION OF ATC VALUES IN THE MC SYSTEM
 - TRANSFER OF CALCULATION RESULTS AND VALIDATIONS BETWEEN PX TRADING SYSTEMS, MC SYSTEM AND TSO COMMON SYSTEM
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 - INCIDENT COMMITTEE PROCEDURE
 - COMMUNICATION TO MARKET PARTICIPANTS
 - LONG CLOCK CHANGE
 - MC SYSTEM SWITCH AND POSSIBLY RESET OF THE MC SYSTEM
- Annex 9** TEMPLATE OPERATIONAL CALENDAR AND TEMPLATE CONTACT DETAILS
- Annex 10** LIST OF OPERATIONAL DATA TO PUBLISH
- Annex 11** LICENSE AGREEMENTS
- Annex 12** SIMULATION FACILITY SERVICES
- Annex 13** CHANGE CONTROL PROCEDURE APPLICATION
- Annex 14** MANAGEMENT OF THE MC ROUNDING ENERGY

Annex 1. Definitions

Agreement:	this General Framework Agreement, including its Annexes;
Algorithm:	refers to Algorithm described in Annex 5;
Algorithm Requirements:	the requirements regarding Algorithm as agreed upon by the Parties and set forth in <u>Annex 5</u> ;
Allocation or Allocate:	the process by which a Physical Transmission Right is attributed as a result of the Market Coupling to the concerned CCP via the PX;
Amicable Dispute Resolution Period:	the period for amicable settlement, in accordance with <u>Article 22</u> of this Agreement, of disputes arising under or in connexion with this Agreement, which shall not exceed four (4) months (unless decided otherwise by the Parties) as under <u>Article 22</u> of this Agreement;
Annex:	any document attached to this Agreement, which forms an integral part of this Agreement;
Article:	any article of this Agreement, including its Paragraphs and sub-Paragraphs;
ATC Based Capacity Calculation Method:	coordinated method applied by the TSOs in order to define the ATC, compatible with security standards applicable in all Hubs, which will be allocated through the Market Coupling;
ATC Based Launch Date:	the date of launch of the ATC Based Market Coupling as decided by the Steering Committee ;
ATC Based Master Test Plan:	the document jointly approved by all the Parties, aiming at giving a clear and complete view on the test approach, the schedule, the activities, the deliverables and the launch criteria related to these deliverables to assure readiness of all Parties to launch ATC Based Market Coupling, to be delivered in the testing of the ATC Based Market Coupling before the ATC Based Launch Date;
ATC Based Market Coupling :	the Market Coupling using coordinated ATC values;
Available Transfer Capacity ("ATC"):	part of the NTC made available by the TSOs to the Market Coupling;
Available Interconnection Capacity:	means ATC for ATC Based Market Coupling;
Back Up Circumstances:	operational circumstances in which failure on a particular process step occurs, requiring the application of a Backup Procedure to recover such failure for this particular process step;
Back up Procedure ("BUP"):	the procedure attached in <u>Annex 8</u> describing the actions to be taken during the Market Coupling operations by the Parties or the entity(ies) designated by them in the event Backup Circumstances occur;
Best Efforts:	the obligation for a Party to take, in the performance of its commitments under this Agreement, all reasonable actions and measures and more generally doing everything that may reasonably be expected from a normal, diligent and reasonable professional placed in the same circumstances;
Business Day:	means a day on which banks located in all the respective places of the registered office of the Parties concerned are open for normal banking business;

Central Counter Party ("CCP"):	this is an entity (not a subcontractor) designated by each PX;
CEO:	chief executive officer, empowered to represent a Party;
Change Control Administrator:	The person responsible for the central management and administration of changes under the Change Control Procedure, as designated under the terms and conditions of Section 1.2 of the Change Control Procedure;
Change Control Procedure:	the procedure set forth in <u>Annex 7</u> of this Agreement;
Change of Control:	Direct or indirect merger and/or acquisition by a third party of: <ul style="list-style-type: none"> a) shareholding and/or holding of voting rights; b) holding of any other right permitting to direct or control the operations; or c) any decision making bodies that manage the business of a Party;
Components:	the whole set of different information and communication technology systems (software and hardware), interfaces between these systems set forth in <u>Annex 6</u> of this Agreement, which are necessary for the functioning of the Market Coupling;
Component List:	the list of Components set forth in <u>Annex 6</u> of the Agreement;
Confidential Information:	shall have the meaning set forth in <u>Paragraph 15.1.1</u> of this Agreement;
Congestion	means a situation where the sum of day-ahead implicit demand for capacity exceeds the daily Available Interconnection Capacity;
Congestion Revenue:	the revenue arising from the implicit auctioning of the Available Interconnection Capacity in case of Congestion;
XXX Executable Software:	the industrialised software, application or computer program in executable form, used by the Market Coupling System in which the algorithm is implemented;
XXX Executable Software Documentation:	the supporting documentation, and information necessary to use the XXX Executable Software as appended to the Minimal and Extended License Agreement;
Critical Deadline:	the latest possible time for the transmission of an information according to the operational procedures as set forth in <u>Annex 8</u> ;
Cross Border Exchange:	the cross border electricity flow resulting specifically from the Market Coupling;
Cross Border Nomination:	In the event of Cross Border Exchange, the exchange declaration to be sent by the designated CCP to one of the two TSOs concerned by such Cross Border Exchange, indicating the power, expressed in MW, which it wishes to exchange at a specific border in a given direction for each hourly period of a given day. A Cross Border Nomination shall correspond to the received Programming Authorisation;
Cross PX Clearing:	The physical balancing and financial clearing of the Cross Border Exchanges resulting from the Market Coupling, as defined in Paragraph 6.2.6 of this Agreement;

Cross PX Clearing Systems:	Module developed by the PXs to receive and to treat the PA which will be transferred to the CCP System after their treatment in the system;
Market Coupling:	the coordinated mechanism implemented by the Parties in the Region in accordance with the terms and conditions of this Agreement, whereby the supply and demand curves of different PXs are matched by the PXs taking into account the relevant network constraints as provided by the TSOs;
Market Coupling Project:	the project during which the design , the development and the implementation of the Market Coupling took place;
TSO Common System:	the system to be made available jointly by TSOs consisting in: <ul style="list-style-type: none"> • Pre-Coupling Function: calculating Available Interconnection Capacity on the basis of grid forecasts delivered by each TSO; • Post-Coupling Functions: <ul style="list-style-type: none"> • net position validation: verifying, on the one hand, that the PX Net Positions calculated by the MC System are compatible with Available Interconnection Capacity as determined by the Pre-Coupling Function; and • bilateral exchange calculation: calculating, on the other hand, cross border data flows resulting from the previously determined net positions. • Communication Layer: the software and protocols allowing the TSO Common System to interact with other systems.
Defaulting Party:	a Party not fulfilling one or more of its obligations under this Agreement;
Defendant Party:	shall have the meaning as set forth in <u>Paragraph 16.5</u> of this Agreement;
Design Phase:	the phase of the Market Coupling Project during which the Parties have established the high level architecture and business process of Market Coupling, have analysed and decided upon the different options for market coupling algorithms, possible organisation and governance structures and during which the TSOs have analysed the possible ATC network representations;
European Code of Conduct for Mediators:	the code of conduct for mediators, as developed with the assistance of the European Commission, available on the website of the European Commission;
Exit Date:	date at which the exit of a Party under <u>Article 20</u> enters into effect;
Extended License Agreement:	is the license agreement as attached in <u>Annex 12, Chapter 12.2</u> ;
Fall Back Circumstances:	operational circumstances in which an incident occurs that cannot be remedied through the Back Up Procedure and in which the Parties shall revert to the application of the Fall Back Procedure;
Fall Back Procedures:	the procedures in <u>Annex 8</u> describing the actions to be taken during the Market Coupling operations by the Parties or the entity(ies) designated by them in the event Fall Back Circumstances occur;
Force Majeure:	any event or situation that is (i) not reasonably foreseeable, (ii) beyond the reasonable control of the affected Party, (iii) not due to the fault or negligence of the affected Party, (iv) which cannot reasonably be avoided or overcome, and (v) which makes it impossible for this Party to fulfil, temporarily or definitively, its obligations under this Agreement;
Full Decoupling:	the situation where no Market Coupling Results can be produced, leading to Fall Back Circumstances;

Framework Agreement:	means Agreement;
Hardship:	any extraordinary event or any extraordinary change of circumstances that is (i) independent of the will of the affected Party(ies); (ii) beyond the control of the affected Party(ies); (iii) unforeseeable at the time of conclusion of this Agreement, and (iv) which fundamentally and negatively affects for a substantial period of time, for the concerned Party(ies), the initial contractual equilibrium of this Agreement;
High Level Functional Architecture for Normal Mode and Fall Back Mode :	the high level description of systems and interfaces necessary for operating the Market Coupling for Normal Circumstances and Fall Back Circumstances set forth in <u>Annex 5</u> (Chapter 5.1 and 5.2) of this Agreement;
Hub:	a geographical area for which a single clearing price is calculated for each hour of the day;
ICC:	International Chamber of Commerce;
ICT:	information and communication technologies;
Implementation Phase:	the phase of the Market Coupling Project during which the Parties have developed all Components necessary for the implementation and for the functioning of Market Coupling;
Individual Component:	Component belonging to one of the Parties individually as described in <u>Paragraph 5.5.1</u> and <u>Paragraph 5.6.1</u> respectively;
Intellectual Property Rights (“IPR”):	means all existing and future, registered or unregistered, intellectual, industrialised, commercial and all other property and similar or related rights, title and interest including applications for the same, in the Region and/or elsewhere in the world, including but not limited to copyrights, neighbouring rights, portrait rights, moral rights, sui generis database rights, models and design rights and all other possible rights in the field of literature, arts and science, rights to patents or patent applications, topography rights, rights to know-how or trade secrets, and all other rights on intellectual creations in the field of technology, trademarks, trade names rights to statutory and commercial denominations, domain names and all other possible rights to signs used in business to distinguish one good or service from another in trade;
Interface:	content and format of the information to be transferred;
IT:	Information technology;
Joint Parties’ Developments:	shall have the meaning set forth under <u>Paragraph 10.1.1.1</u> of this Agreement;
Joint PX Component:	shall have the meaning set forth in <u>Paragraph 5.3.1</u> of this Agreement;
Joint TSO Component:	shall have the meaning set forth in <u>Paragraph 5.4.1</u> of this Agreement;
Licensed Material:	the material licensed to the TSOs as the case may be and as defined in article 1.1 of the standard form for the Minimal License Agreement, respectively article 1.1 of the standard form for the Extended License Agreement as attached as Annex 12
Market Coupling Requirement; or MC Requirement:	the requirements with which Market Coupling must at all times comply, as set forth in the documents enumerated under <u>Paragraph 5.2.1.</u> of this Agreement;

Market Coupling Results:	the results, in the framework of the Market Coupling, calculated by the PXs consisting of, for each PX: <ul style="list-style-type: none"> - preliminary price, preliminary PX Net Position per hour per Hub; - winning block sets per Hub; - shadow price per hour per Hub; - rounded price, rounded net position per hour per Hub; - final price, final PX Net Position per hour per Hub; as described in the High Level Functional Architecture for Normal Mode (Chapter 5.1 of Annex 5);
Market Coupling System; or MC System:	the system (software and hardware) in which the XXX Executable Software is embedded and that interfaces with other IT systems involved in Market Coupling, in accordance with the requirements and specifications set forth in <u>Annex 5</u> of this Agreement;
Market Rules:	the terms and conditions regarding the organisation, the functioning and the access to a PX, governing the relationship between a PX and its members;
Minimal License:	the license described in the Minimal License Agreement;
Extended License:	the license described in the Extended License Agreement;
Minimal License Agreement:	is the license agreement as attached in <u>Annex 12</u> ;
MoU:	the memorandum of understanding signed by the Parties on the [Date] ;
MPLS:	multiprotocol label switching;
MPLS Cloud:	a mechanism in high performance telecommunications networks which directs and carries data from one network node to the next, thereby making it easy to create virtual links between distant nodes. It can encapsulate packets of various network protocols;
Normal Circumstances:	normal Market Coupling operational circumstances, during which no incident occurs;
Normal Procedure (“NOR”):	the procedure attached in Annex 8 describing the actions to be taken during the Market Coupling operations by the Parties or the entity(ies) designated by them in order to operate the Market Coupling under Normal Circumstances;
Net transfer capacity (“NTC”)	the maximum cross border exchanges between Hubs compatible with security standards applicable in both Hubs and taking into account the technical uncertainties on future network conditions;
Operational Calendar:	the calendar of operations determining responsibilities in time and submitted by the Parties within the deadlines and under the conditions as mentioned in Paragraph 6.1.4. of this Agreement;
Operational Procedures:	the procedures set forth in Article 6 of this Agreement and further developed in Annex 8 of this Agreement;
Paragraph:	any paragraph of this Agreement, including its sub-paragraphs;
Parties:	all the signatories of this Agreement, referred to collectively;
Party:	any of the signatories of this Agreement, referred to individually;
Physical Link:	hardware through which information passes in the event of data transmission;

Physical Transmission Right (“PTR”):	the right granted to a market participant under ATC Based Market Coupling to use a specified quantity of the ATC in the export direction, expressed in MW, for each hourly period of a given day. In the framework of the ATC Based CWE Market Coupling, the PTR is granted to the CCP through the local PX if applicable;
Price Coupling:	market coupling where the market clearing prices and PX Net Positions are determined in a single step;
Programming Authorisations (“PA”):	the total, for each TSO border, for each hourly period of a given day, of the Physical Transmission Rights granted to the CCP via the PX where applicable. The Programming Authorisation specifies clearly for each Physical Transmission Right the PX and/or the CCP concerned;
PX Net Position:	the rounded net position (i.e. total import or export) per hour per Hub for each of the PXs;
Roll Back Circumstances:	operational circumstance in which it is necessary to revert to the systems and operational processes as described in Chapter 8.17 of Annex 8 ;
Rounding Energy:	shall have the meaning as provided in section 2 of Annex 15 ;
Rules of Internal Order (“RIO”):	the rules of internal order for the respective committees created under this Agreement as described in Annex 4 and in Chapter 8.15 (section 1.3) of Annex 8 ;
Shadow Auction System:	system that enables to organise explicit auctions for day ahead Capacity Allocation after Full Decoupling pursuant to the Fall Back Procedure set forth in Annex 8 ;
Simulation Facility:	a web based application embedding XXX Executable Software, which allows simulating market coupling sessions based on a mix of historical and artificial input data and also on the historical Market Coupling Results, and which allows reporting on the output of these simulations;
Simulation Facility Services:	The services described in Annex 13 of this Agreement;
Specific Agreements:	the agreements listed under Annex 3.2 of this Agreement;
Steering Committee (“SC”):	the committee referred to under Paragraph 11.1.1 of this Agreement;
Steering Committee Secretary (“SC Secretary”):	the secretary of the SC mentioned under Paragraph 11.1.3 of this Agreement and performing tasks as mentioned in the RIO of the SC;
Subsidiary Agreements:	the subsidiary agreements referred to under Paragraph 3.1 of this Agreement;

Annex 2. Contractual Contact Details

Firm	Address	Name of representative + Contact Details

Annex 3. LIST OF SUBSIDIARY AGREEMENTS

List showing related contracts that have been agreed on in the context of this Market Coupling Framework Agreement. List has to be finalized based on the Market Coupling design selected for each project.

Proposed form: Excel-file.

Contract Title	Parties involved		Subcontractors/Service providers	
	Party 1 (PX/TSO)	Party 1+n (PX/TSO)	Party 1	Party 1+n
All-Party Cooperation Agreement				
All-TSO Cooperation Agreement				
“serviced PX” agreement				
Agreement PX-TSO information agreement				
Joint TSO capacity calculation agreement				
Auction Rules				
CCP, PX and/or TSO shipping and nomination agreement				
Local agreement TSO-PX				
Hosting and support SLA – for common TSO system				
License agreement (limited or extended)				
Simulation Facility Services				
Clearing settlement cooperation agreement between PX and CCP				
.....				

Annex 4. RULES OF INTERNAL ORDER OF THE STEERING COMMITTEE

These Rules of Internal Order set forth the decision making process rules of the Steering Committee ("SC") under the Agreement. All capitalised terms not expressly defined herein shall be construed as defined in the Agreement.

1. Composition of the SC

1.1. Voting members

The official voting representative of each Party in the SC is designated in writing. The list of such voting representatives including their contact details are held by the Secretary.

A Party may change its voting representative in the SC provided such change is notified to the Secretary at least three (3) Business Days before the SC meeting that the new voting representative attends.

Each Party is, with respect to each meeting of the SC, duly represented either:

- by the voting representative (as designated by it in the conditions described above); or
- if the voting representative cannot attend a meeting of the SC, by any other person duly mandated and empowered to take decisions binding upon its company on all items of the agenda.

If a Party is unable to attend a SC meeting, such absent Party mandates the SC representative of another Party. In such case the absent Party:

- informs the Secretary at least three (3) Business Days before the SC meeting it cannot attend; and
- gives the name of the person representing the Party on its behalf.

In case the absent Party does not wish to mandate, it is deemed to accept any decision of the SC on the topics of the agenda except in the cases under [point 3.2](#).

One voting representative may represent more than one Party provided it is duly mandated to do so.

1.2. Non-voting members

Each Party is entitled to designate non-voting representatives who are entitled to participate to the meetings and deliberations of the SC, but are not entitled to vote.

In case a Party wishes to designate a non-voting representative for a particular SC meeting, this Party notifies to the Secretary the name of the non-voting representative and the date of the SC meeting he/she attends at least three (3) Business Days before the SC meeting that the non-voting representative attends.

1.3. Chairman

TSOs elect their co-chairman among the voting representatives of the TSOs.

PXs elect their co-chairman among the voting representatives of the PXs.

Each chairman may, in exceptional circumstances which prevent him/her to exercise his/her functions at a meeting of the SC, delegate such task to the other Co-chairman or to a voting representative of the other Parties.

1.4. Secretary

The Secretary is ensured by one Party on rotating basis. The Secretary is yearly chosen by the SC upon proposal of the Parties.

The Secretary has no voting rights. For the avoidance of doubt, the Secretary cannot be mandated as voting representative of one of the Parties even in exceptional circumstances when the official voting representative cannot attend a SC meeting.

The Secretary assists the SC, amongst others by:

- Drafting the agenda, preparing session files of meetings and notices and sending them, along with the Co-chairmen;
- Preparing the attendance list of the meetings;
- Verifying before each SC meeting that the voting representatives attending the SC meetings have been either listed on the list of official representatives or announced in case of replacement. In the event of representation by another Party, the Secretary verifies whether a valid power of attorney has been given by the Party not attending.
- Ensuring the drafting and circulation of the minutes of the meetings and/or of decisions.

The costs of the Secretary are borne by the Party ensuring the Secretary for the corresponding year.

2. SC meetings

The SC meets at least quarterly except if the Co-chairmen consider such meeting is not necessary given the absence of matters to be discussed.

Any Party may at any time request the Secretary to convene a SC by sending a motivated written request to this effect to the Secretary with indication of the matters to be put on the agenda.

The notices for a meeting of the SC are notified by the Secretary in writing to the members of the SC at least ten (10) Business Days before such SC. The notices contain the date, place and time as well as the agenda of the meeting. Any supporting documentation to the points on the agenda is sent at least five (5) Business Days before the meeting.

A Party may propose to add issues on the agenda of a meeting of the SC, and these proposals are taken into account provided they have been received by the Secretary at the latest 5 (five) Business Days before such SC.

The SC may hold ad hoc SC meetings for urgent matters at any time, without prior notice period.

A member of the SC who attends the meeting or is represented to it is considered as having received due notice.

The duty of the practical organisation of the meetings of the SC is borne by each Party on a rotating basis. The Secretary keeps track of the rotation and indicates within reasonable period of time prior to the SC which Party is responsible for organising the meeting. The meeting costs (hosting, organisation, etc.) are borne by the Party organising the meeting, it being understood that the travel costs of each Party's representative is borne by the Party(ies) he/she is representing.

The SC may meet either physically or by distant meeting devices (such as e.g. conference call, video call, written procedure, etc.).

3. Decision-making rules within the SC

3.1. Unexpected items

The SC may only decide on the topics of the agenda circulated by the Secretary in accordance with these RIO, except in the event of Urgent Decisions, in which case the procedure and terms for Urgent Decisions set forth in point 4.2 of these RIO applies.

Unexpected Item(s) may be subject to decision at the meeting during which the Unexpected Item(s) arose, provided that all representatives are duly mandated. A representative indicates when he/she is not duly mandated in such case.

Decisions on Unexpected Item(s) are taken, in principle, at the next available SC, by which time the members of the SC have sought the necessary power and authority to decide on the Unexpected Item(s).

However in case Urgent Decisions are concerned, decisions on Unexpected Item(s) are taken at an ad-hoc conference call which takes place ten (10) Business Days at the latest following the meeting during which the Unexpected Item(s) arose and, for clarity's sake, is subject to the general rules on quorum and decision making. By the time of this ad-hoc conference call, the voting members of the SC have sought the necessary power and authority to decide on the Unexpected Item(s).

3.2. Exceptional circumstances

By derogation to point 1.1 of these RIO, in case a Party, due to exceptional circumstances, should not be present or represented at a meeting of the SC, then decision(s) can however be taken by the other SC members attending, subject to the possibility, for the Party who did not attend, to challenge such decision(s) in writing within five (5) Business Days two (2) in case Urgent Decisions are concerned) after sending of the minutes in accordance with these RIO. Absent such written challenging, the decision(s) is deemed final and binding, pursuant, for the remainder, to the provisions set forth below under point 4 of these RIO.

In case a Party challenges such decision(s), the challenged decision(s) is put at the agenda of the next available SC meeting. The Party who challenged the decision(s) attends this next SC meeting. In its absence, the decision(s) is deemed final and binding as of the close of the meeting.

In case a Party challenges a(n) Urgent Decision(s), the challenged Urgent Decision(s) is put at the agenda of an ad hoc conference call, which takes place (ten) 10 Business Days at the latest following the challenges of the Urgent Decision(s). The Party who challenged the Urgent Decision(s) attends this conference call. In its absence, the Urgent Decision(s) are deemed final and binding, pursuant, for the remainder, to the procedure set forth under point 4.2 of these RIO.

4. Recording of SC decisions

4.1. Normal procedure

The decisions of the SC are recorded by the Secretary in minutes.

The draft minutes are circulated to the members of the SC by the Secretary, within a maximum of three (3) Business Days of the meeting concerned.

In case the next SC meeting takes place within one (1) month after the previous meeting, members of the SC may comment on the minutes within ten (10) Business Days after sending of the minutes in accordance with these RIO (it being understood for the avoidance of any doubt that, except in the strict circumstances described in 3.1 and 3.2 above, the decisions themselves cannot be challenged).

The comments on the minutes received in the abovementioned deadlines are discussed at the next available meeting of the SC, until a final agreement is reached on the text of the minutes.

In case the next SC meeting does not take place within one (1) month after the previous meeting, the approval of the minutes is organised by the Co-chairmen, assisted by the Secretary, within one (1) month of the concerned meeting.

In absence of comments, minutes are deemed approved within one (1) month.

The decision(s) as recorded in these finalised minutes are binding, as approved, as of close of the meeting. A copy of these finalised minutes is circulated to the members of the SC by its Secretary, within a maximum of two (2) Business Days of the meeting concerned.

The Parties agree not to organise a common register of minutes and each Party ensures its own record keeping of the copies of the minutes of the SC it receives from the Secretary.

4.2. Urgent decisions

Urgent Decision(s) of the SC are recorded by the Secretary in a separate written decision document, prepared, shown and discussed during the SC meeting. Except in the strict circumstances described in 3.1 and 3.2 above, such separate decision document are immediately binding, as approved, as of close of the meeting.

A copy of this separate decision document is circulated to the members of the SC by the Secretary, on the very same date of the meeting. This separate decision document is also reflected in the minutes of the SC meeting during which it was adopted. Such minutes are elaborated in accordance with the provisions above, it being understood, for the avoidance of any doubt, that neither the Urgent Decision(s) nor the separate decision document can be subject to any further commenting.

5. Possible Subcommittees of the SC

The SC may organise for committees or working groups provided the SC demonstrates such committees or working groups are necessary to assist the SC. In such event, the SC determines the composition and the modalities of the functioning of such committee or working group

- **Operations Committee**
- **Incident Committee**
- **Development Group**

The Development Group performs studies and analyses upon request of the SC.

In particular, the Development Group performs the following tasks:

- Analysis of change request related to algorithmic matters;
- Simulation and validation studies;
- Any other studies or analyses requested by the SC.

Annex 5. MC REQUIREMENTS INCLUDING HIGH-LEVEL FUNCTIONAL ARCHITECTURE, ALGORITHM AND EXTERNAL INTERFACE REQUIREMENTS

5.1. HIGH-LEVEL FUNCTIONAL ARCHITECTURE AND END-TO-END BUSINESS PROCESS

6. Introduction

The main purpose of this document is to describe the High-level Functional Architecture including the flows, the interconnection, and the interfaces that will be the basis for the procedures and for the IT design.

We define the Market Coupling (MC) as the set of MC system components and arrangements created or adapted with the explicit aim of establishing coupling of the day-ahead electricity markets covering the [country 1 ... country n] countries of the ... zone.

Among the many perspectives possible, the present document adopts one particular perspective on the MC: that of information flows. This perspective can be labelled the information perspective. At a high level of abstraction, the document tries to answer the questions below:

1. *Which automated system components* play a role in the MC?
2. *Which human agents* (the 'Agents') play a role in the MC?
3. *What information* is produced by any of the MC components and Agents in the MC (only information relevant to the MC is taken into consideration)?
4. *What information* is exchanged between any of the MC components and Agents in the MC (applying the same restriction as item 3)?
5. In *what sequence* is the information produced by and exchanged between the S MC components and the Agents?

Other perspectives on the solution include the following and can be found in the related documents.

- The legal and governance perspective (concerned with roles and responsibilities, ownership, decision making and legal entities) reflected in the Framework Agreement and on subsidiary agreements.
- The algorithmic perspective (concerned with the rules applied in the calculation of the market coupling result and other pieces of information) reflected in the MC requirements.
- The IT perspective (concerned with the design and development of the MC components and the interfaces between them) reflected in the IT systems and interface specifications.
- The operational perspective (concerned with the procedures followed to operate the Systems) reflected in the procedures.

The Main assumptions:

- Shipping Agent : This HLA is realised on the main assumption that the Cross-PX clearing will be done via the Clearing Houses;
- Fallback system (Shadow auction): A specific HLA including the Shadow Auction will be edited in a separate document.

The below shown architecture is drawn on the basis of the design assumption that the Cross-PX clearing process is happening through the clearing houses.

7. High-level functional architecture and business process

This chapter contains the high-level functional architecture and business process with the current design assumption. The architecture diagram is also available as a separate PowerPoint sheet for better legibility.

7.1. Architecture overview

The architecture overview shown below was jointly drafted. It is explained in the following sections of this chapter, which are devoted to:

- The system components shown,
- The Agents shown,
- The information produced and exchanged,
- The indicative sequence in which the information is produced and exchanged,
- Remaining questions regarding the information flows (protocol flows and other) and assumptions,
- A glossary, explaining the terms used in the diagram and the remaining text of this chapter.

(...)

7.2. Systems

The list of systems below reflects the current design assumption.

In the architecture diagram, the automated system components further called Market Coupling Components that are expected to play a role in the Market Coupling are indicated with rectangles. These systems may either be existing systems adapted to the Market Coupling or systems to be newly built.

The MC Components distinguished are logical or virtual systems. This means, they do not necessarily correspond to single software applications or to dedicated computer hardware. The latter entities belong to the IT perspective. In the information perspective, a System can be thought of as a set of information manipulation functions for which it is convenient to consider as a separate entity.

The following Systems are distinguished: XXX

-
-

Systems are interconnected via Interfaces. Each Interface serves one or more information flows. The different information flows are defined in 2.7 with an indicative sequence.

7.3. Hosting, Operations and Interfaces

The information about the hosting, the operations and Interfaces are in the document called: HLA Implementation details.

7.4. External Agents

The Agents are represented in the diagram as abstract human figures.

Just like the MC components are abstract systems, the Agents distinguished are logical or virtual agents. An Agent is a non-automated entity interacting with one or more Systems or other Agents in

the information perspective on the Solution. An Agent is distinguished according to the role he plays. Conversely, millions of human beings appear as a single agent ('The General Public').

The following Agents are distinguished.

- The 'Market Participant' Agent represents the PX members.
- The 'General Public' Agent represents the recipient of all published data due to transparency requirements.

7.5. Information produced and exchanged

The information produced and exchanged is represented in the diagram by arrows with a label. The small arrows point in the direction of the information flow. The circular arrows indicate information produced in processes internal to a System. The label indicates the contents of the piece of information transferred or produced. The sequence of production and transfer of information is shown in section 2.5 of this document. The numbering of the information flows doesn't always respect the sequence of the actions.

The real frequency, timing and sequences are being defined in the procedures

It should be stressed that only flows of information are shown in the diagram. Other flows, like electricity and money flows, are not taken into account.

7.6. Sequence in which information is produced and exchanged

The numbering of the information flows doesn't always respect the indicative sequence of the actions.

More specifications as the responsibilities, the format and the interfaces are defined in the HLA Implementation details

Flow Nb	Info	Produced by	From	To	Predecessor

The below table contains an overview of the recipient of the programming authorizations, i.e. the CCP acting as BRP (or attached to an existing BRP for some countries), i.e. performing the cross-border TSO nominations and the Hub nominations.

Direction of Flow	PX1	PX2

7.7. Protocol flows

The high-level functional architecture and business process primarily includes the systems, agents and information flows between these which are crucial in establishing market coupling in the region. Some of these flows require confirmation or validation. The flows providing such validation or confirmation are referred to as 'protocol flows' as they owe their existence to a (validation or confirmation) protocol. In the current version of the architecture, the agreed protocol flows have been incorporated.

[*Number of protocols*] protocol flows are implemented.

- [Protocol flow X]
- [Protocol flow Y]

These flows are described below:

[Flow X]

Description:

[Flow Y]

Description:

Advantages and disadvantages of protocol flows

Adding extra flows for confirmation and validation has the advantage of providing additional comfort on the correctness of certain pieces of information, which could be relevant when it is transferred between separated entities in a contractual framework. But it comes at a cost: it adds throughput time and complexity to the operational procedures. Adding complexity also means adding risk, as each procedural step is a potential point of failure, and adding project work, as it will require testing. The question to ask is: 'Is the additional comfort really necessary and does it outweigh its cost?'

7.8. Glossary

We agree to use the following terms in the functional architecture, in the sense indicated in this glossary. We try to avoid using other terms to refer to the same entities.

Aggregated Order Information: set of all relevant data representing all Orders received by a Power Exchange for a given day. The precise aggregation of this data is for the Algorithm Workstream to define.

ATC: Available Transmission Capacity is the part of NTC that remains available, after each phase of the allocation procedure, for further commercial activity.

Congestion Revenue: total TSO income from selling in importing Market minus total TSO cost from buying in exporting Market.

Congestion Revenue Share: part of the Congestion Revenue which comes back to each TSO, after sharing between TSOs.

Critical Element Flows: the flows on all relevant Critical Network Elements as calculated by the MC System.

Critical Network Elements: it was agreed that this term does not require further definition for the purpose of this document.

Cross-border TSO Exchanges: (also known as Programming Authorisations) the exchanges (exchanges being anticipated CCP nominations) between interconnected TSOs insofar as these are exchanges between two hubs. This implies that cross-TSO exchanges within a Hub are excluded.

Final Net Position: for each Settlement Period of a given day in a given Market, the net quantity of electricity to be exported/imported by an Exchange, as validated by a Power Exchange and accepted by the TSOs.

Final Prices: price per Settlement period of a given day in a given Market as validated by a Power Exchange.

Flow Model Parameters: the complete set of parameters describing the grid in the region taken as an input by the MC System.

Grid Forecast: prognosis of demand and generation and the resulting physical flows in the grid.

Hub: a geographical area for which always one price per price period is calculated.

Individual Results: For each Settlement Period of a given day, Market Price and Schedule of a Market Participant.

Market (or Day-Ahead Market): platform run by a Power Exchange where bids and offers on electricity to be delivered the following day are matched in an auction process. In most cases a market is linked to a geographical area.

Market Participant: member of a power exchange trading in the day-ahead Market.

Matching: calculation of Market Results, as generally performed by a PX.

NTC: Net Transfer Capacity corresponds to the maximum exchange between two areas compatible with security standards applicable in both areas and taking into account the technical uncertainties on future network conditions.

Orders: order sent by Market Participants to the Exchanges. An order consists at least of a product, a price, a quantity, and a direction (purchase or sale). The order is a commitment to sell or buy (as specified in the order) the quantity specified in the order at the price specified in the order (or above the price in the case of sale, or below the price in the case of purchase), of the product specified in the order. Orders are either Divisible Hourly Orders or Block Orders.

Preliminary Net Position: for each Settlement Period of a given day in a given Market, the net quantity of electricity to be exported/imported by an Exchange, as calculated by the MC System.

Preliminary Prices: price per Settlement Period of a given day in a given Market as calculated by the MC System.

Programming Authorizations: see Cross-border TSO Exchanges.

PX net position: for each Settlement Period of a given day in a given Market, the net quantity of electricity to be exported/imported by an Exchange, as validated by a Power Exchange.

Scheduling Information: refers to the nomination or reservation by the market participants of long-term and day-ahead exchange programs with the TSOs.

Settlement Period: The minimum period of time for which Electricity is exchanged on the Day-Ahead Power Exchanges. The assumed Settlement Period is one hour of the following day.

Shadow Prices: for each Settlement Period of a given day, for each critical network element for that Settlement Period the marginal value of a single unit (MW) of capacity.

Technical Information which is input to the TSO back-end systems is to be specified by the TSOs.

Winning Block Set: set of contracted block orders.

5.2. HIGH-LEVEL FUNCTIONAL ARCHITECTURE AND END-TO-END BUSINESS PROCESS FOR SHADOW AUCTIONS

1. Introduction

The main purpose of this document is to describe the HLA including the flows, the interconnection, and the interfaces which will be the basis for the procedures and for the IT design of the Shadow Auctions.

Similarly to the case of the HLA established for the Market Coupling, with Shadow auction it is meant the set of systems, components and arrangements created or adapted to the aim to provide a fallback solution for the day ahead capacity allocation on the borders of the Region in case of Failure of the Market Coupling process at whatever stage.

As for the HLA document accompanying the graphical version of the HLA, the present document adopts one particular perspective on the Shadow Auction: that of information flows. The questions which this document tries to address are the same that have been listed in the twin paper for the Market Coupling, so they will not be repeated in this text.

Further on, this document clears the second assumption made in the HLA MC document: “Fallback system (Shadow auction): A specific HLA including the Shadow Auction will be edited in a separate document”.

2. High-level functional architecture and business process

This chapter contains the high-level functional architecture and business process with the current design assumption.

2.1. Architecture overview

The architecture overview shown below was jointly drafted. It is explained in the following sections of this chapter, which are devoted to:

- The system components shown,
- The Agents shown,
- The information produced and exchanged,
- The indicative sequence in which the information is produced and exchanged,
- Remaining questions regarding the information flows (protocol flows and other) and assumptions,
- A glossary, explaining the terms used in the diagram and the remaining text of this chapter

2.2. Systems

The list of systems below reflects the current design assumption.

Concerning the definition of the SA components, reference is made to the MC document, since their meaning (definition, semantic and nature) is not changing in this paper.

The following SA Systems are distinguished: XXX

Systems are interconnected via Interfaces. Each Interface serves one or more information flows. The different information flows are defined in 2.5 with an indicative sequence.

2.3. External Agents

The Agents are represented in the diagram as abstract human figures. Just like the MC components are abstract systems, the Agents distinguished are logical or virtual agents. An Agent is a non-automated entity interacting with one or more Systems or other Agents in the information perspective on the Solution. An Agent is distinguished according to the role he plays. In the HLA Shadow Auction the identified External Agents are the “Fallback participant”, i.e. the entity submitting shadow bids to the Shadow Auction System, and the FSO, the Functional system operator (of the MC System).

2.4. Information produced and exchanged

The information produced and exchanged is represented in the diagram by arrows with a label. The small arrows point in the direction of the information flow. The circular arrows indicate information produced in processes internal to a System. The label indicates the contents of the piece of information transferred or produced. The sequence of production and transfer of information is shown in section 2.5 of this document. The numbering of the information flows doesn't always respect the sequence of the actions.

The real frequency, timing and sequences are being defined in the procedures and in the business process.

It should be stressed that only flows of information are shown in the diagram. Other flows, like energy and money flows, are not taken into account.

2.5. Sequence in which information is produced and exchanged

Flow Nb*	Info	Produced by	From	To	Predecessor
1					
1+n					

*The numbering of the interfaces doesn't necessarily respect the sequence of the actions.

Indicatively, the revenues generated by a Shadow Auction process should be shared according to the same arrangements adopted for the Long Term revenues sharing.

2.6. Protocol flows

The high-level functional architecture and business process primarily includes the systems, agents and information flows between these which are crucial in establishing market coupling in the region. Some of these flows require confirmation or validation. The flows providing such validation or confirmation are referred to as 'protocol flows' as they owe their existence to a (validation or confirmation) protocol. In the current version of the architecture, the agreed protocol flows have been incorporated.

2.7. Physical Link

Numbering	Owner	Technology	Status
[FA1]		[Web Interface/e-mail/ Electronic Highway/ Internet mail/FTP/XXX]	[Existed/tested..]
[FA1+n]		[Web Interface/e-mail/ Electronic Highway/ Internet mail/FTP/XXX]	[Existed/tested..]

2.8. Glossary

We agree to use the following terms in the functional architecture, in the sense indicated in this glossary. We try to avoid using other terms to refer to the same entities.

ATC: Available Transmission Capacity is the part of NTC that remains available, after each phase of the allocation procedure, for further commercial activity.

Congestion Revenue: total TSO income from selling in importing Market minus total TSO cost from buying in exporting Market.

Cross-border TSO Exchanges: (also known as Programming Authorisations) the exchanges (exchanges being anticipated CCP nominations) between interconnected TSOs insofar as these are exchanges between two hubs [*HubX - HubY, HubY – HubZ*]. This implies that cross-TSO exchanges within a Hub are excluded.

Explicit Auction: Capacity allocation operated by CASC on behalf of the TSO's of the region. This type of auction is organized on a yearly, monthly and daily basis and in case of decoupling situation for the region.

Hub: a geographical area for which always one price per price period is calculated.

Market (or Day-Ahead Market): platform run by a Power Exchange where bids and offers on electricity to be delivered the following day are matched in an auctioning process. In most cases a market is linked to a geographical area.

Fallback Participant: member of the XXX platform and taking part of the Shadow explicit Auction. This includes BRP's being participant or not on the Exchange(s).

FSO: Functional System Operator (of the MC System)

Matching: calculation of Market Results, as generally performed by PXs or by CASC in case of Fallback situation.

Orders: order sent by Market Participants to the Exchanges. An order consists at least of a product, a price, a quantity, and a direction (purchase or sale). The order is a commitment to sell or buy (as specified in the order) the quantity specified in the order at the price specified in the order (or above the price in the case of sale, or below the price in the case of purchase), of the product specified in the order. Orders are either Divisible Hourly Orders or Block Orders.

Programming Authorizations: see Cross-border TSO Exchanges.

Shadow bid: Bid entered by Fallback participant via the XXX platform. The bids are entered before a decoupling announcement and will be taken into consideration as soon as the decoupling is published on the market. Modification on the bid will not be permitted after decoupling announcement

5.3. ALGORITHM REQUIREMENTS

1. Introduction

This document lists the requirements that the market coupling (MC) algorithm to be designed for the [Name] project must fulfil.

These requirements relate

- either to the strict framework of the [name] project, i.e. they are considered as necessary to couple the [number] exchanges through scheduled electrical energy transfers using electric networks existing in the [number] [region] countries (“mandatory requirements”),
- or – as a second priority -to potential extensions of the [name] project, for instance the coupling of the [name] regions with other PXs belonging to other regions (“additional requirements”).

The latter “additional” requirements, if not strictly necessary for the success of the [name] project, will undoubtedly be highly useful, notably in the already planned multi-regional extensions. Therefore one of the evaluation criteria for the [name] algorithm is its flexibility: it must be relatively easily adaptable to fulfil the additional requirements.

2. Mandatory Functional requirements

2.1. Objective

The MC algorithm refers to the full solution, including elements that may be undertaken locally or centrally. The algorithm takes as input all necessary information¹ from all local orders submitted by the participants of the power exchanges and the parameters of the network constraints.

The MC Results, output of the algorithm, are:

- for each bidding area:
 - the area net position for each hour (exporting or importing),
 - the Market Clearing Price (MCP) for each hour,
 - the set of accepted and rejected, block orders;
- for each constraint in the network representation:
the shadow² price associated with the network constraint for each hour.

The algorithm must determine the best MC results under the exchanges’ constraints, the network constraints and the high level properties (see below) and in this way optimize the economical usage of the cross border transmission capacity.

¹ Minimum information to be provided includes volume and price of all individual but anonymized block orders and so called Net Export Curves, provision of more detailed information like all anonymized individual orders should also be supported by the algorithm but is not required

² a “shadow” price associated to a constraint is the increase of the objective function resulting from relaxing this constraint by one unit

2.1.1. Order types

2.1.2. Network constraints

2.1.3. High Level Properties

2.1.4. Performance requirements

2.1.5. Reproducibility

3. Algorithmic behaviour

The algorithm design process is described in a parallel document (“Algorithm design approach”). Nevertheless, this section describes the “targets” of the algorithm. Indeed, whereas the beginning of this document provides a description of various features to be included in the algorithm, this section presents insight on the qualitative aspects expected for the algorithm.

- a. Methodology**
- b. Simplicity**
- c. Performance**
- d. Scalability**
- e. Robustness**
- f. Reliability**
- g. Transparency**
- h. Data sensitivity**
- i. Extensibility**

5.4. MC SYSTEM EXTERNAL INTERFACE SPECIFICATION

1 Preface

This document contains the requirements on and specifications of the external interfaces of the Market Coupling System. It is primarily intended for the System Supplier who will develop the MC System and the internal or external parties that develop or adapt the systems that interface with the MC System. In second instance, it will be used by the MC project to validate and accept the MC System and the (adaptations to the) systems it interfaces with.

2 Introduction

2.1 Sequence overall process

2.2 Interface specification approach

3 Document descriptions

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Annex 7. CHANGE CONTROL PROCEDURE

1. Introduction

1.1. Purpose

This document describes the Change Control Procedure to be used as part of the Market Coupling operations. It provides a controlled environment in which changes can be implemented efficiently with the minimum of delay and the least risk.

The process aims at tracking all types of changes from major changes through the scope and functionality of the Market Coupling to minor bugs in the software.

Whilst the majority of changes are likely to be simple operational changes, it is still important that the procedure is robust to the processing of more complex changes.

1.2. Outline of the Change Control Procedure

The overall Change Control Procedure provides a process which caters for complex solutions. In the case of simple problems (with a low risk solution affecting a small number of Components owned by a single or joint Party) a provision of a notification process is foreseen. This notification process simply informs other parties of the changes that are being carried out.

For changes which are more complex, of a slightly higher risk or affecting multiple Components or for Components which are the responsibility of more than one Party (or its subcontractor), the process allows for:

- the distribution of the proposed changes;
- the possibility for Parties to review the changes and provide feedback; and
- when necessary, either because of objections or because of the complexity of the proposed change, to request a review by the Steering Committee.

Changes are recorded in the Request for Change (RFC).

For notifications and simple changes, the change will be recorded on just one form, the Request for Change (RFC) form. This will contain all the information required including the cause of the change, the proposed solution, its impact and the way in which the change will be implemented. **In this case no other forms will be required to be completed.**

In the case of complex changes it may not be possible for the originator to complete all of the sections of the RFC. In this case the other sections, such as e.g. solution analysis (Section B of the RFC), impact assessment (Section C of the RFC), implementation plan (section D) will be requested from the appropriate people using the relevant form(s). This will allow individual responses from several Parties in the case, for example, the solution affects several Components.

The Change Control Procedure is coordinated by the Change Control Administrator (CCA). The CCA shall rotate among the Parties on a yearly basis (according to the measures agreed in the Framework Agreement).

The Parties shall appoint a Local Change Administrator (LCA) for:

- (a) each of the Parties;
- (b) each of the Components jointly developed by the Parties;
- (c) each of the tasks subcontracted by the Parties.

The LCA is the single point of contact for the purpose of the Change Control Procedure. The LCA shall perform all tasks assigned to it/them, including when the tasks are subcontracted by the Parties.

Each of the steps involved in this procedure and their associated timings are described in Section 3.

1.3. Scope

Any changes can be proposed through this Change Control Procedure. In accordance with Paragraph 8.1.1 and Paragraph 18.1.2 of the Framework Agreement, the changes to the following must comply with the Change Control Procedure:

- The annexes indicated as “in scope” in Annex 14 of the Framework Agreement; and
- the Components indicated as “in scope” in the Component List (Annex 6 of the Framework Agreement).

Other elements falling under the scope of Change Control Procedure are the operational procedures (although annexed to the Framework Agreement which is not in scope of this Change Control Procedure) and IT/IS items. The changes applicable to the latter elements should follow the specific Change Control process described in section 2.3 of this document.

The local TSO's Components are not considered in scope of this procedure since the risk management procedure associated to these Components is defined and handled by the TSOs jointly.

1.4. Structure of Document

Section 2 contains a flowchart showing the steps to be taken in the identification and processing of changes. This forms the basis of this Change Control Procedure which is described in the remaining parts of the document.

Section 3 provides further details of the activities to be carried out. It expands on the flowchart and identifies the rules and options for some actions. Where there are specific time constraints these are identified.

Section 4 contains the various forms used by the procedure together with guidance on their use.

Section 5 gives information regarding the allocation of risk to changes.

Section 6 describes assurance gathering in the context of the Change Control Procedure.

Sections 7, 8 and 9 provide the terms of reference for each of the main participants in the Change Control Procedure.

2. Workflow Diagram

The workflow diagrams describe the overall flow of the procedure

3. Activity and Timing Information

The tables below provide details of the actions to be taken at each step of the procedure and the timeframe within which they should be carried out.

In all cases where there is activity to be carried out by the Parties (or their subcontractors if any) they should aim to do it as soon as practically possible. In particular, the CCA will aim to process documents within the timeframe allowed and in most cases on the Business Day of receipt of documentation.

Two sets of timings are identified for each process described in the Change. The column 'normal timing' provides the framework for dealing with changes, except for bug fixes and changes needed for continuity reasons which fall under the column 'fast track timing'. The fast track timing should only be used in exceptional conditions. In all cases the processing of changes will be much faster when the RFC will be as complete and as detailed as possible from the beginning.

The standard for communications will be email with fax and telephone as back up mechanisms.

4. Change Control Forms

4.1. Introduction

The Change Control Forms provide the basis of the information exchanges regarding changes between all interested Parties with respect to a particular change.

For complex changes (i.e. changes needing a thorough impact analysis, such as impacting several systems, a substantial change of a Component, etc.) the Solution Proposal Form, the Impact Assessment Form and the Implementation Plan Form (can be used to gather information from participants.

Objections are raised using the Objections Form and changes to Component versions are sent on the Component Version Update Form.

Changes to or new LCA registrations are carried out on the LCA Registration Form.

This section provides details of how to complete the forms and the information that is required in each one. The provision of complete and correct information is important to the efficient operation of the overall process. Generally as much information as possible should be provided at each stage to speed up the process.

Type of Forms:

- LCA Registration Form
- Operational Procedure Form
- Request for Change Form
- Solution Proposal Form
- Impact Assessment Form
- Implementation Plan Form
- Objections Form

- Component Version Update Form
- Risk and Impact Allocation

5. Categories and Risk

The overall impact of implementing a change will be defined through the nature of the Components affected and the risk associated with the particular change that is being carried out. Note that, when a Component is jointly operated by Parties, it is treated as if there was just a single Component.

The categories for each Component are defined as part of the Component description in the configuration database.

Each proposed change will have a degree of risk associated with it

5.1. Component Impact

For each Component affected by the proposed change the category and risk are combined to provide an impact for the Component as defined in the table below.

5.2. Route of the Change through the Procedure

6. Assurance Gathering

As part of the Change Control Procedure it is necessary to provide assurance that the changes that have been made are correct and suitable for live operation. This assurance gathering can take place using a range of activities as described below. The level of assurance gathering will depend on the nature and scope of the change.

6.1. Assurance Activities

6.2. Scope of Assurance Gathering

7. Tasks of the Steering Committee (or subcommittee) under the Change Control Procedure

The tasks of the SC under the Change Control Procedure are defined in the present section.

7.1. General tasks

Under the Change Control Procedure, the SC performs three (3) main tasks, namely it:

- (a) ratifies proposed changes (for those that are provided to it in accordance with the Change Control Procedure);
- (b) determines when changes should be scheduled (in case several changes relate to the same Component or to different Components but in the same timeframe); and
- (c) appoints a person responsible for implementing changes (or instructs that such person should be appointed).

7.2. Specific tasks

Under the Change Control Procedure, the SC has the following specific tasks, namely it:

- (a) designates, among its members, a CCA;
- (b) controls and monitors the activities of the CCA;
- (c) notifies the CCA of the contact details of the SC members;
- (d) is available within the timeframes set forth in the Change Control Procedure to perform the tasks as defined in the Change Control Procedure;
- (e) reviews RFC;
- (f) assesses completeness of the RFC in the light of the Change Control Procedure and requests for additional information;
- (g) accepts or rejects RFC;
 - Rejections can only be made when:
 - (i) Costs exceed benefits;
 - (ii) Development is excessive;
 - (iii) Implementation entails risks;
 - (iv) Objections are upheld; and
 - (v) RFC contradicts other implementations.
- (h) reviews objections to changes;

- (i) assesses completeness of objections to change in the light of the Change Control Procedure and requests for additional information;
- (j) accepts or rejects objections to changes;
- (k) confirms that the go live criteria have been met and determines the implementation date for changes and the timing of implementation;
- (l) receives monthly reports from the CCA;
- (m) escalates issues for decision of the SC as set forth in the Change Control Procedure (if subcommittee);
- (n) reviews the appropriateness and efficiency of the Change Control Procedure at least once a year ; and
- (o) proposes changes to the Change Control Procedure to the SC (if subcommittee).

8. Tasks of the CCA under the Change Control Procedure

8.1. Introduction

The CCA is the person responsible for the central management and administration of changes under the Change control Procedure. The role of the CCA is key to the successful operation of the Change Control Procedure. It is the single person of contact for notifications and RFC and for circulating information and analysis requests. It is the central repository for change control information.

8.2. Tasks of CCA

The tasks of the CCA under the Change Control Procedure are defined in the present section.

Under the Change Control Procedure, the CCA has the following tasks, namely it:

- (a) keeps an updated version of the contact details of the LCAs and distributes it to the attention of the OPSCOM and of the LCAs;
- (b) proposes updates of the List of Components (Annex 6 of the Framework Agreement) to the SC;
- (c) updates and maintains a register of changes;
- (d) reviews RFCs and notifications;
- (e) receiving notifications of change from the LCA's and circulating these for information in accordance with the change control procedure.
- (f) assesses the completeness of RFCs in the light of the Change Control Procedure, including the check of the Components and risk categories in accordance with the Change Control Procedure and the List of Components (Annex 6 of the Framework Agreement);
- (g) requests for additional information on RFCs;
- (h) allocates unique RFC numbers;
- (i) coordinates the items of the agenda of the OPSCOM that relate to the Change Control Procedure;
- (j) requests emergency meetings of the OPSCOM to review urgent RFCs;

- (k) provides relevant RFCs to the OPSCOM and ensures the follow up of the decisions of the OPSCOM in this matter;
- (l) reviews objections to changes;
- (m) assesses completeness of objections to change in the light of the Change Control Procedure;
- (n) requests for additional information on objections to change;
- (o) in case the objection to change remains unmotivated or motivated inadequately following a request for additional information, escalates the matter to the SC;
- (p) communicates to all LCAs the implementation date for changes and the timing for implementation;
- (q) communicates the go live criteria to the LCAs;
- (r) provides monthly change management reports to the OPSCOM and the LCAs, including details of the RFCs that have been raised, their type (notification, emergency fix, etc.), status (position in the change control cycle), risk category and impact on Components;
These reports are provided in due time before the OPSCOM meeting.
- (s) provides monthly implementation reports to the OPSCOM and LCAs setting out the dates of future planned changes, the Party responsible for the changes and the impact on Components;
These reports are provided in due time before the OPSCOM meeting.
- (t) provides advice to any concerned Party (or subcontractor if any) on completing the forms under the Change Control Procedure as necessary.

9. Tasks of the LCA under the Change Control Procedure

9.1. LCA Summary

LCAs perform a key role in the Change Control Procedure.

LCAs are the single point of contact for any communications in respect of the RFCs and notifications. As a general matter LCAs are responsible for:

- submitting RFCs and notifications;
- coordinating the responses to solution analysis requests (section B of the RFC) and impact assessments within their own companies;
- ensuring that agreed changes are implemented.

For any Component for which a RFC must be filed, the relevant LCAs will be responsible for submitting the RFC, for coordinating the assessment of the impact of the change and for ensuring that the change is implemented.

9.2. Tasks of LCA

Each LCA shall have the following tasks:

1. designate a person who will substitute the LCA in case the LCA cannot perform its tasks;
2. provide the CCA with its contact details and those of its substitute and keep the CCA updated of any change of these;

3. provide the CCA with details of any new Components that should be added to the register of change, including the Component category and risk category;
4. send complete RFC and notifications to the CCA in accordance with the Change Control Procedure;
5. inform all relevant persons within its company of RFCs as communicated by the CCA and follow up these internally;
6. take receipt of RFC from the CCA for solution analysis and impact assessment;
7. Receiving notifications of change from the CCA and ensuring that the relevant departments within their organisation are notified of the changes
8. The LCA will ensure that the relevant persons within its company are informed of it with a view of assessing the RFC within the timeframes set out in the Change Control Procedure.
9. raise objections, if any, against received RFC.
10. Objections shall always be motivated. Before raising an objection, the LCA ensures that reasonable efforts have been made to resolve the objection between the relevant Parties (or subcontractors if any) informally.
11. collect the results of the internal analysis/assessment and communicate a common position of its company to the CCA;
12. distribute the monthly overview reports received from CCA internally;
13. ensure that the date upon which a change will be implemented is reported to all the relevant persons within its company;
14. in case the CCA is not available, each LCA shall communicated himself/herself his/her RFC to the other LCAs.
15. The LCA circulating the RFC shall take upon him all responsibilities of the CCA concerning this RFC.
16. The LCA will perform its tasks during Business Hours.

ANNEX 8 PROCEDURES

- GLOSSARY
- RECEPTION AND INTEGRATION OF ATC VALUES IN THE MC SYSTEM
- TRANSFER OF CALCULATION RESULTS AND VALIDATIONS BETWEEN PX TRADING SYSTEMS, MC SYSTEM AND TSO COMMON SYSTEM
- TRANSFER OF ATC VALUES FROM TSO COMMON SYSTEM TO MC SYSTEM
- RECEPTION OF THE AGGREGATED ORDER FROM PX SYSTEMS TO MC SYSTEM
- MC CALCULATION INCL. CHECK AND TRANSFER ROUNDED PRICES
- NET POSITIONS VALIDATION BY TSO COMMON SYSTEM
- CONNECTION TO THE GUI AND TRANSFER OF FINAL PRICES AND NET POSITIONS FROM MC SYSTEM
- INCIDENT INVESTIGATION
- TRANSFER OF DATA FROM MC SYSTEM TO BOTH CROSS PX CLEARING SYSTEMS AND TRANSFER OF CROSS BORDER TSO EXCHANGES (PROGRAMMING AUTHORIZATIONS) FROM TSO COMMON SYSTEM TO CROSS PX CLEARING SYSTEMS
- HUB AND CROSS-BORDER NOMINATIONS PERFORMED BY THE CCPS
- INCIDENT COMMITTEE PROCEDURE
- COMMUNICATION TO MARKET PARTICIPANTS
- LONG CLOCK CHANGE
- MC SYSTEM SWITCH AND POSSIBLY RESET OF THE MC SYSTEM

Annex 9. TEMPLATE OPERATIONAL CALENDAR & CONTACT DETAILS

It is proposed to maintain the operational calendar & contact details within an Excel-file. Below a proposed scheme is shown:

Last Update: XX.XX.XXXX						
List of operational contact details				Operational Calendar		
Role	Contact Name	Phone number	Email	W1	W2	W..n
X						
Y						

Annex 10. List of Operational Data to Publish

This annex provides an overview of the publication of operational data during ATC based market coupling: definition of data, unit to use for publication and the entity responsible for the publication for normal operation, fall back and roll back. The obligation to publish these operational data, stems from European regulation and the rules on transparency (except for the market results).

Annex 11. License Agreement

Minimal or Extended license agreement for the mathematical algorithm on the basis of which among others price and volume calculation of the coupled markets will take place

- Parties : the “Licensors”; the “Licensee”;
- WHEREAS setting the context
- Interpretation – definitions – Interpretation
- Subject matter
- License : type of Granted License (Minimal License) - Permitted Use upon payment of the license fee - License Term - Geographical Scope - Future software versions
- Delivery
- License Fee and payment conditions
- Warranty
- Title and (Intellectual) Property Rights
- Confidentiality
- Limitation of liability
- Entry into force, duration and termination
- Governing law and disputes
- Varia

Annex 12. Simulation Facility Services

I.- Description of the Simulation Facility Services rendered to the TSOs

In accordance with Article 9 of the Agreement, the PXs shall jointly provide the Simulation Facility Services to the subscribing TSO(s). Subscription to the Simulation Facility Services entitles to the following services:

The PXs have appointed as the PX rendering the Simulation Facility Services to the subscribing TSO(s).

II.- Functionalities of the Simulation Facility

III.- Fees for the Simulation Facility Services

IV. Invoicing for the Simulation Facility Services

V. Termination of the subscription to the simulation facility services

Annex 13. Change Control Procedure Application

Format: Excel-file

Annexes indicated as "in scope" of the Change Control Procedure require the implementation of the Change Control Procedure before the SC decision/signature process

CHANGE CONTROL PROCEDURE APPLICATION	
Annexes modifiable by Steering Committee decision	In scope of the Change Control Procedure?
Annex 2: PARTIES' CONTRACTUAL CONTACT DETAILS	
Annex 3: SUBSIDIARY AND OTHER SPECIFIC CONTRACTS OVERVIEW	
Annex 4: RULES OF INTERNAL ORDER	
Annex 5: MC REQUIREMENTS	
Annex 6: LIST OF COMPONENTS	
Annex 7: CHANGE CONTROL PROCEDURE	
Annex 8: PROCEDURES	
Annex 9: TEMPLATE OPERATIONAL CALENDAR & CONTACT DETAILS	
Annex 10: LIST OF OPERATIONAL DATA TO PUBLISH	
Annex 12: SIMULATION FACILITY SERVICES	
Annex 15: MANAGEMENT OF THE CWE MC ROUNDING ENERGY	

Framework Agreement/Annexes modifiable by signature of all Parties	In scope of the Change Control Procedure? *
FRAMEWORK AGREEMENT MAIN BODY	
Annex 11: LICENSE AGREEMENTS	
Annex 14: CHANGE CONTROL PROCEDURE APPLICATION	

Annex 14. Management of the Rounding Energy

1. Definition of Rounding Energy :

- (a) The net positions of the Hubs resulting from the Market Coupling calculation (the mathematical algorithm on the basis of which among others price and volume calculation of the coupled markets will take place) are rounded. Following this rounding process, it can happen that the rounded net position values do not strictly sum up to zero.
- (b) For each Hub, bilateral exchanges are also rounded by the TSO Common System. Following this rounding process, it can happen that, for a given Hub, the sum of the bilateral exchanges do not strictly sum up to the net position of this Hub.

These two rounding processes result in a “rounding energy” on each Hub, which is mathematically equal to the difference between the net position of the Hub and the sum of bilateral exchanges of the Hub; this “rounding energy” per Hub is a combination of (a) and (b) described above (the “**Rounding Energy**”).

For a given Hub and a given hour, the Rounding Energy can be either deficit energy or surplus energy, depending on the Market Coupling Results and bilateral exchanges results.

2. Management of Rounding Energy

2.1. Local management

Each respective CCP manages Rounding Energy on a local basis, meaning that the rules for physical management and financial settlement of the Rounding Energy are defined between the local TSO(s) and the respective CCP.

2.2. Cost recovery

Provided such costs/income occur, TSOs undertake to bear the following real and accurate costs/incomes related to physical and financial management of the Rounding Energy on a local basis and under the modalities defined locally (on a country basis). These costs/incomes are:

- (a) cost/income linked to the purchase/sell of the rounding energy by the CCPs at spot market price on their respective power exchanges;
- (b) cost/income linked to the local imbalance on the respective CCPs’ balancing perimeters;

The treatment of any additional costs for handling the Rounding Energy has to be negotiated and decided locally between the TSO and its respective CCP.

2.3. Physical management of Rounding Energy

The concerned CCP accounts for the Rounding Energy. Where and in so far as this implies an imbalance of the CCP on the concerned Hub, this imbalance is affected to the TSO(s) on a local basis.

2.4. Technical management of Rounding Energy

The Rounding Energy is calculated in the Cross PX Clearing Systems of the PXs

This information is then transmitted to the CCPs IT system for Cross Border Nomination and financial settlement.

2.5. Financial settlement of Rounding Energy

Provided such costs/income occur, TSOs undertake to bear the costs/income related to the management of the Rounding Energy on a country basis.

2.6. Contractual arrangements for Rounding Energy

The contractual agreements between the respective CCPs and TSOs for Rounding Energy are formalised at the local level, on a bilateral basis.