

Borzen



Technical assistance to FYR of Macedonia to establish Institutional Set-up for Organised Day-ahead market

**Concept design for the Institutional Set-up of the Organised Day-
ahead market**

Ljubljana, 24 May 2018

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Abbreviations and definitions

- 4M MC – Four(4) Markets Market Coupling
- ANCA - All NEMO Cooperation Agreement
- ANDOA – All NEMO Day-ahead Operational Agreement
- ATC – Available Transfer Capacity
- CACM – Regulation 2015/1222 establishing a guideline on Capacity Allocation and Congestion Management
- CCP – Central Counter Party
- CZC – Cross-Zonal Capacities
- DSO – Distribution System Operator
- ECC – European Commodity Clearing AG
- EFET – European Federation of Energy Traders
- EMIR – European Market Infrastructure Regulation
- FB – Flow Based Capacity Calculation Methodology
- GCT – Gate closure time
- IBWT –Italian Borders Working Table
- INCA – Interim NEMO cooperation agreement
- MCO – Market Coupling Operator
- MIFID – Markets in Financial Instruments Directive
- MLA – Multilateral Liability Agreement
- MO – Market Operator
- MRC – Multi-Regional Coupling
- MRC DAOA – Multiregional Coupling Agreement
- NEMO – Nominated Electricity Market Operator
- NRA – National Regulatory Authority
- PCR – Price Coupling of Regions
- PX – Power Exchange
- REMIT – Regulation on Energy Market Integrity and Transparency
- SA – Shipping Agent
- TSO – Transmission System Operator

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Executive Summary

The Slovenian Electricity Market Operator Borzen together with the Slovenian Nominated Electricity Market Operator BSP Energy Exchange (“consultant”) are contracted as a Technical Assistance Provider by the Energy Community Secretariat (ECS) for the Electricity Transmission System Operator of Macedonia JSC Skopje (MEPSO, “beneficiary”) for the provision of Technical Assistance for draft solutions for national governance structures and institutional arrangements for the national day-ahead electricity market, fit for coupling with neighbouring markets in an optimal way.

This concept paper covers the content of task 3.b given under the ToR (terms of reference) of this Technical assistance. It is **complemented by the final report for the Technical Assistance and builds upon its content.**

The focus is to provide a proposal for a concept for a day-ahead market organisation - a detailed description of the proposal, including all necessary steps and timelines, together with Consultant’s recommendations and a legislative overview.

Consultant's recommendations

The consultant gives the following recommendations, based on the analysis carried out in the Final Report as well as from information gathered from stakeholders:

- In the decision process either to establish a local power exchange or select a foreign power exchange to operate the Macedonian exchange market the status of **MEPSO as owner/shareholder** is requested. This constitutes good practice in the EU (EPEX, NordPool, BSP, HUPX, OPCOM, etc.) and enables the TSO to have an insight into PX operations, while this is important when the Macedonian market will be integrated with other markets and PX will allocate short term capacities. The Macedonian Energy Law (version received 25. 4. 2018) is compliant with this, provided the MO (which is to be established by the TSO) is allocated also the PX status. In the event of a tender, this would need to be included in the conditions.
- A **general choice of the model needs to be made beforehand** - it would not be sensible to fit all possible options into the law (e.g. in the Slovenian law you have only a minor mentioning of PX, since at the time this was considered a “market based” activity). In the past PXs were less regulated in national laws but today the EU starts to regulate power exchanges (i.e. CACM, influence of MIFID, possible influence of REMIT revision) and this impacts how much you put in your local law.
- When preparing the necessary legislation one has to be careful that there is **no stipulation in a provision of owning the assets for operating the market** (unless you have a very strong reason), since the impact on costs is major, as this would require the entry into the PCR consortium as a full member and become co-owner and the option to outsource PCR services for market integration would become obsolete.
- The Consultant's opinion is that **regulators must play a role** and – given CACM as well as the monopoly issue – that regulation is inevitable. This is particularly true for the MCO function of the PX (e.g. recent Nord Pool announced reorganisation in relation to the interplay between market (competitive) and regulated functions).
- However, **regarding rules, it would be sensible to delegate their preparation directly to the MO / PX, with the regulator having to approve them before taking effect.**
- The Consultant gives the recommendation that investing the time and resources by the MO to establish a PX and implement all the criteria for the PX to be designated as NEMO under the regulation 1222/2015 shall be done after the tender is published and the MO is designated as the one carrying out the PX activity (and later NEMO). Otherwise the MO (and MEPSO as owner) will have to take into account the **risk not being designated as monopoly PX/NEMO in Macedonia** and therefore spent the resources for setting up PX without the result. In general, the monopoly option is fine, given the circumstances, and if the MO is spun out of MEPSO, then it is sensible for it to be directly allocated the PX task as well. If the Macedonian stakeholders decide to keep the tender option in the Energy Law, then one of the key issues to solve is **what the participant will actually tender**, since the fees are subject to approval by the Regulator (Energy Law draft 25. 4. 2018, Article 90(2), point 5).
- **Other relevant legislation (VAT, public procurement, Law on Trade Companies) seems to be – based on available information – suitable for the PX to operate.** Regarding VAT, a full reverse charge mechanism is advisable, yet many EU PX operate fine even without it. The

same is true regarding the establishment of subsidiaries. On public procurement, the legislator needs to be careful to allow the TSO and DSO to procure losses via the PX – a very important step for initial liquidity establishment, together with the sale of RES electricity. The 25. 4. 2018 draft Energy Law contains a provision (Article 92 para 5 and 6) regarding the inclusion of purchase of electricity from regulated entities and purchase and sale of RES electricity in the Market Rules. If the intent is just to clarify the procedures on channelling this energy on the PX, then this is fine and even advisable– but attention needs to be paid not to come in conflict with the Law on Public Procurement.

- **Licences should be kept only when they bring added value.** For example: For the PX (Article 90, “operator of an organised electricity market”) this makes little sense, since: both the Regulator and the TSO are involved in the PX nomination process, the government prescribes the operations and conditions (Article 90(3)) and the Regulator confirms both the fees and the rules. Based on this, the licence seems superfluous.
- Regarding definitions, the Consultant recommends that the **terms “market operator” and “energy (or electricity) exchange” are used for the MO and PX respectively.** This will avoid confusion.
- Since major producers can easily influence the price of electricity with overbidding other smaller market participants, their role is the most important one for building a liquid and stable day-ahead electricity market. The Consultant proposes to **include an optional provision in the Energy Law to require mandatory participation on the PX.** Such a provision could be used for procurement as well. It needs to be stressed, that the Consultant only proposes to include an option in the Energy Law, which could be activated later on based on regulatory or governmental assessment and approval.
- Linking the timeline of establishing the PX (operational go-live) and go-live of market coupling is not efficient, since local go-live might be already ready. From another point of view, it is **beneficial to have local isolated market operating before market coupling (even with small and limited liquidity),** since this will enable all involved parties to perform simulations of market coupling and analysis of the output data, which is beneficial for the decision process which border to couple first. This is a further argument to pay attention to the initial sources of liquidity, such as procurement of grid losses, sale of RES electricity and liquidity provider or market maker agreements with key players on the Macedonian market, like ELEM.

Legislative overview

The table below gives a legislative overview – providing also a basic info on advisable changes. A more thorough review is given in the Final Report, that complements this Concept Paper.

AREA	RESPONSIBLE INSTITUTION	ISSUE / PROPOSAL
Customs Law	Ministry, Parliament	No particular issues were detected.
VAT Law	Ministry, Parliament	A full reverse charge mechanism would be advisable (fraud prevention, liquidity issues), but it is not a necessary condition for the PX to operate efficiently. Many European PXs operate quite fine without it.
Public procurement Law	Ministry, Parliament	The Public procurement Law is important both for the set-up of the PX (procurement of services, such as trading software etc.) and the option of guaranteeing the initial liquidity. Based on review of the law as well as from information gathered from the TSO (MEPSO) and DSO (EVN), the current law already enables (part) of the losses to be procured via the PX. It is thus important not to change this but to rather complement it by clear procedures within the Market Rules (also to avoid potential conflict of interest regarding the sale of RES energy).
Law on Trade Companies	Ministry, Parliament	No particular issues were detected. The abolishment of the subsidiary requirement would facilitate access to the market, yet this is not a major issue (and the current law already provides this – on the condition of reciprocity).
Energy Law	Ministry, Parliament	Key proposals: - no stipulation of owning the assets for operating the market (status version 25.4.: no such provision detected in available texts), - delegate rule preparation to MO / PX (Regulator has to approve!) - avoid licences with no added value, - use clear terms and definitions – market operator / power (or electricity, or energy) exchange, - if the MO is spun out of the TSO, it is sensible to bundle the PX and MO tasks – no resources can be committed towards PX establishment until the task (local monopoly) is clearly allocated.

Table 1: Legislative overview

Proposal of concept for a day-ahead market organisation in electricity

The purpose of the organized electricity market (PX) is the delivery of a reliable electricity price index with transparent and reliable trading operations and acting as a supplementary tool for managing trading risk with reliable and efficient clearing operations. Together with market coupling the liquid local PX shall enable more efficient procurement or sale of electricity and offer incentives for investors for long term investment in the Macedonian economy.

Based on concluded interviews and discussion with the Beneficiary and all involved stakeholders, the Consultant identified the following facts:

- 1) The Market Operator will be spun out of the TSO into an independent entity.
- 2) The PX will hold an exclusive right to organize the Macedonian day-ahead and intra-day exchange market.
- 3) The PX will not offer services to other PXs outside Macedonia.
- 4) The PX will enforce the energy policy of Macedonia.
- 5) The PX should be efficient both time and cost-wise.

The consultant would like to emphasize that some of the identified facts are still in the drafting phase (in the moment considered as preliminary).

Based on the outcomes listed above the consultant proposes the following organizational model for establishing the PX in Macedonia below.

The PX should be small, with a thin company structure, with domestic institutional ownership without foreign capital interest (at establishment) and with a cost effective service provider.

Therefore, we propose that the Beneficiary follows the current proposal in the Energy law with the setup of Market Operator established by MEPSO and including the functions of PX with monopoly status.

To achieve efficient implementation and operation we propose that MO/PX procures via public tender one of the existing trading platforms while retaining local trading operations.

Local trading operations will be combined with local clearing and financial settlement operations (direct clearing) where the MO/PX can find the synergies for clearing system with the owner (TSO) or to outsource part of IT related to clearing platform to an external service provider.

The selected trading platform shall be PCR compliant, since this will enable the Macedonian PX to couple with neighbouring markets. The key condition for market coupling is the provision of PCR operation for PX where we propose the "Serviced PX" approach as the most suitable in terms of both cost efficiency and timeline adequacy.

For the sake of efficiency, we propose also that the provider of the trading platform is linked to the provider of the PCR Serviced PX services (in the tender).

In terms of operations, the utmost priority shall be focused on activities to enable and ensure that system actors (TSO, DSO) use the PX for procurement (grid losses) and sale (RES) of energy in order to attract other actors as well. Furthermore, other key local players should participate in liquidity set-

up via market maker / liquidity provider agreements. If need be, such provisions could be mandated within the law (e.g. by giving the option to the government to introduce mandatory participation).

Detailed concept proposal

Operational set-up

The PX in Macedonia shall be established as a monopoly operator with exclusive right to operate organized day-ahead electricity market in Macedonia. Beside the obligation to fulfil the Regulation 2015/1222 and Western Balkan 6 initiative objection, the main goal of the power exchange in Macedonia shall be:

- providing a reliable electricity price index,
- offering transparency with more possibilities and higher security for investors,
- enabling a more efficient procurement or sale of electricity,
- reducing counterparty risk and providing risk mitigation opportunities,
- being a Central Counter Party and thus an intermediary with high credit rating and trust standing between buyer and seller,
- key party to design and implement market coupling on Macedonian electricity borders and
- perform the Congestion Income Collector role.

Procedural, contractual and operational arrangements

PX shall be organized as an activity within the MO (provided that the MO is allocated this task; as mentioned: until the decision regarding the tender or MO allocation is made, it would be difficult to commit resources to PX establishment), having in mind that being part of the MO will enable power exchange to find and exploit the synergies between the supporting roles used by different departments in the MO.

Organizational arrangements

PX shall have the following structure with respective support of human resources:

Governance

If the PX is organized as an activity within the MO, the governance and foremost human resources structure shall enable adequate operations and decision making, since it will also be involved in different international cooperation, like NEMO cooperation, Price Coupling of Regions, XBID, regional market coupling cooperation, etc.

A default possibility is to enclose PX operations within a department.

The separate accounting shall be implemented from the beginning of the power exchange operations (due to, for example, cost recovery in coupling projects). When the Market Operator will apply for NEMO status under Regulation 2015/1222, one of the NEMO designation criteria is separate internal accounting to prevent cross-subsidisation¹.

¹Regulation 2015/1222, Article 6, point "c"

Organizational structure

As a part of MO, the PX shall have at least the following functions in terms of operations:

- Position responsible for sales, key account management and marketing
- Position responsible for development, market coupling and international cooperation
- Position responsible for market operations, responsible for day to day market operations, market surveillance and technical implementation of IT solutions. Before starting daily operations, the following decisions shall be taken:
 - Will the trading be operated five (5) or seven (7) days per week. If five, the market participant’s bidding shall take place for Saturday, Sunday and Monday already on Friday. If such decision is taken, one shall be aware that five day regime is only possible when PX will be operated in isolated mode. When the first coupling will occur, the operations will have to be organized in a seven day regime. The decision about the five or seven day regime shall be consulted with market participants.
 - Based on the decision whether to operate the market in five or seven day regime, thenumber of market operations staff shall be advisable:
 - Five day regime – the minimal staff for operation of five day regime is two, while the recommended number is three.
 - Seven day regime the minimal staff for operation of seven day regime is three, while the recommended number is four.
- Position responsible for clearing and financial settlement, responsible for daily settlement of PX transactions between exchange members and also for the cross-border clearing when market coupling will be implemented.

Clearing and financial settlement process is performed five days per week, excluding bank holidays. For the operation of clearing and financial settlement role, a reasonable number of staff is two. This could be integrated within the general MO finance and accounting.

The general recommendation by the Consultant is that in order to secure day to day robust operation, key operation roles should be clearly designated. Other roles such as clearing and financial settlement, finance and accounting, legal, administration and IT can be pooled within the MO. Certain roles, such as PX clearing, may even be (partly) outsourced.

Contractual arrangements

Contractual arrangements are a key element before the PX can start operational management of day-ahead market. In general, we these are the main topics:

- 1) General contracts for PX set-up
- 2) PX market and clearing and financial settlement contractual arrangements
- 3) Special contractual arrangements
- 4) Contractual arrangements for market integration

General contracts for PX set-up

Under these contractual aspects we include the general agreement between stakeholders to establish a company with required institutional setup (establishment of Market Operator, the list of roles performed, etc.), contracts with employees, etc.

PX market, clearing and financial settlement contractual arrangements

1) Power exchange rules

Power exchange rules govern the line of business, applicable laws relevant for the PX operation, relevant PX bodies (such as Members Chamber, Market Committees and Exchange Arbitration), membership admission/cease of membership procedures, types of membership (regular PX member, Market Maker, Liquidity Provider), general PX trading and clearing support procedures, limitations of liability and dispute resolution measures.

2) Market rules

Market rules set forth trading segments and their characteristics. They define manners of trading and how pertinent trading algorithms are run (auction trading and continuous trading), gate closure times, products, submission of orders and trade cancellation terms, procedures for resolving technical difficulties, rollback measures regulating cases of market defaults and physical rights/obligations reporting requirements.

3) Clearing and financial settlement rules

Clearing and financial settlement rules define different cash accounts (settlement account, deposit account, business account, financial guarantee provision terms (calculation of the guarantee value, margining principles, types of accepted guarantee, calculation of trade limit), settlement provisions (elements of Invoice and Offset report, timings for the issuing of Invoices and Offset reports, financial settlement deadlines) and measures in case of default/non-payment of outstanding obligations by market participants.

4) Contracts for participation at power exchange

Contracts for participation at PX govern type of admission to the PX market (direct/affiliate membership), admitted market segments, issuing of the invoices (VAT legislation obliged elements of the invoices and special conditions such as that PX acts as buyer and seller counterparty towards market participants), financial guarantee management, authorizations given to PX to operate and transfer provided funds by market participants in the time of clearing and financial settlement operations and general terms such as liability, duration, cancellation policy, etc.

Special contractual arrangements

1) Market maker agreement

The main objective of the Market Maker Agreement is that by this agreement a market participant is obliged to simultaneously act as the buyer and the seller of a particular asset within agreed market spread on the PX market. The agreement sets the quantity and price terms within which a market participant has to simultaneously hold buy and sell position (usually equivalent to buy position) on the tradable assets within predefined price spread.

2) Liquidity provider agreement

The main objective of the Liquidity Provider Agreement is that by this agreement a market participant is obliged to act either as the buyer or the seller of a particular asset on the PX market. The agreement therefore sets only the quantity terms which market participant has to either buy or sell the tradable assets on the PX market.

3) License agreement for trading platform

The agreement sets terms and conditions under which the service provider shall provide the license and the related installation and maintenance service of the Trading platform. Against payment of license fees the service provider is providing license to exploit the processing functions of the trading platform software, load, run, access and employ the software or display, make available and exploiting the information processed by the software for management of cross zonal capacities and bids for the purposes of the relevant local markets or market coupling projects, together with running tests and analysis, within the limits and specifications provided under the agreement.

Contractual arrangements for market integration

• Multiregional Price Coupling Agreement – MRC DAOA

The MRC DAOA agreement sets the rights and obligations of the operational parties in respect of the cooperation in order to coordinate the operational phase of the Multiregional Price Coupling, as regards roles and responsibilities in respect of operations, governance and decision making, and the facilitation of price coupling with other areas, in particular in order to:

- enhance security of supply;
- increase competition in electricity wholesale markets;
- preserve and enhance a fair and orderly market including fair and orderly price formation;
- enhance more efficient use of cross-border interconnections by objective, implicit, market based, non-discriminatory and transparent methods of allocation of available Cross-Zonal Capacities;
- provide fair and non-discriminatory access to the Multiregional Price Coupling to any third party European transmission system operator or power exchange;
- facilitate the coupling with adjacent markets and regions and thereby contribute to the integrated European energy market with a goal to increase economic efficiency.

The Parties shall treat in good-faith and in a non-discriminatory manner any request of any third party power exchange wishing to adhere to the agreement.

In the moment of the delivery of this document under the TA to the Beneficiary, the MRC DAOA is under the revision by all TSOs and all NEMOs involved in the MRC operations, all 4MMC TSOs and NEMOs and all interested third parties outside of the European Union. The aim of this revision is to agree on amended agreement which will be in line with the provisions of the Regulation 2015/1222 and will act as master agreement governing the

design, operation and amendments of Single Day-ahead Market Coupling in European Union. Therefore consultant is stating that in the time when Beneficiary or PX will adhere to this agreement or any successor the purpose of the agreement and conditions to grant Observer status or adherence process might be different.

- PCR Serviced PX agreement

The PCR Serviced PX agreement sets the terms and conditions under which:

- the PCR services shall be performed by Servicing PX to Serviced PX,
- all the relevant information flows shall be exchanged between the above mentioned PXs,

The term PCR services are defined as performance of the activities which are provided by Servicing PX in order to include the bidding Area of Serviced PX in PCR operations, consistently with the PCR agreements. In other words, Servicing PX provides Serviced PX with the calculation of market results and the management of data in input (collection from Serviced PX and transfer to PCR) and output (collection from PCR and transfer to Serviced PX). In order to provide such a service, the operational procedures are described in the agreement.

- Multilateral Liability Agreement - MLA

The purpose of the agreement is to establish appropriate waivers of liability between on the one hand each Serviced PX and on the other hand the Servicing PX with respect to:

- the use by a Serviced PX of the PCR Assets, and
- carrying out of PCR operations in accordance with the terms of the PCR Agreements.

The Agreement shall ensure that the specific liability scheme between PCR Parties is also applicable reciprocally towards and between all PXs involved in the PCR Market Coupling.

- All NEMO Day-ahead Operational Agreement – ANDOA

The Agreement sets the main principles of the cooperation between the Parties in respect of DA MCO Function Operations and DA MCO Function Assets development, consistently with the CACM Regulation and the MCO Plan, the terms and conditions under which The Single Day Ahead Market Coupling shall be implemented, performed and operated and the relationship between the Parties and the DA MCO Function Asset Co-owners as well as the Third Party Service Providers of the DA MCO Function Assets.

Any Power Exchange, having its operations within or outside the EU, may, following a written request to the NEMO DA Steering Committee, be granted by a NEMO DA Steering Committee decision the status of Observer, for the purpose of acceding at a later stage to the Agreement. The exact conditions for acquiring the status of Observer are listed in the agreement and are available to the Beneficiary after the access to the agreement via sufficient confidentiality declaration in signed.

- Interim NEMO cooperation agreement – INCA

The agreement between all designated NEMOs with the purpose to establish an interim framework to facilitate the necessary cooperation between designated NEMOs with respect

to the performance of all common tasks that need to be performed in connection with the following:

- the development and submission of the MCO Plan in accordance with article 7, paragraph 3 of the CACM Regulation;
- the development and submission of such other appropriate terms and conditions and/or methodologies in accordance with article 9 paragraph 6 of the CACM Regulation;
- the development of the enduring cooperation agreement;
- any additional tasks as may be agreed unanimously by the NEMOs.

The Agreement is open to accession of any legal person designated as a NEMO pursuant to the CACM Regulation. A designated NEMO which intends to adhere to the Agreement shall address to the secretary of the Committee a written request.

The exact conditions for acquiring the status of Observer or adherence to the agreement are listed in the agreement and are available to the Beneficiary after the access to the agreement via sufficient confidentiality declaration in signed.

In the moment of the delivery of this document under the TA to the Beneficiary all designated NEMOs are cooperating under this interim cooperation model. When MCO plan and CACM requirements will be developed and implemented and thus the process finalized, the cooperation between all NEMOs will be governed by All NEMO cooperation agreement – ANCA. Therefore consultant is stating that in the time when Beneficiary or PX will adhere to this agreement or any successor the purpose of the agreement and conditions to grant Observer status or adherence process might be different.

Procedural arrangements

Under procedural arrangements we collect all operational, procedural, technical and IT requirements for setting up and operation of day-ahead market in Macedonia.

Liquidity

Power exchange liquidity is measured in the distribution of bids and offers provided by market participants and are reflected as resilience to a drastic price changes in case of increased market participants bids and offers volume. The liquidity is a key variable for small markets in development with one major producer where one can easily influence the price of electricity with overbidding other smaller market participants. Liquidity is provided to the power exchange market by an increased number of active market participants and with integration of neighbouring markets via the market coupling mechanism.

Non-obligatory contract based bidding of electricity on power exchange

There are two types of power exchange market participants:

- “Non-commercial” institutional market participants, meaning entities performing public roles as transmission system operators, distribution system operators and market operators. All those entities are making commercial transactions on the electricity market, but with a different goal on the market. TSO, DSOs and MO are important especially at the beginning of formation of power exchange and day-ahead market, since the grid losses by TSO and DSO

and, for example and if relevant, renewable energy production from MO can be the initial bid or offer on the power exchange where a small number of other market participants is present due to an early stage of day-ahead market opening process.

- Commercial market participants, meaning any domestic or foreign production or electricity trading company, performing energy trading for a financial profit only. Their interest on the power exchange is a resilient price index, high liquidity without and distortions and reliable and simple clearing design.

Market participants, especially those being present in the domestic market with major production units or consumption, can take a role of Market Maker or Liquidity provider, both helping power exchange and day-ahead market to increase liquidity. Both roles usually requests a specific terms for an exchange participation with reduced annual participation fee and trading/clearing fees.

A Market maker is a market participant that has a valid Market Maker Agreement with the exchange and is obliged to simultaneously act as the buyer and the seller of electricity within agreed market spread on the exchange market. Market Makers theoretically ensure greater price stability and improve liquidity on the day-ahead market by simultaneously holding buy and sell position (usually equivalent) on the tradable assets within the price spread defined in the Market Maker Agreement.

A Liquidity Provider is a market participant that has a valid Liquidity Provider Agreement with the exchange and is obliged to act either as the buyer or the seller of electricity on the day-ahead market. Liquidity provider theoretically ensures greater liquidity by selling or buying with Liquidity Provider Agreement specified quantities on a day-ahead market.

Gate Closure Time

The decision on the Gate Closure Time has to be made before the go-live of the isolated or coupled market and consulted with the market participants. The GCT shall be defined for the isolated mode with the respect of other non-MRC isolated markets (4MMC, SEEPEX) and SEE CAO, since the key advantage of the isolated exchange market is to enable arbitrage between isolated markets. For the efficient trading also the explicit allocation results for cross-border capacities shall be available.

The status of GCT in the region is:

- 4MMC GCT – 11:00 CET
- SEEPEX – 10:15 CET
- SEE CAO – 9:30 CET

Since the results from daily explicit allocation results for cross-border capacities for Macedonian – Greek border are available at 9:32 CET² (final results at 10:00 CET), for Macedonian – Serbian border at 9:45 CET³ and for the Macedonian – Bulgarian border at 10:00 CET⁴, the consultant propose the

²SEE CAO Rules for explicit Daily Capacity Allocation on Bidding Zone borders serviced by SEE CAO available at http://www.seecao.com/sites/default/files/documents/document/2_SEECAO_Daily%20Allocation%20Rules_final_0_0.pdf

³Daily Auction Rules for the MK-RS border https://www.ems.rs/%2Fmedia%2Fuploads%2F2018%2FPravila%2FMKRS%2FENG%252002%2520MK-RS%2520DailyAuction%2520Rules%2520for%25202018_09112017_clean.pdf

⁴ Daily Allocation Rules of Cross Zonal Capacities on the border between the Bidding Zones ESO and MEPSO <https://aukcijaatc.mepso.com.mk/PublicPage/AuctionRules.aspx#AuctionRules2018>

GCT for Macedonian PX market not sooner than 10:05 CET, based also on the input of (key) market players.

After the implementation of regulation 2015/1222 and implementation of market coupling on any Macedonian interconnected border, the GCT shall be set to the 12:00 CET⁵.

Clearing and financial settlement

A PX member should be also a member of the PX clearing system, which is acting as CCP and provides the invoicing and financial settlement of transaction concluded on the PX, and in this respect:

- the calculation of a particular member's financial liabilities and claims,
- the determination of a particular member's margin after the offsetting of mutual liabilities and claims,
- the payment of financial liabilities, and
- the financial settlement of concluded transactions.

In the clearing process CCP appears as the counter-party in every transaction concluded, either as a buyer to the seller or as a seller to the buyer. Members transfer all their financial liabilities and claims to CCP as the new creditor or debtor. After assuming all financial liabilities and claims, CCP offsets all the financial claims from a particular member assumed under the clearing rules.

CCP guarantees the fulfilment of financial liabilities for transactions concluded on the PX, and members of the PX must therefore provide the required financial guarantees for financial liabilities deriving from their involvement on the market. Members can provide financial guarantees in prescribed form (such as a bank guarantee payable upon first call or a cash deposit). Should any member fail to make the payments arising from concluded transactions, CCP uses the financial guarantee funds of the defaulting member in question to fulfil its liabilities to other members arising from the transactions.

For the clearing and financial settlement process, the most important element is the decision of payment cycle for net creditors and net debtors. The most common payment cycles are:

- T+1 payment cycle meaning the payment or receivable by PX as CCP towards market participants or cross-border CCP shall be done one day after trading day.
- T+2 payment cycle meaning the payment or receivable by PX as CCP towards market participants or cross-border CCP shall be done two days after trading day.
- T+1 and T+2 payment cycle meaning the payment by PX as CCP towards market participants or cross-border CCP shall be done two days after trading day and receivable to PX as CCP towards market participants or cross-border CCP shall be done one day after trading day.

Current standard by the CCPs operating under the MRC is cross-border payment cycle in T+1.

⁵CACM Guidelines, article 47

Products

Consultant proposes to start the organized market with hourly products only and offer the block products in the later stage, if the market participants will request it and if the liquidity of the market allows it.

Trading platform

Based on the feedback provided by involved and relevant stakeholders during the provision of Task 2, consultant proposes to select the service provider of the trading system via selection procedure. The modalities and form of the selection procedure e.g. closed internal procedure or public tender governed by the public procurement law shall be defined by the newly established market operator.

The selected trading platform shall be PCR compliant, since this will enable the Macedonian PX to couple with neighbouring markets. The day-ahead auction trading system and corresponding matching algorithm shall enable:

- 1) to run day-ahead market in isolated mode for one bidding zone
- 2) uniform (marginal) pricing,
- 3) the following list of products (once the CACM is in force, the list of products is defined in the MCO plan and relevant methodology)
 - a. simple hourly energy offers/bids,
 - b. linear pricewise bids and offers
 - c. regular Block Orders
 - d. profile Block Orders
 - e. linked Regular Block Orders
 - f. linked Profile Block Orders
 - g. flexible Hourly Orders
- 4) negative prices
- 5) minimum/maximum price setting (once the CACM is in force, the minimum/maximum price setting is define din MCO plan and relevant methodology),
- 6) prices shall be expressed in MKD/MWh with an accuracy of up to two decimal points,
- 7) quantities shall be expressed in MWh with an accuracy of up to three decimal points,
- 8) Macedonian calendar of business days, weekends and holidays shall be deployed,
- 9) time schedules for the operations of day-ahead market shall be adjustable so that Market Operator can determine them,
- 10) interfaces of trading system must be in Macedonian and English language,
- 11) trading reports must be in Macedonian and English language,
- 12) trading system must comply with the requirements of the relevant ENTSO-E regulatory frameworks, use standard communication protocols, and not require the use of specialized software from market participants,
- 13) all databases (main, test and reserve) must be made available in such format that they can be replicated/stored in Macedonia,
- 14) trading system should allow Market Operator to administrate market participants, necessary changes in product types, time schedule, reports without significant development and additional costs,
- 15) trading system shall support various types of access (web access, tokens, etc.).

It shall be also pointed out that the vendor shall provide to the Market Operator support for software and its upgrade and that it should supply templates of market rules, member agreements and other legal documentation related to set up and operation of trading system and related day-ahead market.

Furthermore, the consultant proposes that the provider of the trading platform is linked to the provider of the PCR Serviced PX services.

PCR operations services

Service provider of trading platform shall include in offer of the trading platform optional service for the PCR implementation and service provision for the Service PX with the purpose of Macedonian PX to implement market coupling in shortest possible time to selected neighbouring market. The offer shall be based on current model for serviced PX by service provider, supported with at least one reference in the perimeter of European Union under the regulation of CACM.

The PCR services shall be performed by Servicing PX to Serviced PX directly with all the relevant information flows shall be exchanged between the above mentioned PXs, respecting that the term PCR services are activities provided by Servicing PX in order to include the Bidding Area of Serviced PX in PCR operations with Servicing PX providing Serviced PX with the calculation of market results and the management of data in input (collection from Serviced PX and transfer to PCR) and output (collection from PCR and transfer to Serviced PX).

Service provider shall offer backup services for isolated market in case of different errors or decoupling situations (trading platform error, Euphemia error, connectivity issues, full decoupling scenario etc.) and possible services for operating the isolated bilateral market coupling after complete or partial decoupling of pan-European Market coupling.

Clearing platform

Clearing platform can be shared between Market Operator and PX, since they are supportive roles and without direct impact on independence and transparency of PX.

The clearing platform, internally developed or outsourced to the service provider, shall enable:

- 1) import of trade files in a predefined format from trading systems for preparation of invoices and offsets reports,
- 2) prepare invoices and offset reports by each individual market participant,
- 3) export invoices and offsets report in following formats (.xls, .pdf, .doc, xml.) by each individual market participant,
- 4) automatically forward invoices and offsets reports by email to each individual market participant,
- 5) administrate each individual market participant in the clearing system (new entry, modification of existing one, etc.),
- 6) prepare reporting sheets for each individual market participant by traded quantity or traded amount for the specified delivery period,
- 7) enable individual market participants to access clearing system in order to download its invoices and offsets reports in various formats,
- 8) maintain the daily and monthly statements depending on the contract type,
- 9) use API interface for communication with external systems/users,

10) reports, invoices and offset reports have to be in the Macedonian and English language

Risk management system

The Risk management system, internally developed or outsourced to the service provider, shall enable:

- to check payments and outstanding statements,
- to check (net) positions of market participants per market segment,
- manage collaterals in a way that collaterals can be entered per settlement account,
- set the operating value of collaterals per market participant,
- set warning limits in order to prevent unsecured bids/offers to enter the market,
- calculate margins (initial margin, additional margin, price spikes margin),
- use API interface for communication with external systems/users,

Other issues – related market and services and capacity allocation

The day-ahead market set-up may be closely linked to other markets and services. Regarding the former, intraday and balancing markets are mostly relevant (due to oncoming RES power plants, for example). In terms of platform procurement, the intraday market support may be included in the tender as well. For the balancing market the law currently gives this task to the TSO. An option to consider would be to link the functioning of the intra-day and the balancing market. Once the Guideline for Electricity Balancing⁶ would enter into force, the classic balancing market would be limited to the final 15 minutes. The TSO may of course be active on all segments of the market, but the weight of its activity will increase when approaching the gate closure (and delivery).

Once the PX is coupled the TSO effectively delegates part of its capacity allocation to the PX. This is another argument for (as per one of the Consultant's recommendation) have the TSO as a shareholder / owner in the PX.

⁶ <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32017R2195&from=EN>

Detailed action plan

Adoption of the new Energy Law

Standalone Market Operator Company

The Market Operator shall be spun out of the TSO into an independent entity based on the current proposal of the Energy Law. PX is supposedly an activity within the MO.

Option for mandatory sale of RES and losses with the decision of government

Liquidity is a key variable for small markets in development with one major producer where one can easily influence the price of electricity with overbidding other smaller market participants. Therefore the consultant proposes RES and grid losses are sold and purchased on the PX to establish initial liquidity and show support to the organized market place as institutional market participant. Depending on the quantity and profile of RES energy, the MO might sell the entire quantity on the PX or combine long-term (e.g. yearly) auctions with the day-ahead (and possibly at a later stage, intra-day market). For the purchase of grid losses, the responsible entity is the TSO and the DSO. As mentioned in the Recommendations chapter, the 25. 4. 2018 draft Energy Law contains a provision (Article 92 para 5 and 6) regarding the inclusion of purchase of electricity from regulated entities and purchase and sale of RES electricity in the Market Rules. If the intent is just to clarify the procedures on channelling this energy on the PX, then the details on sale / purchase modalities could be regulated in the Market Rules.

Otherwise, the provision of liquidity by the TSO, DSO and MO (RES) may be voluntary and agreed between involved stakeholders, but the Consultant proposes to formalize this process (Rules, or at least Contracts). As far as the MO is concerned, this is particularly sensible since (and if) the PX activity is within the MO, a potential conflict of interest arises⁷. The problem is avoided by clearly defining procedures in the Market Rules that are at least confirmed (or even drafted – last seen Energy Law draft) by the Regulator.

Option of mandatory sale by incumbent producer / purchase by major supplier with the decision of the government / regulator

Since major producers can easily influence the price of electricity with overbidding other smaller market participants, their role is the most important one for building a liquid and stable day-ahead electricity market. The Consultant proposes to include an optional provision in the Energy Law to require mandatory participation on the PX. Such a provision could be used for procurement as well. It needs to be stressed, that the Consultant only proposes to include an option in the Energy Law, to be used as a “last resort” alternative.

Establishment of PX

PX as department included in organizational structure of Market Operator

MEPSO shall establish the limited liability company with sole ownership of the TSO and shall foresee that the PX activity is appropriately organised.

⁷Linked also to CACM, Article 6 (points »d« and »f« - adequate level of business separation from other market participants; treat all market participants in a non-discriminatory way)

Employment of responsible persons

Market Operator shall establish a process to employ or designate already employed human resources from MEPSO or outside to the newly established MO/PX. The key roles to be designated to employees as soon as possible are the position responsible for sales, key account management and marketing, the position responsible for development, market coupling and international cooperation and the position responsible for market operations. The position of responsible for clearing and financial settlement may be at least temporarily allocated to the employees of the MO.

Drafting phase

Exchange rules, Market rules and Clearing and Settlement rules shall be drafted in order to set-up basic governance and institutional infrastructure for the PX operational phase. For the sake of efficiency the consultant proposes to include special consultant services for the drafting phase in order to speed up the initial process and have the basic ground prepared before start with implementation of technical and operational solutions.

Approval phase

National regulatory Agency shall be part of approval phase of Exchange rules, Market rules (or even the one to draft these)and Clearing and settlement rules.

Agreement of market maker and liquidity provider role

Agreement with ELEM and EVN about the role of the market maker and liquidity provider.

Selection of service provider

Prepare the internal or open public tender for the selection of service provider of trading platform and clearing platform, if applicable. The procurement of the trading system is a given fact, while the clearing issue depends on the possible synergies with other MO activities. Given Article 89 of the 25. 4. 2018 Energy Law possible synergies with the TSO are limited. Given these facts, the tendering for clearing services seems sensible, given the fact that it seems the MO will not be responsible for the financial settlement of imbalances but just calculate the results (Energy Law, 25. 4. 2018, Article 88(2)). Such a tender is not necessarily bundled with the trading system tender, yet the data flow from the trading system must be guaranteed.

Public presentation and discussion with main traders

When drafting the main principles of market rules (GCT, result publication, procedures) and clearing and financial settlement rules (payment cycle, VAT reverse charge, invoice procedures, etc.) the public consultation shall be organized where all stakeholders including major traders, EFET, etc. shall be invited to give feedback.

Involvement in international cooperation bodies for market integration

Apply for Observer status in the Multi-regional Coupling initiative – MRC

To start activities for the market integration, both the transmission system operator and PX shall acquire the status of Observer under the MRC DAOA (or its successor) in order to start the process of first go-live of market coupling. Beneficiary signed the MRC adherence form on October 12th 2017

and is already observer to the MRC. The newly established MO/PX shall follow the same process, when the company is set up and legally established.

Status of observer under the INCA and ANDOA

To start activities for the market integration MO/PX shall start the process to acquire the status of Observer under the INCA (or its successor) and ANDOA. This process shall be in line with the process of adoption of regulation 2015/1222.

Establishment of bilateral/regional market coupling projects

In line with provisions of the MRC DAOA all interested parties for the market coupling go live shall prior the MRC go-live agree on the bilateral or regional implementation project for market coupling. In order to start the activities for market integration, MO/PX shall, in cooperation with Beneficiary, enter into the project with parties from neighbouring countries (TSO and PX) in order to start bilateral project for coupling between Macedonia – Bulgaria, Macedonia – Greece or Macedonia – Serbia or any other wider regional implementation projects with more than four parties.

Adoption of regulation 2015/1222

PX designation process for NEMO status

After the adoption of regulation 2015/1222 in line with the Energy Community adoption process, PX shall implement all the regulation' requirements for NEMO designation and prepare application for the required process by the NRA or other designation entity. Consultant proposes that all the implementation processes in the PX are from the beginning in line with the NEMO requirements from the regulation 2015/1222 since this will enable cost and time efficient implementation and designation.

Designation of Market Operator as NEMO by the Ministry and NRA

The authority responsible for initial NEMO nomination and later on for the additional nominations in the future is⁸:

- national regulatory authority, responsible for the energy industry, by default;
- other authorities, designated by Member State, with the condition that such other authority shall have the same rights and obligations as the regulatory authority.

⁸CACM Guidelines, article 4, paragraph 3

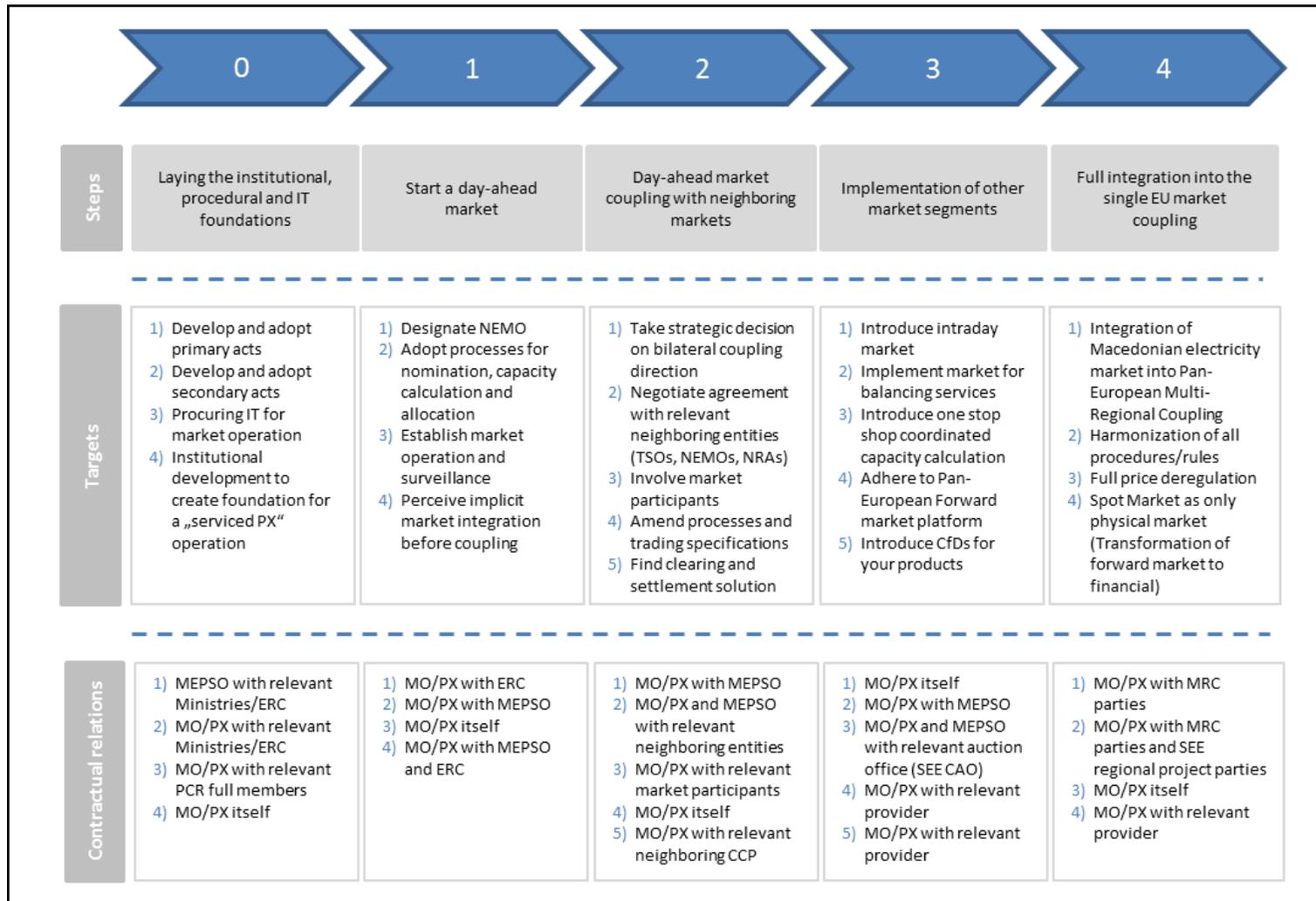
Action plan elements with stakeholder's actions

Action	Stakeholder	Time
Governmental decree for organized electricity market	Government	6 months
Standalone Market Operator Company establishment	MEPSO	3 months
Adoption of Market Rules	Regulator, Market Operator	3 months
Establishment of PX (bundling with MO assumed)		
PX as an activity in the organizational structure of Market Operator	Market Operator	3 months
Employment of responsible persons	Market Operator	4 months
Documents Drafting phase (Rules, agreements, clearing, internal procedures, etc.)	Market Operator	4 months
Approval phase	NRA	3 months
Preparation of Terms of Reference for selection of Service providers	Market Operator	2 months
Selection of service providers (trading application, clearing)	Market Operator	4 months
Technical implementation by service provider	Market Operator	6 months
Set-up of financial settlement (bank accounts, procedures, etc.)	Market Operator	6 months
Internal testing and testing with market participants	Market Operator, Stakeholders	2 months
Agreement of market marker and liquidity provider role	Market Operator	2 months
Public presentation and discussion with main traders	Market Operator, Stakeholders	1 month
Involvement in international cooperation bodies for market integration		
Apply for Observer status in the Multi-regional Coupling initiative – MRC	Market Operator	1 month
Status of observer under the INCA and ANDOA	Market Operator	2 months
Establishment of bilateral/regional market coupling projects	Market Operator, MEPSO	2 months
Adoption of regulation 2015/1222		
Designation process for NEMO status	Market Operator / NRA / Government	6 months
Designation of Market Operator as NEMO by Ministry and NRA	NRA / Government	6 months

Table 2: Action plan

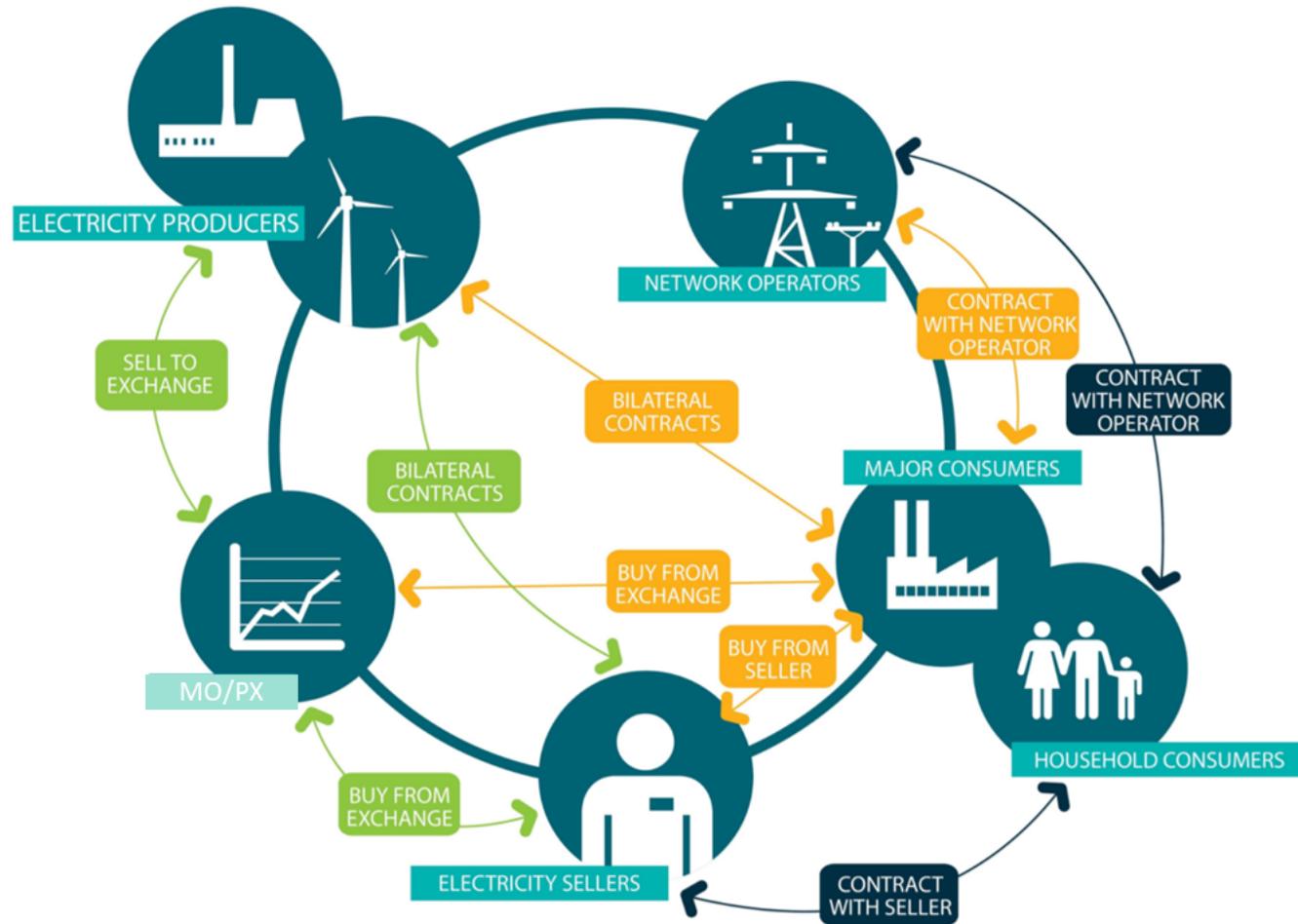
The actual timings are dependent primarily on the stakeholders involved.

Graphical representation of the (extended) road map



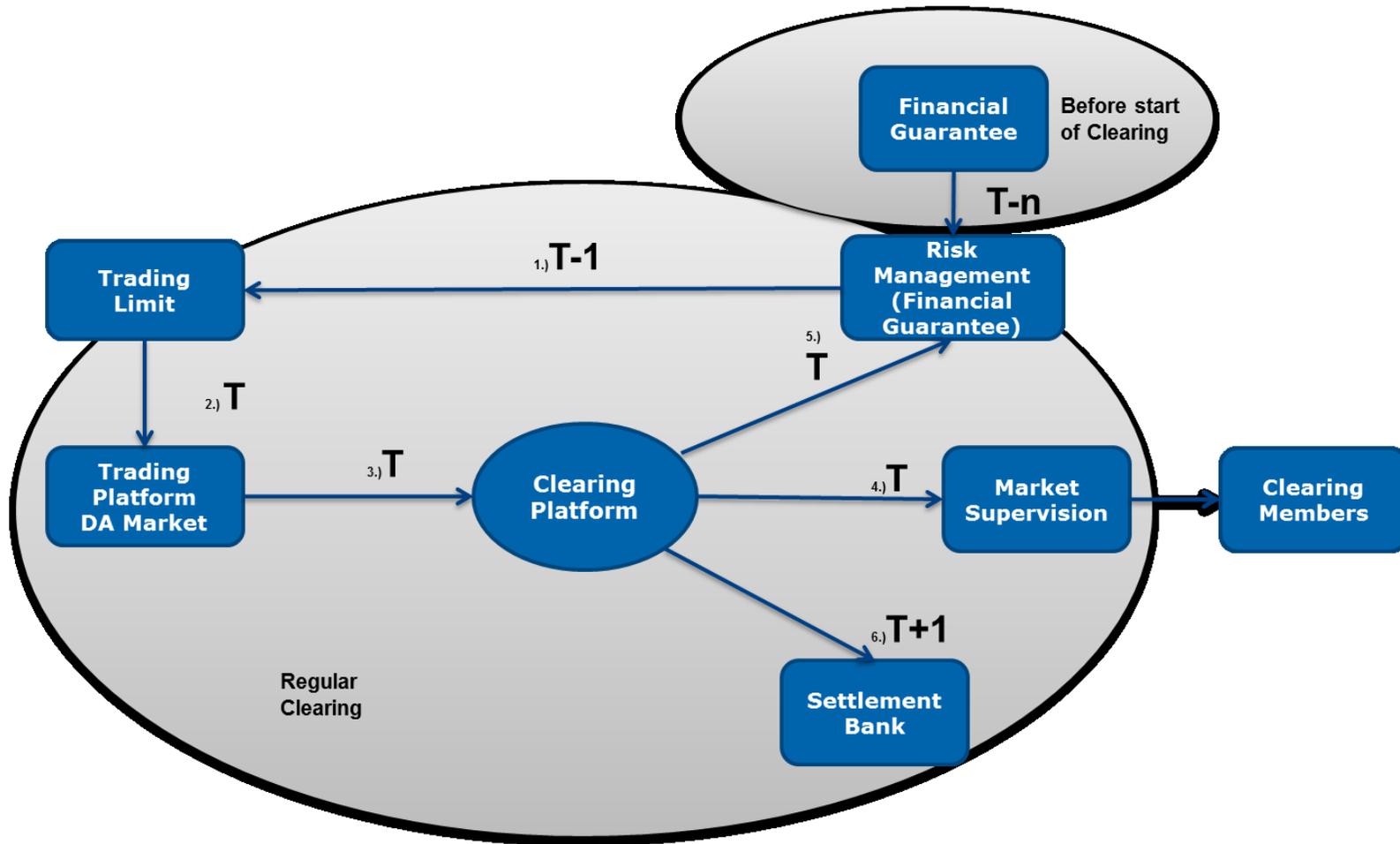
Picture 1: Graphical representation of the (extended) road map

Graphical representation of the basic market structure



Picture 2: Graphical representation of the basic market structure

Graphical representation of the (financial) clearing process



Picture 3: Graphical representation of the clearing process

Institutional set-up

The existing and proposed domestic legislation shall support the proposed institutional and organizational model.

Domestic legislation

The relevant legislation (VAT, public procurement, Law on Trade Companies) seems to be – based on available information – suitable for the PX to operate.

Regarding VAT, a full reverse charge mechanism is advisable, yet many EU PX operate fine even without it. The same is true regarding the establishment of subsidiaries.

On public procurement, the legislator needs to be careful to allow the TSO and DSO to procure losses via the PX – a very important step for initial liquidity establishment, together with the sale of RES electricity. The 25. 4. 2018 draft Energy Law contains a provision (Article 92 para 5 and 6) regarding the inclusion of purchase of electricity from regulated entities and purchase and sale of RES electricity in the Market Rules. If the intent is just to clarify the procedures on channelling this energy on the PX, then this is fine and even advisable– but attention needs to be paid not to come in conflict with the Law on Public Procurement.

Licences should be kept only when they bring added value. For example: For the PX (Article 90, “operator of an organised electricity market”) this makes little sense, since: both the Regulator and the TSO are involved in the PX nomination process, the government prescribes the operations and conditions (Article 90(3)) and the Regulator confirms both the fees and the rules. Based on this, the licence seems superfluous.

Regarding definitions, the Consultant recommends that the terms “market operator” and “energy (or electricity) exchange” are used for the MO and PX respectively. This will avoid confusion.

Since major producers can easily influence the price of electricity with overbidding other smaller market participants, their role is the most important one for building a liquid and stable day-ahead electricity market. The Consultant proposes to include an optional provision in the Energy Law to require mandatory participation on the PX. Such a provision could be used for procurement as well. It needs to be stressed, that the Consultant only proposes to include an option in the Energy Law that could be activated later on based on regulatory or governmental assessment and approval.

CACM implementation

If the legal and regulatory procedures in Macedonia are implemented promptly, the PX (either in the MO, or the tender based entity) will be set-up as a monopoly by the time the CACM enter into force for Macedonia. The designation procedure should then be followed. As mentioned in this section, it is sensible to strive to be CACM compliant even before it enters into force as it will facilitate the transition, as well as ease the implementation of market coupling.

Conclusion

This document presents possible models of the organisation and operation of the day-ahead market in Macedonia, reviewing also the existing and potential legal framework and the WB6 framework. It also relays the requirements of CACM and outlines the main benefits and drawbacks of various alternatives.

It proposes a model for the establishment of the day-ahead market (PX) in Macedonia, taking into account also current international and national legislative and regulatory efforts.

Given the perceived intent of the legislator (grasped through the review of various versions of the Energy Law), as well as various meetings and interviews with various stakeholders, the proposed model has the following main characteristics:

- 1.) The PX has a monopoly status. Particularly in bundled with the MO, this seems a sensible solution given all the circumstances (market size, possible liquidity procurement sources, etc.).
- 2.) If the MO is spun out of the TSO, then it is sensible to bundle the PX with the MO, particularly given its monopoly status.
- 3.) Given the small market size, the PX should strive for efficiency, yet it should retain core operations in-house. It is sensible to tender for a trading software solution and possibly also the clearing solution (as a service, retaining the flow of money through the local market).
- 4.) Particular attention should be paid to get all the relevant stakeholders on board from the beginning. An initial local liquidity is necessary, irrespective of market coupling. To this end four points are central: 1. Procurement of (part of) the grid losses through the PX; 2. Sale of (part of) the RES energy through the PX; 3. Agreements with key players (liquidity provision, market making) and 4. Option for mandatory participation.