

Client European Commission – Directorate General for Energy and Transport – Directorate C

Subject Updating “T E N-Energy- Invest” study with a particular attention paid to the future development of the Energy Market in the Baltic region – Methodology to prioritise infrastructure projects–
**Working Group Baltic Electricity Market
Market Design, Present Regulatory and Legal Framework, Existing Barriers in the Baltic Member States of Estonia, Latvia and Lithuania – Roadmap towards an integrated power market between the Baltic Member States and the Nordic Countries**

Order European Commission – DG Energy and Transport – Directorate C1 –
Contract number: TREN/09/ADM/SI2.528743, March 2009

Notes

Partial reproduction of this document is permitted only with the written permission from CESI.

PUBBLICATO A9012549 (PAD - 1194966)

N. of pages 29 **N. of pages annexed**

Issue date 8th May 2009

Prepared IMP - Cova Bruno, IMP - Gregori Luca
A9012549 2982 AUT A9012549 3336 AUT

Verified SIS - Ardito Antonio
A9012549 2935 VER

Approved SIS - Il Responsabile - Ardito Antonio
A9012549 2935 APP

Mod. RAPP v. 03

Table of contents

1	FOREWORD	3
2	GLOSSARY	5
3	THE POWER MARKET IN THE BALTIC MEMBER STATES	6
3.1	Main requirements and basic conditions of a Power Market Design	6
3.2	Common objectives of the Market Design for the Baltic electricity market	6
3.3	Basic concepts for the Baltic Market Design	7
3.4	Physical transactions of the power market in the Baltic Member States	8
3.5	Products traded in the power exchange	9
3.6	Role of the Market Operator for the Power Exchange	10
3.7	Role of the Market Participants	10
3.7.1	Producers	10
3.7.2	Suppliers	10
3.7.3	Traders	11
3.7.4	Customers	11
3.7.5	Brokers	11
3.7.6	TSOs	11
3.7.7	DSOs	12
3.8	Balancing agreement	13
3.9	Access to the market and procedures	13
3.9.1	Access to the grid	13
3.9.2	Conditions for trading and clearing at the power exchange	14
3.10	Market Surveillance	14
3.10.1	Role of the regulator	15
4	INTERFACES BETWEEN THE MARKET OPERATOR AND THE TRANSMISSION SYSTEM OPERATORS	17
5	EXISTING REGULATORY AND LEGAL FRAMEWORK	18
6	EXISTING MARKET BARRIERS	25
7	ROADMAP	27
8	REFERENCE DOCUMENTS	29

REVISIONS HISTORY

Revision number	Date	Protocol	List of modifications and/or modified paragraphs
zero	May 2009	A9012549	First issue

1 FOREWORD

The purpose of the present report is to describe the basic principles that should be followed by the Baltic Member States (MS) for the development of a regional power market integrated with Nord Pool and to provide the input to the Regulators and the Ministries for the necessary reforms to be adopted.

Firstly, this report addresses the Power Market Design for the Baltic MS, which consists of a set of guidelines governing the sale/purchase of electrical power and the operation of the generation, transmission and distribution system. The market design document shall represent the reference document to subsequently develop the “market chart” describing in detail all the procedures to be applied during the market operation.

Since the agreed target is the attainment of a common power market between Baltic MS and Nordic Countries, the rules to be introduced in the Baltic MS regional market shall be consistent with the key elements of the Nordic market design, while keeping a full compliance with the EU Directive 2003/54/EC, also during the transitional phase from the present power exchange situation to the final Baltic integrated power market. In the identification of the role of the market participants also the new provisions included in the new EU Electricity Directive under discussion have been considered.

As agreed among the members of the Working Group Electricity Market Integration (EMI), in a first stage, the Baltic power exchange will cover only the day-ahead market and, thereafter, on the basis of the acquired experience and feedback from the day-ahead market, further markets could be introduced in the power exchange, namely the intraday market (continuous negotiation) and the financial markets (e.g.: futures).

The second part of the report shows the present regulatory and legal framework, the procedures in place for power balancing, the market organisation as well as the technical characteristics of the generation and transmission systems in the Baltic MS. The overview of the present situation in Estonia, Latvia and Lithuania has been prepared by the representatives of the TSOs, Regulatory Authorities and Energy Ministries of the concerned countries.

Moreover, the existing market barriers have been identified and shared among the WG members.

Having in mind the market model that shall be developed, a series of steps to move towards the final market model have to be defined: the measures to be undertaken and their schedule are catalogued in a roadmap that started being discussed among the WG EMI members. A common and shared position among all the members is that the power exchange shall be progressively developed following the experiences already acquired in Scandinavia and Finland when starting introducing the power market. A basic condition consists of reciprocity, which shall be warranted all along the transitional phase. To this purpose, some urgent actions have already been identified, such as removing the existing barriers for the cross-border trading and creating a real market openness, with protection measures possibly applied only

to customers qualified for universal service (households and small enterprises as defined in Directive 2003/54/EC). After having reached a consensus on the market design among the members of the WG, the roadmap towards an integrated power market between the Baltic MS and the Nordic Countries is presented in the last chapter of this report. The main steps to be undertaken during the transitory phase towards the Baltic MS power market integrated with Nord Pool are illustrated, though being aware that some points shall be clarified in more detail during the implementation of the roadmap.

The market design and the steps towards the *“creation of an open and transparent common Baltic MS electricity market and its integration with the Nordic electricity market”* are consistent with the contents of the *“Joint Declaration of the Prime Ministers’ Council¹ of the Baltic Council of Ministers”* signed in Vilnius on 27th April 2009.

Finally, it is worth mentioning that the results so far achieved have been made possible thanks to the support of the E.C. and the open and friendly collaboration of the representatives of the Baltic MS and the Nordic Countries either at the WG meetings or sub-group meetings followed by intense e-mail exchanges.

¹ Prime Ministers of Lithuania, Latvia and Estonia

2 GLOSSARY

Baltic MS	Baltic Member States: Estonia, Latvia and Lithuania
BEMIP	Baltic Energy Market Integration Programme
DSO	Distribution System Operator
EEA	European Economic Area
ERGEG	European Regulators' Group for Electricity and Gas
HLG	High Level Group established at the European Commission in November 2008 and composed by ministerial representatives of the Countries surrounding the Baltic Sea.
ITC	Inter-TSO Compensation
NTC	Net Transfer Capacity
NPS	Nord Pool Spot AS
TPA	Third Party Access
TSO	Transmission System Operator
WG EMI	Working Group - on "Electricity market integration"

3 THE POWER MARKET IN THE BALTIC MEMBER STATES

3.1 Main requirements and basic conditions of a Power Market Design

The main requirements of the Market Design can be summarised as follows:

- ✓ to ensure compatibility and consistency between technical operation of the electricity system and the functioning of new financial/commercial mechanisms at a regional level;
- ✓ to ensure a smooth transition and accommodate the viability of existing national entities and the affordability for consumers, while limiting the use of market distorting mechanisms (stranded cost recovery, excessive public service obligations);
- ✓ to foster attraction of new investments (and new entry) and assure security of supply while optimizing economic competitiveness of electricity supply;
- ✓ to take into account the specificities of the countries of the region, including the ongoing reform process in the energy sector.

The above requirements involve the fulfilment of some basic conditions:

- ✓ unbundling of the TSO and the DSOs from generation and supply;
- ✓ creation of market rules that don't discriminate any parties of the electricity sector, neither national or international actors;
- ✓ setting up market structures that promote competition on equal terms, including gradually phasing out subsidies along all the relevant parts of the value chain.

3.2 Common objectives of the Market Design for the Baltic electricity market

The main common objectives of the Market Design for the Baltic electricity market can be summarised as follows:

- ✓ Equal market conditions (no discrimination among market participants; no obstacles for new entrants);
- ✓ Free competition in each country;
- ✓ Reduced market concentration;
- ✓ Sufficiently high market liquidity;
- ✓ Fair price-formation (reliable and transparent market price for electricity);
- ✓ Transparent capacity allocation, based on implicit auction;
- ✓ Transparent market information;
- ✓ Efficient market monitoring;

3.3 Basic concepts for the Baltic Market Design

Non-compulsory power exchange

The Baltic Market will be designed in the form of a non-compulsory power exchange, where market participants can freely choose either to bid at the power exchange or to establish bilateral contracts. For the Baltic Market physical bilateral contracts will be allowed only inside each bidding area, while financial bilateral contracts may be established also across different bidding areas.

Organisation of energy transactions and establishment of market price

The natural objective of the power exchange is to allow the organization of the energy transactions through the participation of qualified members.

The priority objective of the power exchange is the establishment of a clear and incontestable market price reference for all actors of the Baltic States market.

Target year

The target year for the full implementation of the common Baltic market integrated with Nord Pool has been fixed at the year 2015.

Since the Baltic market shall be integrated with Nord Pool, it shall be consistent with the key elements of the Nordic market design, namely the following concepts shall be met²:

Power exchange at wholesale market

- ✓ Nord Pool Spot Baltic with three bidding areas^{3 4}(price difference only in case of internal Baltic congestion)
- ✓ Implicit auction between Baltic countries and towards Nordic Countries on a single trading platform
- ✓ Transparency according to the ERGEG's North European Electricity Regional Initiative

Balancing

- ✓ Harmonized imbalance settlement and imbalance pricing
- ✓ Common reserves and balancing power market

Network tariffs

- ✓ Harmonized network tariffs for generators - structure and level

Other conditions

- ✓ Baltic retail market
- ✓ Market place financial trade
- ✓ Estonia, Latvia, Lithuania and Finland have a common position and trading principles towards non EEA third countries.

² These market conditions have been agreed at the Helsinki sub-group meeting among TSOs representatives of Estonia, Latvia, Lithuania, Finland with participation of Nord Pool and CESI representatives (23rd Febr. 2009).

³ It means that we'll have a single power exchange for the three Baltic MS integrated with the Nord Pool and, in case of congestion across the borders between Finland/Estonia and/or Estonia-Latvia and/or Latvia/Lithuania during the day-ahead market clearing, the congestion will be implicitly solved with the creation of a price difference between the congested cut-sets.

⁴ During the functioning of the power market the bidding areas can be revised, namely reduced to two or one area, provided that sufficient NTC is warranted to avoid frequent congestion within the new areas. The reduction of bidding areas will require an enhanced cooperation among the concerned TSOs for the relieving of possible intra-area congestion through countertrading.

Its worth noting that modifications of the bidding area already occur periodically in Nord Pool Spot, namely within Norway.

In a first stage, the Baltic power exchange will cover only the day-ahead market. Thereafter, according to the acquired experience and feedback from the day-ahead market, further markets can be introduced in the power exchange, namely the intraday market (continuous negotiation) and the financial markets (e.g.: futures). The relationships between the day-ahead market (Elspot in Nord Pool) and the other physical and financial markets are shown in Figure 3-1, referred to the Nord Pool organisation.

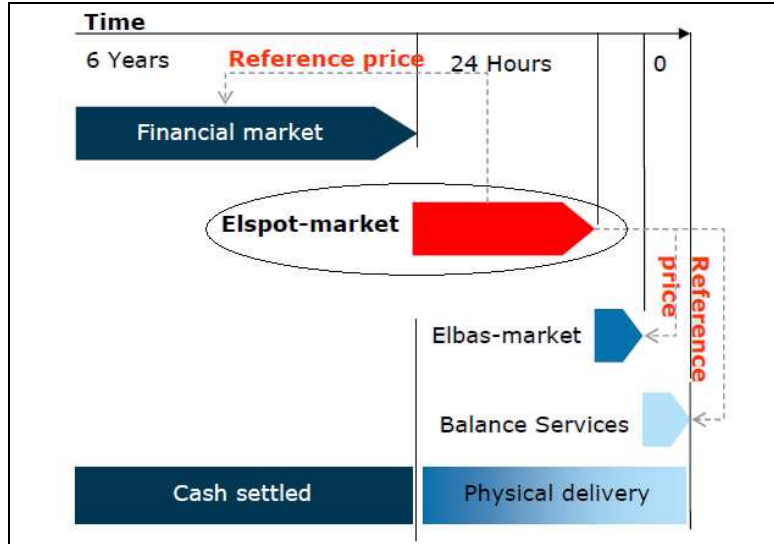


Figure 3-1 – Nord Pool Markets (source: Nord Pool)

3.4 Physical transactions of the power market in the Baltic Member States

Possible physical transactions (and actors) in the market are reported in the figure below.

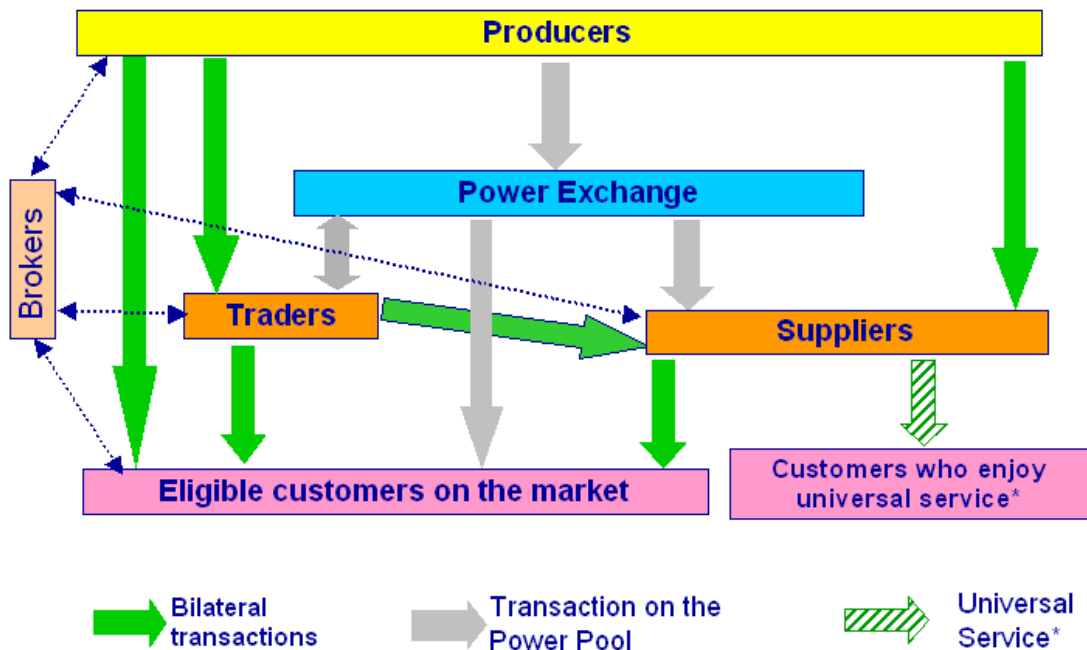


Figure 3-2 – Possible Physical transactions in the Power Market

*see Article 3, paragraph 3 of the Directive 2003/54/EC that states: “Member States shall ensure that all household customers and, where Member States deem it appropriate, small enterprises [...] enjoy **universal service**, that is the right to be supplied with electricity of a specified quality within their territory at reasonable, easily and clearly comparable and transparent price”

In the long term, physical transactions from suppliers of non-EEA countries might be envisaged (Figure 3-3) through participation to the power exchange or by means of bilateral contracts, provided that “reciprocity” in the market rules as well as in the environmental and safety standards is ensured. The option whether bilateral contracts from suppliers of non-EEA Countries can be established either with eligible customers or with traders is still open⁵.

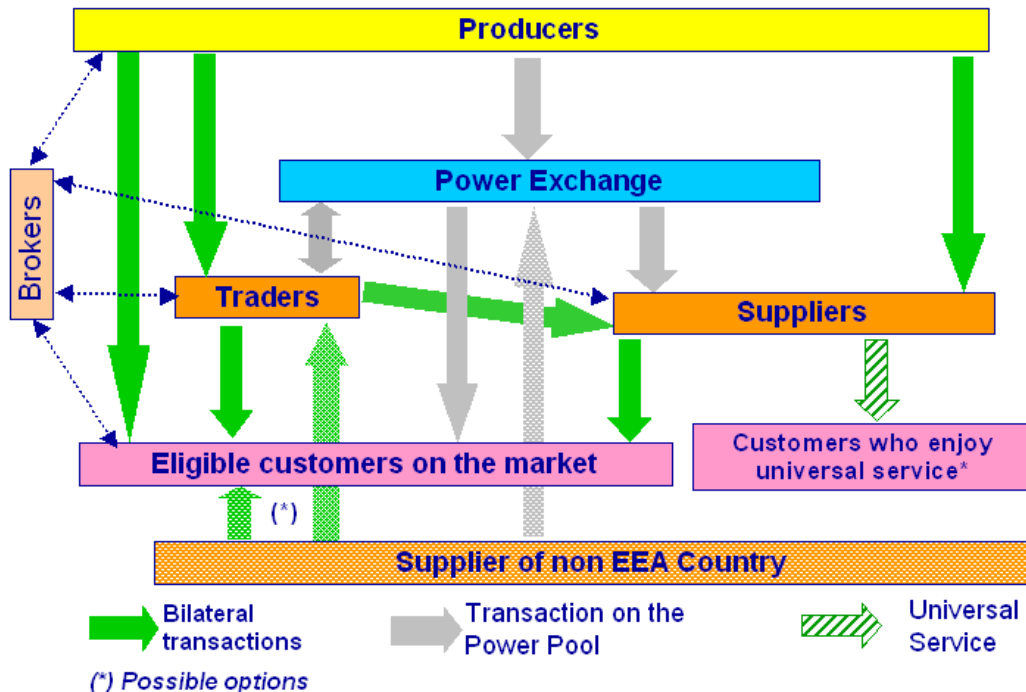


Figure 3-3 – Possible Physical transactions in the Power Market including suppliers from non-EEA countries

3.5 Products traded in the power exchange

The standardised contracts on the basis of which energy transactions are carried out, shall be consistent with what set forth in the “Rulebook for Nord Pool Spot’s Physical Markets”, namely:

- ✓ *Hourly bid*
It is the basic type of power market bid. Each participant submits a set of price/quantity for each hour and price area.
- ✓ *Block bid*
The block bid gives the participant the opportunity to set an “all or nothing” condition for all the hours within the block. The block bid is an aggregated bid for several hours, with a fixed price and volume throughout these hours. The participants can freely pick the start and stop hour of a block and a block bid must be accepted in its entirety.
- ✓ *Linked block bids*
Links between block bids mean that the evaluation and acceptance of one block bid (daughter block) is dependent on the acceptance of another block bid (mother block). All block bids that are linked together must be either only sales or purchase blocks and all linked block bids must be connected to one bidding portfolio in one bidding area.

⁵ The chosen solution shall warrant transparency in terms of possibility of monitoring the transactions from the Regulator and of tax payments.

✓ *Flexible hourly bid*

The flexible hourly bid is a sales bid of a single hour with a fixed price and volume. The hour is not specified, but instead the bid will be accepted in the hour with the highest price in the calculation, given that the price is higher than the limit set in the bid.

3.6 Role of the Market Operator for the Power Exchange

The Market Operator is a private-law entity that has the responsibility to operate the market in close collaboration with national TSOs.

Its activities are regulated and are based on the principles of transparency, non-discrimination and independence from the interests of the industry. Its main activities and responsibility are:

- ✓ Registration of participants to the power exchange
- ✓ Anonymous comparison of bids
- ✓ Settlement of the retained transactions
- ✓ Clearing service (management of counterparty risk).

It is not responsible for carrying out balancing either at a national or at a regional level⁶.

3.7 Role of the Market Participants

3.7.1 Producers

Natural or legal persons generating electricity. They have the right:

- ✓ to contract for electricity generation on a bilateral basis with eligible customers or suppliers within one bidding area, in case of physical contracts, or also across bidding areas, in case of financial contracts,
- ✓ to offer generation capacity to the Nord Pool Spot,
- ✓ to contract for reserve and ancillary services with TSOs of any country of the region,
- ✓ to export electricity to non-EU countries.

3.7.2 Suppliers

*Load-serving entities with rights to carry out wholesale trading*⁷. They can supply customers of the BALTSO region and carry out import and export transactions with non-BALTSO countries. They can enter into bilateral contracts with producers (physical and/or financial) or other suppliers and purchase spot energy in the Nord Pool Spot⁸. The suppliers can also buy electricity from traders or through brokers.

⁶ The Market Operator may possibly be responsible for the collection, elaboration and publication of all relevant information from national TSOs, in order to facilitate their work in providing real-time balancing and the settlement of imbalances at national level.

⁷ The role of suppliers defined here is the same as defined in the Directive 2003/54/EC at art.2, par. 8 “*wholesale customers*”.

⁸ Suppliers might also have the possibility to resell electricity to power exchange.

The suppliers shall make sure that the consumed electricity of its customers is produced somewhere in case of bilateral contracts. The customers of the supplier can be of any scale, high or low voltage, large or small consumption.

3.7.3 Traders

Entities offering services of selling or buying energy depending on the purpose of the trader. Trading companies can be part of a larger organization or a stand-alone company acting on the market by itself. The trader offers physical and financial portfolio managements service (this means that they take upon them the responsibility to optimise the portfolios of other producers or suppliers and handles their risk management).

For a producer it means they give direct information on how much to produce and when, depending on current and forecasted market prices. For a supplier they make sure that the supplier gets the cheapest supply available depending on the level of risk they wish to be exposed to through financial contracts and spot trading.

The driving incentives to act as a trader are to make arbitrage profits on differences between buy and sell prices. In an efficient market there are virtually very small profits to be made on the physical spot market. It is possible to act speculative on the financial market and make somewhat larger profits due to the larger volumes traded on the financial markets.

The trader usually handles further products besides electricity contracts. F.i., other type of services can be the optimisation of fuel supply, the carbon credit management or other environmental products such as green certificates.

3.7.4 Customers

Final consumers (end users) free to choose the power supply from the power exchange or through bilateral contracts. They may also act as self-suppliers, but they are not allowed to trade electricity for reselling to other final customers.

Household customers and small enterprises can enjoy “*universal service*”, that is the right to be supplied with electricity of a specified quality within their territory at reasonable, easily and clearly comparable and transparent prices, according to the provisions of the European Directive 2003/54/EC.

3.7.5 Brokers

Market actor connecting sellers and buyers of electricity or other products (e.g.: fuels, carbon credits). The broker acts on the wholesale markets and matches a buyer and a seller of some good. The brokers act independently and do not respond to any balance agreements with the TSO. Hence, they act with minimum risk, being responsible only to match contracts between buyers and sellers.

3.7.6 TSOs

The BALTSO electricity transmission grid, its operation and access regime have a pivotal role in the creation and operation of an integrated electricity market.

In this framework, TSOs are awarded the status of national entities, which retain full control and responsibility for the operation and planning of national transmission networks and provide TPA to

system users, under a regulated regime, on a non-discriminatory and non-restrictive basis. They operate at a single country level coordinating their actions with those of the neighbouring countries.

TSOs have full responsibility for the balancing of the national system and the provision of ancillary services to all system users in their country. They collaborate with other TSOs for the settlement of imbalances, but are fully responsible for the corresponding financial transactions at a national level. TSOs may conclude contracts and trade only for the purpose of balancing and the provision of ancillary and reserve services. For these purposes, they can enter into bilateral contracts with producers or traders throughout EU countries or also with non-EEA countries.

More specifically, each TSO shall be responsible for:

- ✓ ensuring the long-term ability of the system to meet reasonable demands for the transmission of electricity;
- ✓ contributing to security of supply through adequate transmission capacity and system reliability (planning stage);
- ✓ securing of supply and balance of the system at any moment in time, including the availability of ancillary services (operation stage);
- ✓ managing energy flows on the system, taking into account exchanges with other interconnected systems;
- ✓ providing operators of other interconnected systems with sufficient information to ensure the secure and efficient operation, coordinated development and interoperability of the interconnected system;
- ✓ ensuring non-discrimination between system users;
- ✓ providing system users with the information they need for efficient access to the system, for example published tariffs and connection rules;
- ✓ informing regularly and timely the market operator on the NTC at the borders of the price areas.

For an efficient functioning of the power market, the TSO should be unbundled. This means that the TSO should not be involved with any activities connected to the electricity market other than operating the transmission system. The concept is related to the fact that the tariffs for the transmission should be cost reflective and not be subsidized by any other activity. There is also the concern that if the TSO owned production assets, not related to the provision of ancillary services, it would be possible to manipulate the market.

The legal status of the TSO shall be compliant with the provisions of the European electricity Directive (Directive 2003/54/EC, art. 10).

The TSO shall preserve the confidentiality of commercially sensitive information obtained in the course of carrying out its business. Disclosed information regarding the TSO's own activities, which may have commercial importance, must be available in a non-discriminatory manner.

Moreover, TSO shall take actions to promote a better efficiency of the electricity market.

3.7.7 DSOs

Entity responsible for delivering the electricity to the consumers through mid and low voltage grids (distribution networks). The tasks of the DSOs are:

- ✓ To maintain a secure, reliable and efficient electricity distribution network in a non-discriminatory way between its users (consumers, suppliers and producers).
- ✓ To provide system users with the information they need for an efficient access to the system.

DSOs shall procure energy to cover energy losses and reserve capacity in their system according to transparent, non-discriminatory and market based procedures. When planning the development of the distribution network, the DSO shall take into account all the measures that allow to postpone or even to replace the need for the grid expansion or upgrading, such as energy efficiency, demand-side management measures and distributed generation.

If the DSO is part of a vertically integrated undertaking, it shall be independent at least in terms of its legal form, organisation and decision making from other activities not related to distribution. However, it is not necessary to separate the ownership of assets of the distribution system, but it shall be independent in terms of its organisation and decision making from the other activities not related to distribution.

Without prejudice to any legal duty to disclose information, the DSO must preserve the confidentiality of commercially sensitive information on other market actors or its own business that may be commercially advantageous if being disclosed in a discriminatory manner

3.8 Balancing agreement

Market participants have to enter into a supply agreement to cover the unbalances they may cause. The balance agreement can be established either with other market actors or TSOs. TSO has single right to balance the whole bidding area

3.9 Access to the market and procedures

The organization of the energy transactions in the market must take place through *the participation of qualified members*. It means that the procedures for the access to the spot market must be clearly defined and public. The access to the power exchange is open to all parties that are registered as members of the market, have signed the relevant adhesion contract and have provided the guarantees foreseen by the contract of market adhesion.

3.9.1 Access to the grid

A pre-condition for power trading is the access to the grid of the market actors. The access to the grid to produce/consume electricity must be free. It means:

- ✓ No legal, administrative barriers or discriminatory action for TPA to TSO or DSO networks
- ✓ Non discriminatory and transparent licensing process
- ✓ No barriers to change supplier of electricity
- ✓ No geographical barriers to connectivity.

There must be the possibility for market actors (buyers & sellers) to make informed choices based on transparent market information. It means:

- ✓ to guarantee the access to relevant and easily comparable information,

- ✓ to have easily available, transparent and non discriminatory network tariffs, well defined market rules, availability of information regarding system constraints and market, predictable and transparent regulatory process and regulation performed according to ex-ante principles (i.e. tariffs are reviewed and approved prior to becoming effective).

Network tariffs shall be cost reflective and harmonized among Baltic TSOs (perfect TSO and DSO monopolies) based on national regulation rules; this implies that current and future investments must be included in the network tariffs⁹ together with costs for transmission congestion, maintenance and losses. The network tariffs shall be defined and made public by the Regulators.

3.9.2 Conditions for trading and clearing at the power exchange

The conditions and the elements for trading and clearing shall be compliant with what reported in [5]. In particular, concerning the membership to operate in the power market, different categories of participants are possible: *direct participant, trading and clearing representatives, clearing customers*.

Direct participants are entities operating in the Baltic area that have entered into a Participant Agreement with the relevant Physical Market. The Participant Agreement must be signed prior to the commencement of trading. A Direct Participant may enter into transactions for his own account and, when approved by the Market Operator, as a Trading and Clearing Representative also for the account of Clearing Customers.

Trading and clearing representatives are participants that have the right to trade for their own account and obligated to trade on behalf of their Clearing Customers

Clearing Customers are persons or a legal entities who have signed a Clearing Customer Agreement as well as an agreement with a Trading and Clearing Representative in accordance with which the Trading and Clearing representative shall perform trading for the Clearing Customer's account and represent the Clearing Customer towards the Market Operator.

Market participants shall comply with a series of prescriptions laid down in the market chart and dealing with:

- ✓ Establishment of accounts
- ✓ Waiver of confidentiality
- ✓ Public licenses
- ✓ Agreement on balance responsibility
- ✓ Reporting obligations and audit

3.10 Market Surveillance

Market surveillance is a function of the Market Operator, who shall monitor the trading activities in the spot markets and highlight the need for investigations of possible breaches on laws and regulations¹⁰. Basically, market surveillance is looking for any matters related to the market participants' business in the markets that are likely to have a substantial impact on the prices. All information acquired in

⁹ Except for private investments in "merchant" lines

¹⁰ Whenever necessary, investigations of possible breaches on laws and regulations are carried out by the regulators or ministerial authorities.

investigations and cases handled by market surveillance, is treated as strictly confidential and only authorised personnel has access to the department's premises.

In addition to the monitoring actions carried out by the Market Operator, market surveillance shall exerted by:

- ✓ Control Authorities: Regulatory Authorities of the three Baltic Republics
- ✓ Commission for the Surveillance of the Stock Exchange operation (when the financial products will be traded).
- ✓ International group of concerned regulatory authorities, since we have a supernational power market: ERGEG or the new Agency for the Cooperation of Energy Regulators (according to 3rd package) can fulfil this task for matters involving more than one country.

3.10.1 Role of the regulator

The Regulator is the authority designated by the state to ensure the effective competition and the customers or suppliers non-discrimination as well as to monitor the electricity sector and the compliance of the power quality levels with the established targets.

The Regulator must be wholly independent from the interests of the electricity industry and responsible for ensuring non-discrimination, effective competition and the efficient functioning of the market.

The Regulator monitors:

- ✓ the rules on the management and allocation of interconnection capacity, in conjunction with the TSO's or authorities of those countries with which interconnection exists;
- ✓ any mechanisms that deal with congested capacity within the national electricity system;
- ✓ the time taken by transmission and distribution undertakings to make connections and repairs.
- ✓ the publication of appropriate information by TSOs and DSOs concerning interconnectors, grid usage and capacity allocation to interested parties;
- ✓ the effective unbundling between market actors and TSOs to ensure that there are no cross subsidies between generation, transmission, distribution and supply activities;
- ✓ the terms, conditions and tariffs for connecting new producers of electricity;
- ✓ the extent to which transmission and distribution system operators fulfil their tasks;
- ✓ the level of transparency and competition;

Once the Third Liberalisation Package will be adopted, the market monitoring responsibility of the Regulators will be strengthened, in particular in the following areas:

- ✓ monitoring compliance of TSOs and DSOs with TPA rules, unbundling obligations, balancing mechanisms, congestion and interconnection management;
- ✓ reviewing the investment plans of the TSOs, and providing in its annual report an assessment of how far the transmission system operators' investment plans are consistent with the European-wide 10-year network development plan; monitoring network security and reliability, and reviewing network security and reliability rules;
- ✓ monitoring transparency obligations;
- ✓ monitoring the level of market opening and competition, and promoting effective competition, in cooperation with competition authorities; and
- ✓ ensuring that consumer protection measures are effective.

Moreover, the national Regulators shall cooperate at European level, in close cooperation with the Agency for the Cooperation of Energy Regulators¹¹ and the Commission, to ensure competitive, secure and environmentally sustainable internal electricity and gas markets within the European Union, and effective market opening for all consumers and suppliers.

¹¹ To be established according the provisions of the Third Liberalisation Package

4 INTERFACES BETWEEN THE MARKET OPERATOR AND THE TRANSMISSION SYSTEM OPERATORS

For an efficient functioning of the power market, clear procedures shall be defined for the information exchange between the market operator and the TSOs. A scheme of a possible interface between the Power Exchange platform and the TSO's is reported in the figure below.

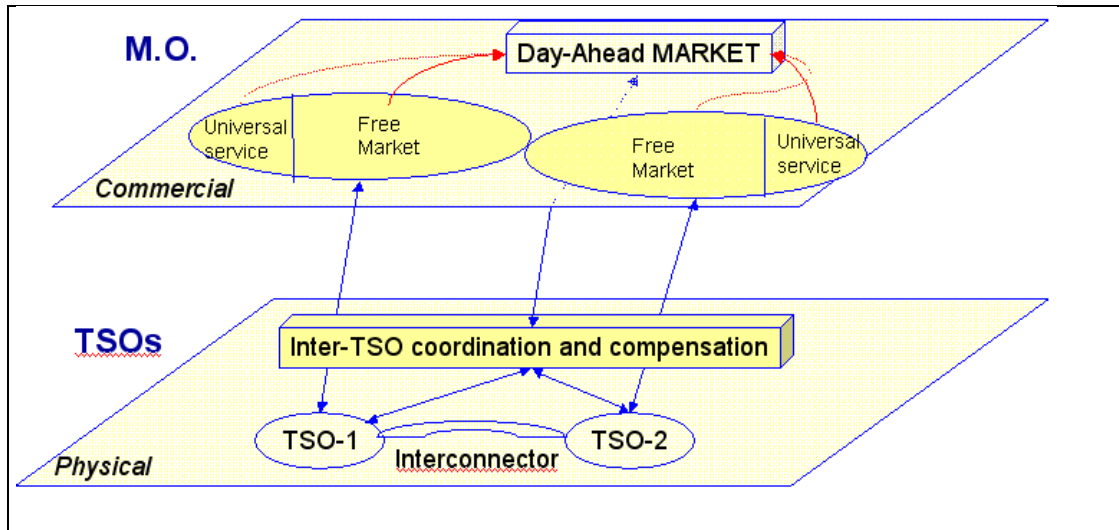


Figure 4-1 – Interface between the Power Exchange platform and the TSO's

The information forwarded by the TSOs to the Market Operator is:

- capacities across interconnections (referred to market zones);
- possible restrictions in the network capacity (e.g.: constraints limiting the generation in some power plants, etc.)

The information forwarded by the Market Operator to the TSOs is the outcome of the day-ahead market, in terms of the hourly power production schedule and hourly load absorption for the flexible demand. No information on the bid prices are transferred to TSOs.

The information flow between the Power Exchange the TSO's can be summarized as follows, according to the Nord Pool Spot rules:

Step 1

TSO's decide every morning the NTC for the next day. They send this info to the Market Operator by a fixed time limit. The declared NTC shall be considered as a firm capacity (for every hour of the next day)

Step 2

The Market Operator announces the capacity to market players.

Step 3

After the closure of the day-ahead market, the Market Operator announces the hourly prices and transfers to the market players the information on their sales or purchases. The TSOs are also given information about the trade in its role of system responsible entity.

Step 4

TSO's solve possible congestion internal to bidding areas through countertrading and inform the relevant producers, traders and suppliers.

5 EXISTING REGULATORY AND LEGAL FRAMEWORK

This chapter addresses the status of Legal and Regulatory Framework in place in the Baltic MS. The analysis has been carried out with the aim of highlighting the still existing gaps between the existing situation and the provisions of the European Directives 2003/54/EC [1], 2005/89/EC [4], the Regulation EC n° 1228/2003 [2] and the related Commission Decision n° 2006/770/EC [3]. The analysis has been performed by the representatives of TSOs, Regulatory Authorities and Ministry representatives of the concerned countries and its outcomes served as a basis for outlining the roadmap towards the implementation of the power market illustrated in chapter 3.

Table 5-1 – Legal framework

1. Laws & Regulations				
	Common features	Local Peculiarities/ Differences		
		Estonia	Latvia	Lithuania
1.1. TSO independence – is TSO and Trading effectively separated and TSO is not performing trading activities beyond its regular business?		Fully separated. TSO can trade with electricity only to cover transmission losses and to balance the system. All traders can make only fixed (planned) cross-border deliveries. Owner of imbalance in cross-border deliveries is TSO.	TSO is fully separate legal body. TSO performs trade with electricity only in order to cover transmission losses and to provide system services.	TSO is legally separated, but not in ownership. TSO of Lithuania has import and export permits and trades electricity to cover transmission losses, to balance the system and sells the surplus electricity of Ignalina nuclear power plant in external power markets. All traders can make only fixed (planned) cross-border deliveries. Responsible to cover imbalances in cross-border deliveries is the Lithuanian TSO.
1.2. Degree of formal market openness (consumers' right to choose a supplier - Directive 2003/54/EC)		Low, due to derogation: 35% (in 2009) 100% (in 2013)	High (100%)	High (100%)
1.3. Degree of real market openness; Is access to the universal service with regulated prices clearly limited to the certain customers?		None (0%) Universal service with regulated price is available for all customers	Medium (~55% of total end consumption) Universal services are accessible for all households and customers with turnover less than 10 MEUR and below 50 employees. All others must purchase electricity at market prices.	13% of consumers connected to the high voltage transmission grid have used eligibility rights. Universal service with regulated price is available for all customers.

Cont'd - Legal framework

1. Laws & Regulations				
	Common features	Local Peculiarities/ Differences		
		Estonia	Latvia	Lithuania
1.4. Generation support based on regional market principles without losing any subsidies (=generators do not lose subsidies because of sales to the market). No limitations for producer access to regional market		Generators can freely access to the regional electricity market without losing subsidies Support to power: - from RES (<100MW) - from efficient cogeneration	Yes (for RES from biomass or biogas over 1MW and efficient cogeneration over 20MW) No (other supported generation from RES and efficient cogeneration below 20MW - if electricity is sold to free market then subsidies are lost).	No. Generators can access regional electricity market outside the scope of subsidized electricity quotation – supported electricity cannot be sold outside of Lithuania. Support to power: - from RES (Wind power, biomass and small hydro power plants) - from cogeneration (quoted generation) -system security
1.5. Cross border trade restrictions / Export restrictions		No (3.26 EUR/MWh grid tariff for Estlink cable)	No	Yes (tariff 9LTL/MWh is applied for exported electricity by TSO)
1.6. Cross border trade restrictions / Import restrictions		Imports allowed from energy generated in EU countries only. Import licensing procedure for all importers	No	Imported electricity must be compulsorily sold at the day-ahead auction, which is organised by market operator (Lietuvos Energija). There is no right for suppliers to sell electricity directly to consumers in Lithuania

Table 5-2 – Regulatory framework

2. Regulatory framework				
	Common features	Local Peculiarities/ Differences		
		Estonia	Latvia	Lithuania
2.1. Institutional and financing model		Estonian Competition Authority (financed from the government's budget)	Public Utilities Commission (financed from contributions by licensed market participants)	National Control Commission for Prices and Energy (financed by the State budget)
2.2. Licensing	<p>Licensed activities:</p> <ul style="list-style-type: none"> - generation; - transmission; - distribution; - supply (trading). <p>Exception – de minimise cases.</p> <p>Territorial exclusivity for:</p> <ul style="list-style-type: none"> - TSO, - DSOs and - public supply. 	<p>Licence also required for:</p> <ul style="list-style-type: none"> - transmission over cross-border DC cable; - transmission over direct line; - imports (except for TSO); - termination of operations of a generating facility (over 1 MW). <p>Validity term of all licences – not limited.</p> <p>No imports from RU or other countries with market conditions other than in EE (for up to 1 year).</p>	<p>Validity term of most licences – 20 years, for trade/trading – 5 years.</p> <p>Permission required for:</p> <ul style="list-style-type: none"> - construction of new or increase of existing generation capacity; - power sales under the power purchase obligation 	<p>Licence required for:</p> <ul style="list-style-type: none"> - public supplier (2 regional DSOs); - market operator; - TSO; - DSO; - independent supplier. <p>Validity term of most licences – not limited.</p> <p>Permission required for:</p> <ul style="list-style-type: none"> - generation, for an undefined period of time; - development of generation capacity, for 3 years; - export, for an undefined period of time; - import, for an undefined period of time; - construction of a direct line, for 3 years
2.3. Tariffs for network services by TSO/DSO (connections, power transportation etc.)	<p>Tariffs paid by users</p> <p>Tariffs consist of 2 elements.</p> <p>Ex-ante regulation</p>	<p>Tariffs set for a 3-year (in the future, 5-year) period.</p> <p>Principle of equal treatment.</p>	<p>Tariffs set for an unspecified time period and may become effective in 4-5 months (calculations based on 1-year period).</p> <p>Tariffs consist of connected power and electricity consumption.</p>	<p>Price cap for network services is set for 3-year period by Regulator, for public supply – 1 year. Two-part components for energy and power applied.</p> <p>Yes, ex-ante regulation.</p>
2.4. Prices for balancing services provided by TSOs	<p>Single price for the entire national market</p>	<p>Price is calculated by TSO after the respective balancing / trading period (month) on the basis of real cost for every trading hour.</p> <p>Regulator has a controlling function (ex-post regulation).</p>	<p>Subsidised generators are included in the balancing area of the Public trader</p> <p>Price set by TSO three days before balancing period. Balancing settlement fee is charged by TSO.</p> <p>No regulation. Regulator supervises transparent process.</p>	<p>Hourly balancing price is defined. The combination of regulation power auction results and open balance supply prices sets price for the balancing electricity.</p> <p>Separate hourly balancing prices for generators and monthly balancing cost allocation mechanism for consumption are applied in Lithuania.</p> <p>Regulator sets the Methodology for the balancing energy price calculation.</p>

(cont.d) – Regulatory framework

2. Regulatory framework				
	Common features	Local Peculiarities/ Differences		
		Estonia	Latvia	Lithuania
2.5. Providing and pricing of transit services	<p>Negotiated prices between TSOs to compensate costs.</p> <p>Costs incurred by TSO as a result of hosting cross-border flows of electricity on their networks are settled among TSOs only (Market participants are not involved)</p> <p>All Baltic TSOs are ETSO ITC agreement parties.</p>		<p>The common transit mechanism is applied among Baltic countries, Belarus and Russia. The billing and accounting is based on bilateral agreements between TSOs.</p>	<p>The common transit mechanism is applied among Baltic countries, Belarus and Russia.</p> <p>The mechanism does not reflect the real transit cost allocation among TSOs because the calculation method is not based on real physical flow.</p> <p>The billing and accounting is based on bilateral agreements between TSOs.</p>
2.6. Predefined (regulated) sales prices for generators	<p>Energy Capacity</p>	<p>Set for the Narva plants for power sold to suppliers with sales obligation for captive customers. Other electricity and all other producers can sell on market terms.</p>	<p>Set for the power plants charged with the power purchase obligation.</p>	<p>The price cap for the dominating market players is applied.</p> <p>An internal power market participant who takes more than 25% of the electricity or reserve capacity market is regulated by the National Control Commission for Prices and Energy.</p> <p>Predefined prices for quoted cogeneration and RES are set by the National Control Commission for Prices and Energy. Quotation is under responsibility of Ministry of Economy.</p>
2.7. Congestion management between Baltic Countries	<p>EU congestion management rules not implemented, not agreed</p>			

Table 5-3 – Procedures

3. Procedures				
	Common features	Local Peculiarities/ Differences		
		Estonia	Latvia	Lithuania
3.1. Gate closure (cut-off time for submission to TSO of power balance data)		1h before	1h before	The day ahead (D-1) auction is organized in Lithuania. 13:00 is the gate closure of the auction. The adjustment of bilateral trade is allowed 2 hours before operating hour.
3.2. Balancing horizon		Hourly	Hourly	Hourly horizon for producers and monthly balancing cost allocation method is applied for consumers
3.3. Aggregation of imbalance [of individual consumers]		Yes	Yes	Aggregation of imbalances is not allowed between generation and consumption. Separate settlement for producers and consumers. The separate aggregated cost allocation of imbalances is applied for 3 distribution companies and eligible customers who are connected to high voltage grid.

Table 5-4 – Market Organisations

4. Market Organisations				
	Common features	Local Peculiarities/ Differences		
		Estonia	Latvia	Lithuania
4.1 Generals	<p>Bilateral trade market over Baltic on wholesale level Agreement on synchronous operation of the Baltic TSOs; cooperation in:</p> <ul style="list-style-type: none"> • system services; • 24h operations management; • planning; • common transit compensation mechanism; • relationship with neighbour TSOs (RU, BY) <p>Common interest in integration into the EU power systems</p>	<ul style="list-style-type: none"> ✓ 4 balance operators ✓ 50 independent generators; ✓ 40 independent DSOs account for ~15% of the market volume 	<ul style="list-style-type: none"> • Over 80 licences issued to various market participants; • TSO is only physical balance provider • End users can delegate traders to perform balance settlement with TSO and can pool together it's customers 	<p>20 independent suppliers 1 TSO 1 Market operator 3 public suppliers (7 – including local PS), 3 DSOs (7 – including local DSOs).</p> <p>The day ahead auction is organized in Lithuania. Generators with more than 5MWh of installed capacity must present the regulation power bids for TSO for regulation power auction. The regulation power auction takes place during the operation hour.</p>
4.2 Market transparency Market information	Limited market information in all Baltic countries	The market information (transfer capacities, generation, consumption, limitations, balancing prices, etc.) is available for everyone.	Transfer capacities and balancing prices available on TSO website.	<p>The market information is available only for market participants.</p> <p>Transfer capacities, generation, consumption and other related data are available on TSO website.</p>

Table 5-5 – Technical Characteristics

5. Technical Characteristics				
	Common features	Local Peculiarities/ Differences		
		Estonia	Latvia	Lithuania
5.1. Generals	<p>Existing interconnectors:</p> <ul style="list-style-type: none"> - to RU: eight 330kV and five 110kV; - to FI: DC cable; - to BY: five 330kV and eight 110kV. <p>Slow (>30 min) and very fast (<3 min) and effective system service provision power capacities in TPP, HPP, HPSPP.</p>	<p>Existing interconnectors:</p> <ul style="list-style-type: none"> - to LV: two 330kV and two 110kV; - to RU: three 330kV - to Finland: 350 kV HVDC cable: <p>Long time system service provision power capacities.</p>	<p>Existing interconnectors:</p> <ul style="list-style-type: none"> - to LT: four 330kV and three 110kV; - to EE: two 330kV and two 110kV; - to RU: one 330kV; - to BY: one 110kV. <p>Fast emergency power reserves (1600MW of HPP)</p>	<p>Existing interconnectors:</p> <ul style="list-style-type: none"> - to LV: four 330kV and three 110kV; - to BY: five 330kV and seven 110kV; - to RU: three 330kV and three 110kV. <p>Lithuanian power system has possibility to withhold fast reserve capacity of 900MW in Kruonio hydro pumped storage power plant and 1100MW of cold reserve in Lithuanian condensing power plant.</p>
5.2. Limitations	Limited transmission capacity between the Baltic and RU/BY grid.	No efficient capacity to balance the power produced from wind, therefore, the excess power to be sold to another system as balance power.	In some cases limited transfer capacity between EE and LV and LV western part and LT western part.	Of the transmission and distribution equipment, ~60% is 20+ years old and ~25% -- 30+ years old.
5.3. Plans/ priorities	<p>Synchronous work of the 3 TSOs as precondition for:</p> <ul style="list-style-type: none"> - security of supply, - operational security, - generation adequacy, - provision of conditions for power markets. 	<p>Estlink 2 – DC cable between Estonia and Finland</p> <p>To increase the capacity of the existing interconnector between EE and LV by 400 MW</p>	<p>To create 330kV transmission ring in western part of Latvia in order to improve security of supply, and to accommodate large amount of wind power and to create infrastructure for 400MW power plant as well to create the backbone for possible interconnections with EE and SE.</p> <p>To finalise a feasibility study of cable LV-SE.</p>	<p>Interconnection projects:</p> <ul style="list-style-type: none"> - line from Alytus (LT) to Elk (PL); - cable to SE; - integration into UCTE system of Lithuania and the rest of the BALTSO grid.

6 EXISTING MARKET BARRIERS

Starting from the Market Design concepts illustrated in chapter 3 and the present legal and regulatory framework, the Working Group EMI members identified the barriers hindering the creation of a regional power market among the three Baltic MS integrated with Nord Pool.

The barriers identified in the wholesale market can be summarised as follows:

1. *Regulated end-user tariffs* not giving incentives to eligible customers to change suppliers (with the exception of Latvia).
2. *High concentration and low liquidity in every single Baltic country.* The dominant market players can affect in a significant way the market price.
3. *Lack of reciprocity*, in particular: no full market opening in Estonia, no right to sell imported energy directly to customers in Lithuania.
4. *Exemption of TPA to the Estlink capacity* preventing the implicit auction towards Nordic market and the implementation price area Estlink
5. *Barriers for free cross-border transactions:* existing tariffs for cross-border transactions in Lithuania.
6. *No harmonisation of secondary legislation / principles of internal markets in the region.*
7. *No possibility to sell electricity freely to open market without losing state subsidies for their production*, provided subsidies are in conformity with the EU legislation.
8. *Lack of a common ITC mechanism between TSO's based on EU principles.*
The ITC is a mechanism adopted within the ETSO area to compensate TSO for power transits. The compensation procedure includes also contributions from non-EU countries if they use EU networks.
In the ITC regime the treatment of perimeter countries shall be harmonised. The settlement shall be based on scheduled import and scheduled export.
The same mechanism already adopted by the other EU Member States shall also be applied by the Baltic MS.
9. *Lack of agreed methods for cross-border capacity allocation and congestion management.*
Presently, there are not in place any agreed methods for cross-border capacity allocation and congestion management. More specifically, there aren't:
 - a common approach among the three Baltic MS;
 - a common position towards Russian and Belarus TSO's.
 A common position of Baltic Regulators and TSOs should be agreed, including non-EU countries. The EU Congestion Management Guidelines shall be introduced.
10. *Management of Loop Flows¹².*
Technical problems concerning loop flows and congestions among the Baltic countries, Russia and Belarus are very important and should be solved by TSOs.

¹² This problem is indeed more related to technical issues rather than the power market

The operational issues concerning physical flows (loop flows) in the Baltic MS and the neighbouring countries shall be addressed independently from the progress in the market opening.

11. *Insufficient implementation of transparency standards and establishment of information exchange.*

Transparency is required in legally binding Congestion Management Guidelines. To this purpose, EU regulators have worked out GGP (Guidelines of Good Practise) and regional transparency reports. These Guidelines and the transparency reports shall be adopted by all the Member States participating to the regional power market.

12. *Lack of a common position towards trade with third countries, namely non-EEA countries.*

13. *Lack of market surveillance and market monitoring mechanism.* There are no clear rules and common guidelines on how market monitoring and surveillance should be carried.

7 ROADMAP

The roadmap towards an integrated power market between the Baltic Member States and the Nordic Countries consists of as a stepwise process accompanying the progressive development of the power market in the Baltic area up to its full integration with Nord Pool. The following main steps have been identified and already agreed among WG EMI members ¹³:

1. Decision to start Baltic market integration - summer 2009
2. What must be completed by Day 1 - Q1 2010
3. How to continue the process - 1-3 years
4. Actions to finalize the market - 3-5 years

Some points shall be clarified in more detail during the implementation of the roadmap, namely the coupling of the Lithuanian Power Exchange with the Estlink price area, but the main actions have been agreed.

Step 1 - Decision to start Baltic market integration, - summer 2009

This step requires the endorsement by relevant authorities of political and business decisions:

Political decisions

- ✓ Approval by the Baltic Prime Ministers of the decision to start the Baltic electricity market integration on the basis of the indications forwarded by the HLG work on the Baltic Interconnection Plan and Baltic Market Design.
- ✓ Estonian and Lithuanian governments approve the decision to change legislation to abolish the regulated tariffs for eligible customers at wholesale market.

Business decisions

- ✓ Decision by Nord Pool Spot supported by Finnish and Estonian TSO to start NPS Baltic preparation for opening of Estlink price area. Latvian and Lithuanian TSOs will be invited as observers.
- ✓ Decision by Estlink Shareholders to change Capacity Purchase Agreement and Shareholders Agreement for implicit auction on condition of market opening by Day 1

Step 2 - What must be completed by Day 1 – fulfilment of market opening requirements (Q1 2010)

- ✓ Eligible customers buy power from market. Regulated tariffs have been removed for eligible customers (at least 35% of electricity consumption in each of the Baltic countries)
- ✓ Cross border restrictions (license, tariff) have been removed
- ✓ Subsidized renewable energy can enter the market without losing subsidies
- ✓ Separation of TSO activities/roles (clearly separating trading, import/export activities from the core activities of TSO)
- ✓ Basic transparency rules (Nord Pool Spot rules)
- ✓ Congestion management method between Estonia-Latvia-Lithuania and a common position towards Russian and Belarus TSO's
- ✓ Estonia, Latvia, Lithuania and Finland have a common ITC treatment of the perimeter countries.

¹³ The four steps illustrated in this chapter are the outcome of the Helsinki subgroup meeting held last 23rd February and successive iterations between the members of the EMI subgroup.

- ✓ Estonian, Latvian and Lithuanian markets are open for trade and participation to both power exchanges mentioned below
- ✓ Nord Pool Spot introduces price area Estlink.
- ✓ Update of Lithuanian day-ahead power exchange according to the Nord Pool Spot model, as a temporary solution.

Step 3 – How to continue the process - market functioning fine tuning (1-3 years)

- ✓ Baltic common day ahead market (based on Nord Pool Spot trading platform)
- ✓ Stepwise introduction of Intra-day market
- ✓ Market based congestion management, implicit auction between Baltic countries managed by NPS
- ✓ Estonia, Latvia, Lithuania and Finland have a common position and trading principles towards non EEA third countries
- ✓ Transparency according to the ERGEG's North European Electricity Regional Initiative
- ✓ Common reserves and balancing power market
- ✓ Harmonized imbalance settlement and imbalance pricing
- ✓ Common market monitoring and surveillance rules
- ✓ Development of financial markets (OTC)

Step 4 – Actions to finalize the market - Fully functioning market integrated with Nordic market

(3-5 years).

- ✓ Full opening of the retail market
- ✓ Common power exchange for physical trade in Nordic and Baltic area
- ✓ Market place for financial products
- ✓ Network tariff harmonization for generators¹⁴

It is worth mentioning that the main actions illustrated in the steps 1 and 2 of the roadmap have already been endorsed by the Prime Ministers of the Republics of Estonia, Latvia and Lithuania, who signed in Vilnius on 27th April 2009 a “*Joint Declaration*”. Coherently with the roadmap, the Prime Ministers have agreed (among other issues):

- ◆ to commit the removal, within the BEMIP framework by 2010, of regulated tariffs for Estonian, Latvian and Lithuanian consumers representing at least 35% of total countries’ electricity consumption to facilitate the Baltic market opening (point 1.a of the “*Joint Declaration*”);
- ◆ to remove barriers for electricity producers in Estonia, Latvia and Lithuania to sell their electricity freely to open market without losing state subsidies for their production, provided they are in conformity with the EU regulation (point 1.b)
- ◆ to commit to ensure that the tasks, procedure and activities of the electricity transmission system operators of Estonia, Latvia and Lithuania are independent as prescribed by the EU legislation (point 1.c);
- ◆ to support a gradual allocation of capacity of the Estlink-1 connection to Nord Pool Spot starting from 2010, as provided for in the BEMIP, which would speed up the integration with the Nordic market (point 2).

¹⁴ This action may be anticipated to step 3 of the roadmap.

8 REFERENCE DOCUMENTS

- [1] Directive 2003/54/EC of the European Parliament and of the Council of 26 June 2003 concerning "Common rules for the internal market in electricity" and repealing Directive 96/92/EC
- [2] Regulation (EC) No 1228/2003 of the European Parliament and of the Council of 26 June 2003 on "Conditions for access to the network for cross-border exchanges in electricity"
- [3] Commission Decision n° 2006/770/EC of 9 November 2006 amending the *Annex to Regulation (EC) No 1228/2003 on conditions for access to the network for cross-border exchanges in electricity*
- [4] Directive 2005/89/EC of the European Parliament and of the Council of 18 January 2006 concerning "Measures to safeguard security of electricity supply and infrastructure investment"
- [5] Nord Pool, <http://www.nordpoolspot.com/>, <http://www.nordpool.com/asa/>, "Rulebook for Nord Pool Spot's Physical Markets"
- [6] Letter from the KONKURENTSIAMET¹⁵ and EMV¹⁶ to the owners of the Estlink cable "The Electricity Market Integration between Estonia and the Nordic Market", 24th March 2009
- [7] "Joint Declaration of the Prime Ministers' Council of the Baltic Council of Ministers" signed by the Prime Ministers of the Republics of Estonia, Latvia and Lithuania in Vilnius on 27th April 2009

¹⁵ Estonian Competition Authority

¹⁶ Energy Market Authority (Finland)