

LitGRID

AS "Augstsprieguma tīkls"
Līguma reģistrācija Nr. AST/14-9
Reģistrēja I. Mūrniece I. Mūrniece
2014. gada 12. februārī

AST

Agreement on the Principles of Calculation and Allocation of the Cross-border Trading Capacity

between

LITGRID AB

and

AS "Augstsprieguma tīkls"

5 February 2014

LITGRID AB, a company incorporated and existing under the laws of the Republic of Lithuania, legal entity code 302564383, located at A. Juozapavičiaus g. 13, LT-09311, Vilnius, Republic of Lithuania (referred to as "**Litgrid**"), represented by Mr. Daivis Virbickas, CEO, acting in accordance with the Articles of Association and Mr. Rimantas Busila, Head of Finance Department, acting in accordance with procuracy issued on 31 October 2013,

and

AS "Augstsprieguma tīkls", a company incorporated and existing under the laws of the Republic of Latvia, legal entity code 40003575567, located at Dārziema street 86, Riga, LV-1073, Republic of Latvia (referred to as "**AST**"), represented by Mr. Varis Boks, Chairman of the Management Board, and Mr. Jānis Osītis, the Member of the Management Board, acting in accordance with the Articles of Association and the power of attorney No.50VL00-15\2 issued on 18 January 2012 by the Management Board,

Together further referred to as "**TSOs**" and each separately – "**TSO**",

Confirming commitment to cooperation as members of the European Network of Transmission System Operators for Electricity (ENTSO-E),

Considering the provisions of the Regulation No.714/2009 of the European Parliament and of the Council of 13 July 2013 on conditions for access to the network for cross-border exchanges in electricity and repealing Regulation No.1228/2003 which require TSOs agree on a common coordinated regional congestion management method and ensure that maximum cross-border transmission capacity, when reasonably available due to operational security and other technical conditions, is made available to the market,

Recognising the necessity to agree on common rules for available cross-border transmission capacity calculation method, taking into consideration the commonly agreed impact coefficients of trades to BRELL loop cross border flows,

Recognising the necessity to, facilitate effective operation of power market (day-ahead and intraday) in the framework of Nord Pool Spot AS (referred to as "**NPS**") operated power exchange,

Aiming the necessity to reach the trilateral agreement on cross-border trading capacity calculation and allocation between transmission system operators of the Republic of Estonia, the Republic of Latvia and the Republic of Lithuania,

By concluding this Agreement on the Principles of Calculation and Allocation of the Cross-border Trading Capacity (referred to as the "**Agreement**"), agree on the following:

1. TSOs shall perform trading capacity calculation on Lithuania-Latvia cross-border in accordance with the Cross-border trading capacity calculation rules between Lithuanian and Latvian power system (referred to as the "**Rules**"), which are annexed to this Agreement (Annex) and form an integral part thereof.
2. Bidding areas „Lithuania“ (LT) and „Latvia“ (LV) for trade shall be continued at NPS power exchange on day-ahead and intraday trading platform. All available transmission capacity for day-ahead and intraday trade on Lithuania-Latvia cross-border must be allocated through NPS.
3. The Rules are aimed to facilitate calculation and allocation of cross-border trading capacity in a transparent, coordinated and replicable manner.
4. TSOs shall submit the Agreement to the national regulatory authorities in accordance with Article 37(9) of Directive 2009/72/EC of the European Parliament and of the Council of 13 July 2009 and

Article 1.10 of Annex I of the Regulation (EC) No 714/2009 of the European Parliament and of the Council of 13 July 2009 in order to seek for acceptance of the Agreement by the National Regulatory Authorities. If any amendments of the Agreement and the Rules shall be required under request of the National Regulatory Authority, such amendment shall be discussed and agreed by TSOs without any unreasonable delay.

5. The TSOs confirm their intention to closely co-operate, including, exchanging the required information, in order to implement this Agreement. Each TSO shall reply on questions, proposals and comments submitted by the other TSO regarding this Agreement (including the Rules) or other related planning or operational document without delay but not later than within 2 (two) weeks.

6. The TSOs shall make their best efforts to agree on the common Baltic countries (the Republic of Estonia, the Republic of Latvia and the Republic of Lithuania) cross-border capacity calculation and allocation rules as the final goal in respect of common principles and procedures for cross-border trading capacity calculation and allocation.

7. The Agreement can be amended only by a written agreement of both TSOs, signed by duly authorized representatives.

8. Any public announcements regarding this Agreement shall be agreed and coordinated between the TSOs in advance.

9. Agreement (including the Rules) shall come into force on 10 February 2014 after it is signed by duly authorized representatives of TSOs. This Agreement (including the Rules) shall be effective until 31 December 2014. In the event neither of the TSOs gives a written notice of termination of the Agreement at least 90 (ninety) calendar days prior to the end of its validity term, such term shall be deemed to be extended for each next 12 (twelve) months period on the terms and conditions stated herein.


10. The Agreement (including the Rules) shall be terminated on the date the common Baltic countries (the Republic of Estonia, the Republic of Latvia and the Republic of Lithuania) cross-border capacity calculation and allocation rules enter into force following the agreement of the Baltic States transmission system operators.

11. A notice about the planned cancellation of the validity of the Rules shall be given to the market players at least 10 (ten) calendar days before the end of the validity of the Agreement (including the Rules).


12. Agreement is prepared in English in 2 (two) original copies of equal legal power, one for each TSO.

13. Signatures:

LITGRID AB



Dāvis Virbickas,
CEO



Rimantas Busila,
Head of Finance Department

AS "Augstsprieguma tīkls"




Varis Boks,
Chairman of the Management Board



Jānis Osītis,
Member of the Management Board

AS "Augstsprieguma tīkls"
Režīmu un plānošanas dienesta
vadītājs

Jevgenijs Mežinskis

AS "Augstsprieguma tīkls"
Iepirkumu un juridiskā padrošinājuma daļa
Juriskonsults

Laura Medvida
18.02.2014

AS "Augstsprieguma tīkls"
Finanšu daļas vadītāja

Māra Grava
18.02.2014



**CROSS-BORDER
TRADING CAPACITY CALCULATION RULES BETWEEN LITHUANIAN AND LATVIAN POWER SYSTEMS**

between

LITGRID AB

and

AS "Augstsprieguma tīkls"

1. INTRODUCTION

The electricity transmission system operators of the Republic of Latvia – AS “Augstsprieguma tīkls” and the Republic of Lithuania – LITGRID AB (the “TSOs”),

Have agreed on mutual application of the Cross-border trading capacity calculation rules between Lithuanian and Latvian power systems (the “Rules”) under the following terms and conditions:

2. DEFINITIONS

2.1. For the purposes of these Rules, the following terms shall have the following meaning:

2.1.1. **TSO (TSOs)** – shall mean the transmission system operator (or operators) for electricity of the Republic of Latvia and the Republic of Lithuania, unless otherwise expressly provided.

2.1.2. **Baltic States** – shall mean the Republic of Estonia, the Republic of Latvia, and the Republic of Lithuania.

2.1.3. **Baltic TSOs** – shall mean the transmission system operators for electricity of the Republic of Estonia, the Republic of Latvia, and the Republic of Lithuania.

2.1.4. **3rd Countries** – shall mean the Russian Federation, the Republic of Belarus, and the Republic of Ukraine.

2.1.5. **BRELL Loop** – shall mean transmission networks of the power systems of the Baltic States, the Republic of Belarus and the Russian Federation (Central and North-Western parts).

2.1.6. **NPS** – shall mean Nord Pool Spot AS, the operator of day-ahead (Elspot) and intraday (Elbas) electricity markets of the Baltic States.

2.1.7. **Elspot** – shall mean the day-ahead market for trading power operated by NPS.

2.1.8. **Elbas** – shall mean the intraday market for trading power operated by NPS.

2.1.9. **Individual Grid Model** – shall mean data set prepared by responsible TSO, to be merged with other Individual Grid Model components through the European Merging Function in order to create Common Grid Model.

2.1.10. **N-1 Criterion** – shall mean the rule according to which elements remaining in operation within TSO’s Responsibility Area after a Contingency from the Contingency List must be capable of accommodating the new operational situation without violating Operational Security Limits.

2.1.11. **Contingency List** – shall mean the list of Contingencies to be simulated in the Contingency Analysis in order to test the compliance with the Operational Security Limits before or after a Contingency took place.

2.1.12. **Operational Security Limits** – shall mean the acceptable operating boundaries: thermal limits, voltage limits, short-circuit current limits, frequency and Dynamic Stability limits.

2.1.13. **TTC** – shall mean the Total Transfer Capacity of the designated cross-border interconnections, which is the maximum transmission of active power in accordance with the system security criteria which is permitted in transmission the cross-border interconnections between the areas.

2.1.14. **TRM** – shall mean the Transmission Reliability Margin of the designated cross-border interconnections and is the gap between the TTC and the trading capacity. TRM is maintained due to uncertainties in planned hourly power transmission values and helps to ensure power system operational security.

2.1.15. **NTC** – shall mean the Net Transfer Capacity of the designated cross-border interconnections, which is the maximum possible total exchange value between two adjacent control areas compatible with operational security standards applicable in all control areas of

the synchronous area, and taking into account the technical uncertainties on future network conditions.

2.1.15. **ATC** – shall mean the Available Transmission Capacity of the designated cross-border interconnections, which is the part of NTC that remains available to the market after each phase of the transmission capacity allocation procedure.

3. OBJECTIVE AND MAIN PRINCIPLES

3.1. The Rules shall facilitate the achievement of the following objectives:

- a) Ensuring operational security of the interconnected power systems;
- b) Ensuring that maximum cross-border transmission capacity between the power systems of the Republic of Lithuania and the Republic of Latvia, when reasonably available due to operational security and other technical conditions, is made available to the market;
- c) Producing results of coordinated activities of TSOs in a transparent and replicable manner;
- d) Ensuring non-discrimination in calculation of internal cross-border trading capacities between the power systems of the Republic of Lithuania and the Republic of Latvia.

3.2. The Rules shall be applied by TSOs while calculating and determining the cross-border trading capacities for different operational planning periods (*i.e.* annual, monthly, weekly, day-ahead and intraday).

3.3. The time used in this document is Baltic time.

4. TOTAL TRANSFER CAPACITY CALCULATION

4.1. The TTC between two integrated power systems is determined following methodological principles established in the “Stability Methodology Guidelines for BRELL Loop 2005”, as well as in national regulations and standards implemented and agreed in the instruction for parallel operation in the cross-border interconnections between TSOs involved, while taking into account the intersystem operation stability, planned outages and dimensioning faults in the network.

4.2. The TTC value of cross-border intersection is checked during operations planning phase against operational security constraints on those individual 330kV power transmission objects within area of responsibility of TSO, affecting cross-border intersection flows. Operational security constraints are based at least on thermal capability and stability criterions. BRELL instruction based cross-border TTC is modified by TSOs whenever technically justified, for ensuring the collective secure operation with neighbouring interconnected TSOs.

4.3. TSOs shall use for TTC calculations the common grid model of the BRELL Loop compiled based on the data exchange format as agreed commonly in BRELL as well as specifications to be set out in the Data Exchange Rules agreed among Baltic TSOs. Upon coming in force of ENTSO-E Network Code on Capacity Allocation and Congestion Management as well as various other ENTSO-E network codes, the Common Grid Model Exchange Standard (CGMES) will be also used as baseline for data exchange of Individual Grid Models among Baltic TSOs.

4.4. If neighbouring TSOs determine different TTC values for the same cross-border interconnection, the lowest value shall be used as a coordinated value.

4.5. TSOs shall inform each other about planned TTC values according to the Data Exchange Rules agreed among Baltic TSOs.

5. TRANSMISSION RELIABILITY MARGIN CALCULATION

5.1. The TRM is a capacity margin needed for secure operation of interconnected power systems considering the following factors:

- a) Unintended deviations of physical flows during operations due to physical functioning of load-frequency regulation;
- b) Emergency exchanges between TSOs to cope with unexpected unbalanced situations in real time;
- c) Inaccuracies, e.g. in data collection and measurements;
- d) Planning errors, including the errors due to imperfect information from 3rd Countries at the time the transfer capacities have been computed.

5.2. As a rule TSOs use only information indicated in paragraph d) of clause 5.1 for TRM evaluation. Assessment of TRM shall integrate a statistical analysis of historic data showing the deviation of power flows and shall take into account expectation of future deviations.

5.3. Each TSO shall define the size of the TRM on its cross-border interconnections.

5.4. TSOs shall inform each other about planned TRM values according to the Data Exchange Rules agreed among Baltic TSOs.

6. NET TRANSFER CAPACITY CALCULATION

6.1. LITGRID AB and AS "Augstsprieguma tīkls" calculate NTC values for Lithuania-Latvia cross-border interconnection, taking into account guaranteed emergency power reserves for TSOs to ensure readiness for normal operation within 15 min. after N-1 situation has occurred, by using following formula:

$$NTC = (TTC_1 + \sum K * P) - TRM,$$

where:

$$(TTC_1 + \sum K * P) \leq TTC;$$

TTC₁ – total transmission capacity after N-1 situation has occurred from actual power system network status according to mutually signed instruction for parallel operation in the cross-border respective interconnection;

P – amount of guaranteed emergency power reserves in respective power system;

K – reserve power distribution coefficients considering location of the guaranteed emergency power reserve and down regulation according to Annex 1;

TTC – total transmission capacity in actual power system network status according to mutually signed instructions for parallel operation in the cross - border interconnections;

TRM – agreed TRM value between the TSOs.

6.2. If TSOs determine different NTC values for the same cross-border interconnection, the lowest value shall be used.

6.3. Coordination and publishing cross-border capacities for NPS is described in the Data Exchange Rules agreed among Baltic TSOs.

6.4. NTC values can be used for day-ahead and other trades.

7. INTRADAY (ELBAS) TRANSMISSION CAPACITY CALCULATION

7.1. After receiving Elspot trading results from NPS and actual D-1 data from Russian system operator (SO), Latvian and Lithuanian TSO shall update power flow model and recalculate power flows in BRELL Loop.

7.2. TSOs until 14:40 shall coordinate intraday ATC value and until 15:00 responsible TSO (TSO responsible for publication of cross-border capacities) shall send coordinated intraday ATC values to NPS.

7.3. In case D-1 data from Russian SO is not available, TSOs shall set intraday ATC values to 0 MW. New intraday ATC values shall be coordinated as soon as D-1 data from Russian SO is available. In case D-1 data from Russian SO is not available before 18:00, TSOs shall coordinate intraday ATC values taking into account D-2 data from Russian SO. Responsible TSOs shall send the coordinated intraday ATC values to NPS as soon as possible.

7.4. Coordination and publishing intraday ATC values for the next day is described in the Data Exchange Rules agreed among Baltic TSOs.

7.5. Litgrid AB and AS "Augstsprieguma tīkls" calculate intraday ATC values for Lithuania-Latvia cross-border interconnection as follows:

$$ATC = \text{MIN}(NTC - P_{PF}; NTC - AAC_{\text{Elspot}} + TRM)$$

where:

NTC – maximum trading capacity in the particular cross-border interconnections;

P_{PF} – calculated power flow in the particular cross-border interconnections based on Elspot trading data and actual D-1 data from Russian TSO;

AAC_{Elspot} – already allocated capacity or total amount of all allocated trading capacity after Elspot trading;

TRM – agreed TRM value between the TSOs.

7.6. In case TSOs determine different intraday ATC values for the same cross-border intersections the lowest value shall be used.

7.7. For ensuring operational security intraday ATC values shall be reassessed during the operational stage considering all the changes in BRELL Loop (line disconnection or generator trip) that have influence on the intraday transmission capacities.

8. FINAL PROVISIONS

8.1. These Rules shall be understood as an integral part of the Agreement on the Principles of Calculation and Allocation of the Cross-border Trading Capacity, concluded between the TSOs.

Annex 1
 To the Cross-border Trading Capacity Calculation
 Rules between Lithuanian and Latvian Power Systems

Reserve power distribution coefficients

Down regulation, %	Cross-Border interconnections	Reserves location			
		Lithuania	Latvia	Belarus	Estonia
100	Latvia→Lithuania	0,88		0,72	
	Lithuania→ Latvia		0,88		0,62
50	Latvia→Lithuania	0,61		0,44	
	Lithuania→ Latvia		0,72		0,46
0	Latvia→Lithuania	0,34		0,16	
	Lithuania→ Latvia		0,55		0,29