

**Terms, Conditions and Methodology on
Cross-Zonal Capacity Calculation, Provision and Allocation with the 3rd Countries**

Among:

**AS “Augstsprieguma tīkls”
Elering AS
LITGRID AB**

**December 13th, 2018
Vilnius, Riga, Tallinn**

CONTENTS

1. General Terms.....	3
2. Definitions.....	3
3. Total Transfer Capacity (TTC) Calculation Methodology.....	6
4. NET Transmission Capacity Calculation for Cross-Border Interconnection Estonia-Russia ...	7
5. NET Transmission Capacity Calculation for Cross-Border Interconnection Lithuania-Belarus	7
6. NET Transmission Capacity Calculation Rules with the 3 rd Countries.....	8
7. NET Transmission Calculation Rules Between Lithuanian and Russian (Kaliningrad area) Power Systems.....	11
8. Capacity calculation fallback procedure.....	12
9. Provision and allocation of Trading Capacity with the 3 rd Countries.....	13
10. Firmness.....	14

1. GENERAL TERMS

- 1.1. The Terms, Conditions and the Methodology on Cross-Zonal Capacity Calculation, Provision and Allocation with the 3rd Countries (hereinafter referred to as “the Methodology”) are set to define:
 - 1.1.1. Cross-Zonal Capacity calculation, provision and allocation rules between Baltic States and 3rd Countries;
 - 1.1.2. Cross-Zonal Capacity calculation, provision and allocation rules between Lithuania power system and Russia (Kaliningrad area).
- 1.2. Cross-Zonal Capacities with the 3rd Countries shall be calculated using the coordinated Net Transmission Capacity approach in a way that facilitates the achievement of the following objectives:
 - 1.2.1. Ensuring Operational Security of the interconnected power systems;
 - 1.2.2. Producing results in a transparent and replicable manner;
 - 1.2.3. Ensuring non-discrimination in calculation Cross-Zonal Capacities with the 3rd Countries;
 - 1.2.4. Ensuring that Cross-Zonal Capacities with the 3rd Countries in day-ahead electricity market of the Baltic States are provided and allocated in a most optimal and reasonable manner.
- 1.3. The time used in this document is Eastern European Time (EET) during winter and Eastern European Summer Time (EEST) during summer unless stated otherwise.
- 1.4. Capacity calculation with the 3rd Countries shall be performed by the Capacity Calculator.
- 1.5. The Methodology cover Cross-Zonal Capacity calculation for year, month and week ahead time horizons as well as Cross-Zonal Capacity calculation, provision and allocation for day-ahead time horizons.
- 1.6. Trading capacity calculation rules with 3rd countries described in current methodology shall be valid until Belorussian nuclear power plant becomes operational. In case abovementioned event occurs the trading capacity with 3rd countries set by current methodology at Lithuanian-Belorussian border shall be equal to zero for all capacity calculation timeframes in accordance with Lithuanian national legislation. Baltic TSOs in cooperation with Baltic NRA's shall evaluate the need for development of new trading capacity calculation rules with 3rd countries (including Kaliningrad region) inter alia to ensure continuous coordination between Baltic TSOs in matters related to determination of trading capacity with 3rd countries.

2. DEFINITIONS

For the purposes of this Methodology, the following definitions shall have the following meaning:

- 2.1. **3rd Countries** – the Republic of Belarus and Russian Federation.
- 2.2. **AST** – AS “Augstsprieguma tīkls”, Independent Transmission System Operator of the Republic of Latvia.

- 2.3. **Baltic States** – the Republic of Estonia, the Republic of Latvia, and the Republic of Lithuania.
- 2.4. **Baltic CCR**- Baltic capacity calculation region.
- 2.5. **Baltic TSOs** – the transmission system operators for electricity of the Republic of Estonia, the Republic of Latvia and the Republic of Lithuania.
- 2.6. **Bidding Zone** – the largest geographical area (zone) within which market participants are able to exchange energy without capacity allocation.
- 2.7. **BRELL TSOs** –TSOs operating in BRELL Loop.
- 2.8. **BRELL agreement** – the document, signed among Belarusian, Russian, Estonian, Latvian and Lithuanian system operators and network owners, which defines main rules and principles for synchronous operation of the Belorussian, Russian, Estonian, Latvian and Lithuanian (or BRELL Loop) power systems.
- 2.9. **Rules on planning of electric energy and power exchange in the BRELL Loop** – the document, approved among Belarusian, Russian, Estonian, Latvian and Lithuanian system operators, which defines annual, monthly, two days ahead, day ahead planning data extent and exchange procedure among BRELL TSOs.
- 2.10. **Instruction for parallel operation in the cross border interconnection (BRELL)** – the document approved among Belarusian, Russian, Estonian, Latvian and Lithuanian system operators that defines parallel power systems operation conditions in the Cross-Border Interconnection. It includes interconnection description, interconnection transfer capacities, interconnection normal and emergency state operations and system protection description.
- 2.11. **Methodical guidelines for stable operation in BRELL Power Loop** – the document, approved among Belarusian, Russian, Estonian, Latvian and Lithuanian system operators, which defines main system stability requirements to be taken into account by calculation of TTC in all BRELL Loop interconnections.
- 2.12. **BRELL Loop** – transmission networks of the power systems of the Baltic States, the Republic of Belarus and the Russian Federation (Central and North-Western parts).
- 2.13. **Capacity allocation** – the attribution of Cross-Zonal Capacity.
- 2.14. **Capacity Calculator**- Coordinated Capacity Calculator of Baltic Capacity Calculation Region or by Baltic TSO's assigned TSO responsible for calculation of Trading Capacity with 3rd Countries.
- 2.15. **Cross-Border Interconnection** – is a physical transmission link (e.g. tie-lines) which connects two power systems.
- 2.16. **Cross-Zonal Capacity** – the capability of the interconnected system to accommodate energy transfer between Bidding Zones. Whenever the Cross-Zonal Capacity is named as Lithuania-Russia (Kaliningrad area), Lithuania-Belarus, Estonia-Russia, it means both directions to and from unless specifically indicated particular direction.
- 2.17. **Day-Ahead Firmness Deadline** – the point in time after which Cross-Zonal Capacity becomes firm.
- 2.18. **Common Grid Model** – data set agreed between BRELL TSOs describing the main characteristic of the power system (generation, loads and grid topology) and rules for changing these characteristics during the capacity calculation process.

- 2.19. **Contingency Analysis** – a computer based simulation of contingencies.
- 2.20. **D-1** – the day prior to the day on which the energy is delivered.
- 2.21. **D-2** – the day before the day prior to the day on which the energy is delivered.
- 2.22. **Data Exchange Rules** – the Baltic TSOs' agreement on mutual application of common operational planning and terms and conditions for data exchange procedures.
- 2.23. **Day-Ahead Market** – the market timeframe where commercial electricity transactions are executed the day prior to the day of delivery of traded products.
- 2.24. **Elering** – Elering AS, Transmission System Operator of the Republic of Estonia.
- 2.25. **Force Majeure** – any unforeseeable or unusual event or situation beyond the reasonable control of a TSO, and not due to a fault of the TSO, which cannot be avoided or overcome with reasonable foresight and diligence, which cannot be solved by measures which are from a technical, financial or economic point of view reasonably possible for the TSO, which has actually happened and is objectively verifiable, and which makes it impossible for the TSO to fulfil, temporarily or permanently, its obligations in accordance with CACM and/or these Methodology.
- 2.26. **Firmness** – a guarantee that Cross-Zonal Capacity rights will remain unchanged and that compensation is paid if they are nevertheless changed.
- 2.27. **Litgrid** – LITGRID AB, electricity transmission system operator of the Republic of Lithuania.
- 2.28. **N-1 Situation** – the situation in the transmission system in which a single contingency has happened.
- 2.29. **Market Operator (MO)** – the operator of day-ahead and intraday electricity markets in the Baltic States.
- 2.30. **NTC** – Net Transmission Capacity of the designated Cross-Border Interconnections is the maximum Trading Capacity, which is permitted in transmission Cross-Border Interconnections compatible with Operational Security standards and taking into account the technical uncertainties on planned network conditions for each TSO.
- 2.31. **Operational Security Limits** – the acceptable operating boundaries: thermal limits, voltage limits, frequency, dynamic and steady state stability limits.
- 2.32. **Operational Security** – the transmission system capability to retain a normal state or to return to a normal state as soon and as close as possible, and is characterised by thermal limits, voltage constraints, short-circuit current, frequency limits and stability limits.
- 2.33. **Remedial Actions** – any measure applied by a TSO or several TSOs, manually or automatically, in order to maintain Operational Security.
- 2.34. **Russia (Kaliningrad area)** – a part of the Russian power system located in the Kaliningrad region.
- 2.35. **Shift Key** – means a method of translating a net position change of a given power system into estimated specific injection increases or decreases in the Common Grid Model. Shift Key is settled as generation, renewable generation and load.
- 2.36. **TRM** – Transmission Reliability Margin which shall mean the reduction of Cross-Zonal Capacity to cover the uncertainties within capacity calculation.

- 2.37. **TSO** – a transmission system operator for electricity.
- 2.38. **TTC** – Total Transfer Capacity of the designated Cross-Border Interconnections is the maximum transmission of active power, which is permitted in transmission Cross-Border Interconnections compatible with Operational Security standards applicable for each TSO.
- 2.39. **Trading Capacity with 3rd Countries** – the total trading capacity with 3rd Countries (excluding Kaliningrad area) and Baltic States which is compatible with Operational Security standards and take into account the technical uncertainties on planned network conditions for each TSO of the synchronous area.
- 2.40. **Trading Capacity with Russia (Kaliningrad area)** – the trading capacity with 3rd Countries including only Russia Kaliningrad area and Lithuania power system is compatible with Operational Security standards and take into account the technical uncertainties on planned network conditions for respective TSO's.

3. **TOTAL TRANSFER CAPACITY (TTC) CALCULATION METHODOLOGY**

- 3.1. The TTC calculation methodology shall be applied for following Cross-Border Interconnections: Lithuania-Kaliningrad; Lithuania-Belarus; Estonia-Russia.
- 3.2. The Cross-Border Interconnection TTC assessment shall follow the methodological principles in the Methodical guidelines for stable operation in BRELL Loop, 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 intra- and intersystem Operational Security.
- 3.3. Methodical guidelines for stable operation in BRELL Loop is used as a basis and reviewed by TSOs, for ensuring the collective secure operation with neighboring interconnected TSOs.
- 3.4. The Cross-Border Interconnection TTC shall be determined by proceeding N-1 Contingency Analysis with respect of Operational Security Limits of BRELL Loop and Control Area of Baltic TSOs.
- 3.5. The cross-border TTC calculation shall be carried out by using as input the following mutually coordinated data and information:
 - 3.5.1. Base case - Common Grid Model, which includes power transmission equipment model of BRELL Loop and scenario describing net positions for each of Control Area of Baltic TSOs and Russian/Belorussian power systems, valid for given calculation purposes;
 - 3.5.2. Generation, renewable generation and load Shift Key;
 - 3.5.3. Critical Network Elements;
 - 3.5.4. Outage cases;
 - 3.5.5. Contingency List;
- 3.6. Determining the TTC values, TSOs and Capacity Calculator can take into account ambient temperatures for different seasonal periods to provide Operational Security.
- 3.7. If neighbouring TSOs determine different TTC values for the same Cross-Border Interconnection, the lowest value shall be used as a coordinated value.

3.8. Generation and load Shift Key

- 3.8.1. Proportional generation Shift Key strategy shall be normally applied. However shifting strategy per power system area shall be the responsibility of each involved TSO, which has to be communicated with other TSOs and Capacity calculator before commencing TTC calculation process in case of deviation from proportional generation Shift Key strategy. The TSOs shall exchange Shift Keys for generation and renewable generation and also provide it to Capacity Calculator.
- 3.8.2. Capacity Calculator and TSOs shall apply load Shift Key whenever the generation Shift Key shall not be sufficient for determination of TTC.

3.9. Remedial actions

- 3.9.1. TSOs shall to exchange with each other and provide to Capacity Calculator information on available and applicable remedial actions that shall be used in capacity calculation process, e.g. information on available emergency power reserves and available balancing reserves.

4. NET TRANSMISSION CAPACITY CALCULATION FOR CROSS-BORDER INTERCONNECTION ESTONIA-RUSSIA

- 4.1. Capacity of Estonia-Russia Cross-Border Interconnection used for capacity calculation from the 3rd Countries to the Baltic States is determined by following formula:

$$NTC_{EE-RU} = TTC_{EE-RU} - TRM \quad (1)$$

where:

NTC_{EE-RU} – Net Transmission Capacity of Estonia-Russia Cross-Border Interconnection;

TTC_{EE-RU} – Total Transfer Capacity of the Estonia-Russia Cross-Border Interconnection in the Estonia direction according Instruction for parallel operation in the cross border interconnection BRELL;

TRM – Transmission Reliability Margin in Cross-Border Interconnection.

5. NET TRANSMISSION CAPACITY CALCULATION FOR CROSS-BORDER INTERCONNECTION LITHUANIA-BELARUS

- 5.1. Capacity of Lithuania-Belarus Cross-Border Interconnection used for Net Transmission Capacity Calculation with the 3rd Countries is determined by following formula:

$$NTC_{BY-LT} = TTC_{BY-LT} - TRM \quad (2)$$

where:

NTC_{BY-LT} – Net Transmission Capacity of Lithuania-Belarus Cross-Border Interconnection, in respective direction;

TTC_{BY-LT} – Total Transfer Capacity of the Lithuania-Belarus Cross-Border Interconnection in respective direction according Instruction for parallel operation in the cross border interconnection BRELL;

TRM – Transmission Reliability Margin in Cross-Border Interconnection.

6. TRADING CAPACITY CALCULATION RULES WITH THE 3RD COUNTRIES

- 6.1. Trading Capacity from 3rd Countries is determined by modelling of physical power flows within the BRELL Loop by taking into account NTCs of following Cross-Border Interconnections: Lithuania-Belarus; Russia-Estonia; Estonia-Latvia plus Russia-Latvia; Lithuania-Latvia. NTCs of Cross-Border Interconnections of Estonia-Latvia plus Russia-Latvia and Lithuania-Latvia shall be calculated according methodology for Baltic CCR.
- 6.2. Modelling of physical power flows performed by using Common Grid Model. The Common Grid Model is formed based on Rules on planning of electric energy and power exchange in the BRELL Loop as well as on requirements of ENTSO/E Common Grid Model Exchange Standard.
- 6.3. Annual Trading Capacity calculation with 3rd Countries shall be performed by Capacity Calculator based on annual planning data according to Rules on planning of electric energy and power exchange in the BRELL Loop and Baltic TSOs Data Exchange Rules. For Trading Capacity calculation from 3rd Countries one BRELL Loop powers systems balance scenario per month for working day peak hour shall be used. While performing Annual Trading Capacity calculation with 3rd Countries Estonian balance shall be set equal to NTC of Estonia-Latvia plus Russia-Latvia Cross-Border Interconnection.
- 6.4. Monthly Trading Capacity calculation with 3rd Countries shall be performed by Capacity Calculator based on monthly planning data according to Rules on planning of electric energy and power exchange in the BRELL Loop and Baltic TSOs Data Exchange Rules. For Trading Capacity calculation from 3rd Countries two BRELL Loop power systems balance scenarios per week one for day peak hour of working day (Wednesday) and one for Sunday daily peak hour shall be used. While performing Monthly Trading Capacity calculation with 3rd Countries Estonian balance shall be set equal to NTC of Estonia-Latvia plus Russia-Latvia Cross-Border Interconnection.
- 6.5. Weekly Trading Capacity calculation with 3rd Countries shall be performed by Capacity Calculator based on monthly planning data according to Rules on planning of electric energy and power exchange in the BRELL Loop. For Trading Capacity calculation from 3rd Countries one BRELL Loop power systems balance scenario per day for peak hour shall be used. While performing Weekly Trading Capacity calculation with 3rd Countries Estonian balance shall be set equal to NTC of Estonia-Latvia plus Russia-Latvia Cross-Border Interconnection.
- 6.6. Day ahead Trading Capacity calculation from 3rd Countries shall be performed by the Capacity Calculator based on two day ahead planning data according to Rules on planning of electric energy and power exchange in the BRELL Loop and planning data provided by Baltic TSOs as the best estimated scenario for the next day. As a rule for the best estimated scenario data according to Table 3 of these Methodology shall be used. While performing Day ahead Trading Capacity calculation with 3rd Countries Estonian balance shall be defined according following principles:

Table 3

Power system	Monday (working day)	Tuesday-Friday (working days)	Saturday	Sunday	Public holidays
--------------	----------------------	-------------------------------	----------	--------	-----------------

Lithuania, Latvia Estonia	Last Friday's balance plan	Yesterday's balance plan	Last Saturday's balance plan	Yesterday's balance plan	Last Sunday's or the closest last public holiday's balance plan
Russia*	D-2 balance plans	D-2 balance plan	D-2 balance plan	D-2 balance plan	D-2 balance plan
Belarus*	D-2 balance plans	D-2 balance plan	D-2 balance plan	D-2 balance plan	D-2 balance plan

*- *If due to time differences for the last hours in D-2 balance plans from Russia and Belarus weren't provided then missing hours for D-2 balance plans for Russia and Belarus shall be equal to the last provided hour.

- 6.6.1. if Estonian balance according to the Table 3 of these Methodology exceeds NTC of the Estonia-Latvia plus Russia-Latvia Cross-Border interconnection, the Estonian balance will be reduced in the power flows calculations down to the NTC of Estonia-Latvia plus Russia-Latvia Cross-Border Interconnection;
- 6.6.2. if Estonian balance according to the Table 3 of these Methodology is less than $k \cdot NTC_{EE-LV}$, (where: k – coefficient showing average of hourly Net Transmission Capacity utilization for the last 12 months; NTC_{EE-LV} - NTC of the Estonia-Latvia plus Russia-Latvia Cross-Border Interconnection) the Estonian balance will be set to $k \cdot NTC_{EE-LV}$. Coefficient k is calculated according to the following formula:

$$k = \frac{\sum F_{comm}}{\sum NTC} \quad (3)$$

Where:

$\sum F_{comm}$ – sum of commercial flows on Estonia-Latvia plus Russia-Latvia Cross-Border Interconnection in direction from Estonia to Latvia for the last 12 months;

$\sum NTC$ – sum of NTC values on Estonia-Latvia plus Russia-Latvia Cross-Border Interconnection in direction from Estonia to Latvia for the last 12 months;

Coefficient showing average of hourly Net Transmission Capacity utilization calculated according formula 3 of these Rules shall be calculated once per month till 28th calendar day of each coming month.

- 6.7. Trading Capacity from 3rd Countries for all planning periods shall be calculated based on following principles:
- 6.7.1. if upon completion of the initial calculation, physical power flows do not exceed the Cross-Border Interconnection NTC values established in Article 6.1 of these Methodology, the Trading Capacity from 3rd Countries will be determined by increasing generation by swing generator in the Russian power system and by reducing generation in Lithuania and Latvia power systems according to the coefficient, which is calculated by the generation Shift Key formula:

$$K_{(i)} = \frac{P_{load(i)} - P_{gen(i)}}{\sum_{i=n}^1 \left(P_{load(i)} - P_{gen(i)} \right)} \quad (4)$$

9

where:

$K_{(i)}$ – i power system generation reduction coefficient;

$P_{load(i)}$ – i power system demand;

$P_{gen(i)}$ – i power system generation;

i –Baltic power system (Latvia or Lithuania);

If Latvian or Lithuanian power system is in surplus ($P_{gen(i)} > P_{load(i)}$) or according formula 4 Latvian power system generation Shift Key is less than $K_{infrast}$ (proportion coefficient based on existing infrastructure with 3rd Countries $K_{infrast} = 1/3TTC_{EE-LV-RU} / (1/3TTC_{EE-LV-RU} + TTC_{LT-BY}) = 0,15$), then deficit coefficients for Latvian power system shall be $K_{LV} = 0,15$ and for Lithuanian power system $K_{LT} = 0,85$.

- 6.7.2. If upon completion of the initial calculation, physical power flows exceed the Cross-Border Interconnection NTC values established in Article 6.1 of these Methodology, the Trading Capacity from 3rd Countries will be determined by decreasing generation in swing generator in the Russian power system and by increasing generation in deficit Baltic power systems (Lithuania and Latvia) according to the coefficient, calculated according to the formula 4 of these Methodology.
- 6.8. Calculations according to the requirements laid down in Article 6.7.1 or Article 6.7.2 of these Methodology are completed, when one of the interconnection capacities NTC limits specified in article 6.1 of these Methodology is reached and none exceed the aforementioned limits. Trading Capacity from 3rd Countries is calculated by the following formula:

$$P_{3rd\ Countries} = \text{MIN}((NET_{intEE} + NET_{intLV} + NET_{intLT} + NET_{intKAL}); NTC_{BY-LT}) \quad (5)$$

where:

$P_{3rd\ Countries}$ – Trading Capacity from 3rd Countries;

Net_{intEE} – Estonian energy system balance according to calculation results together with ESTLINK 1 and ESTLINK 2;

Net_{intLV} – Latvian energy system balance according to the calculation results;

Net_{intLT} – Lithuanian energy system balance with NORDBALT and LITPOL Link according to the calculation results;

Net_{intKAL} – Kaliningrad balance according planning data. If Kaliningrad is in deficit, Net_{intKAL} shall be set to 0 MW;

Balance values in formula 5 of these Methodology are negative, when power system is in surplus, and values are positive, when the power system is in deficit;

NTC_{BY-LT} – Net Transmission Capacity of Lithuania-Belarus Cross-Border Interconnection, in direction to Lithuania according formula 2.

- 6.9. Validation process of the calculated Trading Capacity from the 3rd Countries is the following:
- 6.9.1. Capacity Calculator shall calculate the Trading Capacity from 3rd Countries according to Articles 6.6-6.8 of these Methodology and deliver following results to all TSOs:

- a. Trading Capacity from 3rd Countries;

b. Summary report of restrictive Cross-Border Interconnections and their Net Transmission Capacities.

6.9.2. Each TSO shall validate results provided by Capacity Calculator and send validation message to the Capacity Calculator according timeframes set in Table 4.

6.10. If results are not validated by all TSOs, the TSO which does not give its validation must deliver its own calculation results and the reasoning for non validation. The lowest value for Trading Capacity from 3rd Countries shall be used. If the calculation results and reasoning for non validation are not delivered, the Trading capacity with 3rd Countries is set equal to calculation results performed by the Capacity Calculator.

Table 4

Planning stage	Capacity Calculator provide calculations results not later than	TSO's validate calculation results not later than
Day ahead	9:50	10:10
Weekly	Tuesday 16:00	Tuesday 17:00
Monthly	28 th calendar day 12:00	28 th calendar day 16:00
Annually	15 th December calendar day 14:00	17 th December calendar day 16:00

6.11. Capacity for the day ahead trade from Baltic power systems to 3rd Countries is determined by following formula:

$$NTC_{LT-BY} = TTC_{LT-BY} - TRM \quad (6)$$

where:

NTC_{LT-BY} – Net Transmission Capacity for trade of Lithuania-Belarus Cross-Border Interconnection;

TTC_{LT-BY} – Total Transfer Capacity of the Lithuania-Belarus Cross-Border Interconnection in the Belarusian direction;

TRM – Transmission Reliability Margin in Cross-Border Interconnection;

7. **TRADING CAPACITY CALCULATION RULES WITH RUSSIA (KALININGRAD AREA)**

7.1. Day-ahead interconnection capacities for the trade in Lithuanian direction is determined by the following formula:

$$NTC_{RU-LT} = \text{MIN}((TTC_{RU-LT} - TRM); (G_{RU} - P_{RU})) \quad (7)$$

where: NTC_{RU-LT} – Net Transmission Capacity for trade of Lithuania-Russia (Kaliningrad area) Cross-Border Interconnection;

TTC_{RU-LT} – Total Transfer Capacity to the Lithuanian direction according to Instruction for parallel operation in the Lithuania-Russia (Kaliningrad area) interconnection;

TRM – Transmission Reliability Margin in the interconnection, agreed by Lithuanian and Russian TSOs;

G_{RU} – Russia (Kaliningrad area) generation according to the D-2 balance plans;

P_{RU} – Russia (Kaliningrad area) load according to the D-2 balance plans.

- 7.2. Day-ahead interconnection capacities for the trade in Russia (Kaliningrad area) direction is determined by the following formula:

$$NTC_{LT-RU} = TTC_{LT-RU} - TRM \quad (8)$$

where:

NTC_{LT-RU} – Net Transmission Capacity for trade of Lithuania-Russia (Kaliningrad area) Cross-Border Interconnection;

TTC_{LT-RU} – Total Transfer Capacity of the Lithuania -Russia (Kaliningrad area) Cross-Border Interconnection in Russia (Kaliningrad area) direction;

TRM - Transmission Reliability Margin in Lithuania-Russia (Kaliningrad area) Cross-Border Interconnection.

- 7.3. If during previous day actual power flow from Kaliningrad region exceeded Total Transfer Capacity limits in the Lithuania-Russia Cross-Border Interconnection or net interchange of Kaliningrad region is less than allocated capacity from Kaliningrad to Lithuania in Day-Ahead market due to activity of any of the market participants, then for determination of Day-ahead interconnection capacities in Lithuanian direction following formula shall be applied:

$$NTC_{RU-LT} = \text{MIN}((TTC_{RU-LT} - TRM); (G_{RU\text{actual}} - P_{RU\text{actual}})) \quad (9)$$

where:

NTC_{RU-LT} – Net Transmission Capacity for trade of Lithuania-Russia (Kaliningrad area) Cross-Border Interconnection;

TTC_{RU-LT} – Total Transfer Capacity to the Lithuanian direction according to Instruction for parallel operation in the Lithuania-Russia (Kaliningrad area) interconnection.;

TRM – Transmission Reliability Margin in the interconnection;

$G_{RU\text{actual}}$ – Russia (Kaliningrad area) generation according previous day actual data;

$P_{RU\text{actual}}$ – Russia (Kaliningrad area) load according actual data of latest working day, Saturday, Sunday or public holiday shall be used respectively.

8. CAPACITY CALCULATION FALLBACK PROCEDURE

- 8.1 If Trading Capacity from 3rd Countries cannot be calculated, in this case trading Capacity from 3rd Countries shall be define equal to minimum Trading Capacity from 3rd Countries to Baltic States according Article 6.8. Capacity Calculator informs respective TSOs on inability to calculate capacities.
- 8.2 If Trading Capacity from Russia (Kaliningrad area) cannot be calculated, in this case Trading Capacity from Kaliningrad area shall be calculated according formula 7, where G_{RU} and P_{RU} values shall be values of previous day, TTC_{LT-RU} value shall correspond actual

topology status. Capacity Calculator informs respective TSOs on inability to calculate capacities.

- 8.3 The Previous Day mentioned in Article 8.2 means the previous working day if the single day-ahead capacity calculation process failure has effect on a working day, and the previous weekend day or public holiday, as appropriate, if the capacity calculation process failure has effect on a Saturday, Sunday or public holiday. Working day means days from Monday to Friday, not including legal public holidays which are identified through coordination process with neighboring Capacity Calculators.

9. **PROVISION AND ALLOCATION OF TRADING CAPACITY WITH THE 3RD COUNTRIES**

- 9.1. Relevant TSOs provide calculated and validated Trading Capacities for relevant trading timeframes for relevant Cross-Border Interconnections to MO for subsequent capacity allocation through implicit auctioning carried out by MO.
- 9.2. Trading Capacities with the 3rd Countries are provided and allocated in day-ahead time frame for Day Ahead Market.
- 9.3. TSOs have agreed to provide the following Trading Capacities with 3rd Countries:
- 9.3.1. From Russia to Estonia: from Estonia-Russia import Bidding Zone to Estonia Bidding Zone Trading Capacities is provided equal to “0”;
- 9.3.2. From Estonia to Russia: from Estonia Bidding Zone to Estonia-Russia export Bidding Zone Trading Capacities is provided equal to “0”;
- 9.3.3. From Russia to Latvia: from Latvia-Russia import Bidding Zone to Latvia Bidding Zone Trading Capacities is provided equal to “0”;
- 9.3.4. From Latvia to Russia: from Latvia Bidding Zone to Latvia-Russia export Bidding Zone Trading Capacities is provided equal to “0”;
- 9.3.5. From Belarus to Lithuania: from Lithuania-Belarus import Bidding Zone to Lithuania Bidding Zone Trading Capacities are provided following capacity calculation procedures in accordance with the Trading Capacity Calculation Rules with the 3rd Countries according to Articles 6.6-6.8 of these Methodology, and which is subsequently allocated through the implicit auctioning following the trading rules established by the MO;
- 9.3.6. From Lithuania to Belarus: from Lithuania Bidding Zone to Lithuania-Belarus export Bidding Zone Trading Capacities are provided in accordance with the Trading Capacity Calculation Rules with the 3rd Countries according to Article 6.11 of these Methodology, and which is subsequently allocated through the implicit auctioning following the trading rules established by the MO;
- 9.3.7. From Kaliningrad area to the Lithuania Bidding Zone Trading Capacities are provided in accordance with the Trading Capacity Calculation Rules between Lithuanian and Russian (Kaliningrad area) Power Systems according to Article 7.1 of these Methodology, and which is subsequently allocated through the implicit auctioning following the trading rules established by the MO;
- 9.3.8. From the Lithuanian Bidding Zone to the Kaliningrad area Trading Capacities are provided in accordance with the Trading Capacity Calculation Rules between Lithuanian and Russian (Kaliningrad area) Power Systems according to Article 7.2 of these Methodology, and which

is subsequently allocated through the implicit auctioning following the trading rules established by the MO.

10. **FIRMNESS**

- 10.1. After the Day-ahead Firmness Deadline, all Cross-Zonal Capacity and allocation constraints are firm for day-ahead capacity allocation unless in case of Force Majeure or Emergency Situation.
- 10.2. The Day-ahead Firmness Deadline is 10:15 CET.

11. **IMPLEMENTATION OF THE METHODOLOGY**

- 11.1. The TSOs shall implement the Methodology within 3 months after Baltic NRAs' approval of the Methodology.
- 11.2. The Methodology shall be published on web pages of Baltic TSO's within 7 days after NRA approval of the Methodology.