**Description of ab amber grid gas transmission system technical capacity evaluation methods and principles**

1. **General provisions**
2. The aim of the Description of AB Amber Grid gas transmission system technical capacity evaluation methods and principles (hereinafter – Description) is to lay down a detailed description of methods and processes for the evaluation of technical capacity of the natural gas transmission system of AB Amber Grid (hereinafter – transmission system operator) at entry and exit points.
3. Key terms used in the Description:
	1. **AB Amber Grid Transmission System** (hereinafter – Transmission System) means high pressure pipelines and facilities, including natural gas distribution, compressor and metering stations for transmitting gas from companies and liquefied natural gas systems to natural gas storage facilities, distribution pipelines or gas-fired facilities, also structures and measures for the operation of these pipelines.
	2. **Technical Capacity** means the maximum firm capacity that the transmission system operator can offer to the network users, taking account of system integrity and the operational requirements of the transmission network.
	3. **Peak Gas Consumption Day** means days of May – October or November – April when the maximum gas consumption in Lithuania is planned compared to other days of the respective half-year periods.
	4. **Cross-Border Gas Entry Point** means a point where imported gas is delivered in the Republic of Lithuania, whereat gas transmission in the Transmission System starts.
	5. **Cross-Border Gas Exit Point** means a point where gas is released from the Transmission System, whereat gas Transmission System ends**.**
	6. **Maximum Load Scenario of the Transmission System** means the scenario in presence of which the use of the transmission system is close to the maximum possible use of transmission system capacity.
	7. Other terms shall be construed as defined in legal acts of the European Union, the Law on Energy, the Law on Natural Gas and their implementing legislation.
4. **Methods and criteria of technical capacity evaluation**
5. The transmission system operator evaluates the technical capacity of the transmission system and publishes the obtained results online at [www.ambergrid.lt](http://www.ambergrid.lt).
6. Technical capacity is evaluated once per year or more often, if, in case of the formed or planned congestion, there is a need to adjust technical capacity between points and/or to determine technical capacity for a certain period of time/ season, thus optimizing the process of allocation of transmission system capacity.
7. Technical capacity is evaluated anew when making changes to the transmission system or in case of a change of other factors (e.g. the maximum operating pressure) in the transmission system.
8. In the assessment of the technical capacity, AB Amber Grid considers the following:
	1. the existing transmission system, its technical characteristics and specifics of operation:
		1. geometrical and physical parameters of pipelines and facilities (pipeline material, length, diameters, etc.);
		2. gas and ambient temperature, also the calorific value of gas;
		3. the maximum permitted speed of gas in pipelines;
		4. the minimum and maximum pressure at entry and exit points: to and from the transmission system, to gas distribution stations and to and from gas metering stations;
		5. entry gas flow pressure;
		6. present contractual limitations on gas volume and pressure;
		7. gas demand for technological needs of the transmission system operator;
		8. other factors that affect volumes of gas transported via the transmission system.
	2. Prospects of use of natural gas in the upcoming year.
	3. Technical characteristics of cross-border gas entry points and specifics of their operation.
	4. Technically possible directions of natural gas flows in the transmission system at different loads of entry points.
	5. The planned need for capacity at interconnection points with other countries.
	6. Systems of transmission system users, transmission and distribution operators directly connected to the Lithuanian natural gas transmission system, and their technical characteristics.
	7. Other important factors known to the transmission system operator at the time of evaluation of technical capacity.
9. **Process of technical capacity evaluation**
10. Technical capacity is evaluated using the hydraulic calculations programme SIMONE.
11. Evaluating technical capacity once per year, the transmission system operator follows the following stages:
	1. two critical scenarios of natural gas use forecasts in Lithuania are established: the forecasted maximum possible use of natural gas in the Republic of Lithuania, inclusive, in May - October and November - April;
	2. possible natural gas flow scenarios are simulated using the hydraulic calculations programme SIMONE for the peak six-month gas consumption day, having assessed the planned cross-border natural gas flows, the transmission system infrastructure, technical characteristics of cross-border entry points and specifics of their operation;
	3. actual results of gas flows at the domestic exit point of the Republic of Lithuania of two peak gas consumption day scenarios are compared with the set consumption capacity of the respective year. If actual gas flows of these scenarios at the domestic exit point of the Republic of Lithuania are lower than the consumption capacity, these flows are equated to the consumption capacity.
	4. If a congestion forms at entry or exit points of the transmission system in case of one of the two scenarios, or, if there is more accurate information on the potential gas consumption / transportation volumes at certain points, giving priority to points of higher consumption / flows, gas flows are reduced proportionally till congestion is eliminated. If a congestion does not form at entry or exit points of the transmission system in case of one of the two scenarios, or, if there is more accurate information on the potential gas consumption volumes at certain points, giving priority to points of higher consumption / flows, gas flows are increased proportionally till congestion forms. Based on these assumptions, the maximum load scenario of the transmission system is determined, assessing the technical capacity of entry and exit points of the transmission system.
	5. Technical capacity at cross-border points, which does not exceed design capacity of metering stations, is determined by coordinating the volume of technical capacity with operators of adjacent systems.
	6. Having evaluated the technical capacity of the transmission system, the possibility to ensure such capacity to the transmission system users all year long is verified, having assessed the plan of routine repair and reconstruction works of the upcoming year. If temporary reduction of technical capacity is foreseen for the planned repair and reconstruction works leading to limited technical capacity, information thereon is published on the website of AB Amber Grid where technical capacity is published, and in the announced repair and reconstruction plan.
	7. The impact of unplanned repair works on technical capacity is assessed immediately after information on works to be carried out in the transmission system is received.
12. Information on the limitation of transmission capacity for routine and non-routine works in the transmission system is published on the website of AB Amber Grid and in the specialized insider information platform of the market operator.
13. **Requirements for technical capacity evaluation process**
14. The peak gas consumption day volume is determined for each 6-month period according to the data of the maximum peak gas consumption day of the respective half-year periods of at least past 12 months.
15. Natural gas flows, transmitting gas to another neighbouring country, are determined according to the maximum day volume of at least one last year and the planned flows according to the available information of the transmission system operator. If when transmitting gas to another neighbouring state or the Republic of Lithuania or from it natural gas flows were minimum or non-existent in the past one year, the transmission system operator evaluates them according to the existing known contracts on gas transportation or other available information, and may form additional evaluation scenarios.
16. When simulating possible natural gas flow scenarios using the hydraulic calculations programme SIMONE the following is assessed:
	1. possible sources of gas import and gas flows via cross-border gas entry and exit points;
	2. possible domestic gas flows in the transmission system depending on the chosen loads of cross-border gas entry and exit points;
	3. possible use of capacity of transmission system exit points depending on the chosen cross-border gas entry and exit point loads and possible domestic gas flows.
17. Possible natural gas flows must be chosen in order to effectively use the transmission system.
18. The maximum load scenario of the transmission system is chosen from the calculated potential gas flow scenarios.
19. When reassessing technical capacity (upon the formation or in presence of the planned congestion, redistributing capacities between points or assessing capacity for a certain period/ season), the operator considers the latest available information on capacity demand and planned gas flows.
20. If it is known that changes to the transmission system that will affect technical capacity are planned in the upcoming calendar year, they are evaluated to the extent necessary for the evaluation of the technical capacity.

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Annex 1

**List of transmission system entry and exit points**

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| **Seq. No.** | **Name of the entry/ exit point** | **Name of the connected system** |
| **Entry points** |
| 1 | Kotlovka(at the border of LT and BY) | From the transmission system of OAO Beltransgaz |
| 2 | Kiemėnai(at the border of LT and LV) | From the transmission system of JSC Conexus Baltic Grid |
| 3 | Klaipėda(liquified natural gas terminal interconnection point with the transmission system of AB Amber Grid) | From infrastructure of the liquified natural gas terminal of AB Klaipėdos Nafta |
| **Exit points** |
| 1 | Šakiai(at the border of LT and RUS) | Transmission system of RF OAO Gazprom, Kaliningrad division |
| 2 | Kiemėnai(at the border of LT and LV) | Transmission system of JSC Conexus Baltic Grid |
| 4 | MažeikiaiGMS | Mažeikiai distribution system |
| 5 | Šalčininkai | Šalčininkai distribution system |
| 6 | Jašiūnai | Jašiūnai distribution system |
| 7 | Vilnius | Vilnius distribution system |
| 8 | Rudamina |
| 9 | A. Paneriai-1 |
| 10 | B. Vokė |
| 11 | A. Paneriai-2 | User system |
| 12 | Maišiagala | Maišiagala distribution system |
| 13 | Širvintos | Širvintos distribution system |
| 14 | Grigiškės | Grigiškės distribution system, user system |
| 15 | Vievis | Vievis distribution system |
| 16 | Elektrėnai | Elektrėnai distribution system, user system |
| 17 | Žiežmariai | Žiežmariai distribution system |
| 18 | Kaišiadorys | Kaišiadorys distribution system |
| 19 | Praviena | Praviena distribution system |
| 20 | Kaunas-1 | Kaunas distribution system (Kaunas-1 and user system) |
| 21 | Kaunas-2 |
| 22 | Girininkai |
| 23 | Alytus | Alytus distribution system |
| 24 | Butrimonys | Butrimonys distribution system |
| 25 | Birštonas | Birštonas distribution system |
| 26 | Jonava | Jonava distribution system, user system |
| 27 | Batniava | Batniava distribution system |
| 28 | Lekėčiai | Lekėčiai distribution system |
| 29 | Zapyškis | Zapyškis distribution system |
| 30 | Šakiai | Šakiai distribution system |
| 31 | Jurbarkas | Jurbarkas distribution system |
| 32 | Prienai | Prienai distribution system |
| 33 | Marijampolė | Marijampolė distribution system |
| 34 | Pabradė | Pabradė distribution system |
| 35 | Vilkaviškis | Vilkaviškis distribution system |
| 36 | Nemenčinė | Nemenčinė distribution system |
| 37 | Švenčionėliai | Švenčionėliai distribution system |
| 38 | Visaginas | Visaginas distribution system |
| 39 | Vandžiogala | Vandžiogala distribution system |
| 40 | Kėdainiai | Kėdainiai distribution system |
| Josvainiai distribution system |
| 41 | Ukmergė | Ukmergė distribution system |
| 42 | Taujėnai | Taujėnai distribution system |
| 43 | Anykščiai | Anykščiai distribution system |
| 44 | Utena | Utena distribution system |
| 45 | Raguva | Raguva distribution system |
| 46 | Panevėžys-1 | Panevėžys distribution system |
| 47 | Panevėžys-2 |
| 48 | Piniava | Piniava distribution system |
| 49 | Gegužinė | Gegužinė distribution system |
| 50 | Pasvalys | Pasvalys distribution system |
| 51 | Pajiešmeniai | Pajiešmeniai distribution system |
| 52 | Biržai | Biržai distribution system |
| 53 | Pakruojis | Pakruojis distribution system |
| 54 | Alksnupiai | Alksnupiai distribution system |
| 55 | Radviliškis | Radviliškis distribution system |
| 56 | Šiauliai | Šiauliai distribution system |
| 57 | Daugėliai |
| 58 | Kužiai | Kužiai distribution system |
| 59 | Papilė | Papilė distribution system |
| 60 | N. Akmenė | N. Akmenė distribution system |
| 61 | Telšiai | Telšiai distribution system |
| 62 | Plungė | Plungė distribution system |
| 63 | Rietavas | Rietavas distribution system |
| 64 | Kretinga | Kretinga distribution system |
| 65 | Palanga | Palanga distribution system |
| 66 | Klaipėda -1 | Klaipėda distribution system |
| 67 | Klaipėda -2 |
| 68 | Gargždai | Gargždai distribution system |
| 69 | Tauragė | Tauragė distribution system |