

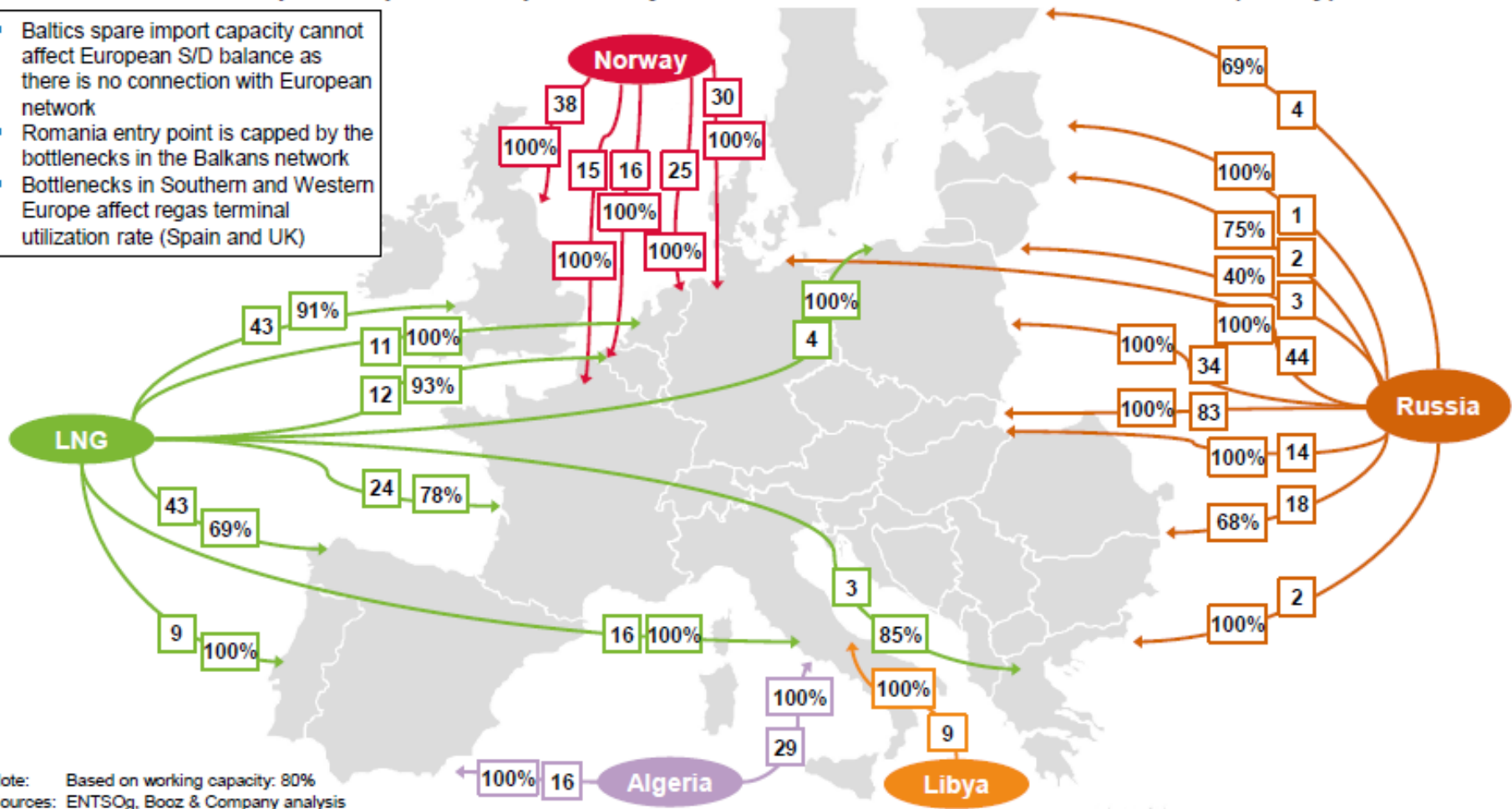
Gas market in Estonia

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Development of gas market in EU

European Pipeline Import Entry Points Utilization and Main Flow - 2030 (bcm/y)

- Baltics spare import capacity cannot affect European S/D balance as there is no connection with European network
- Romania entry point is capped by the bottlenecks in the Balkans network
- Bottlenecks in Southern and Western Europe affect regas terminal utilization rate (Spain and UK)



Note: Based on working capacity: 80%
Sources: ENTSOG, Booz & Company analysis

Development of gas market in EU

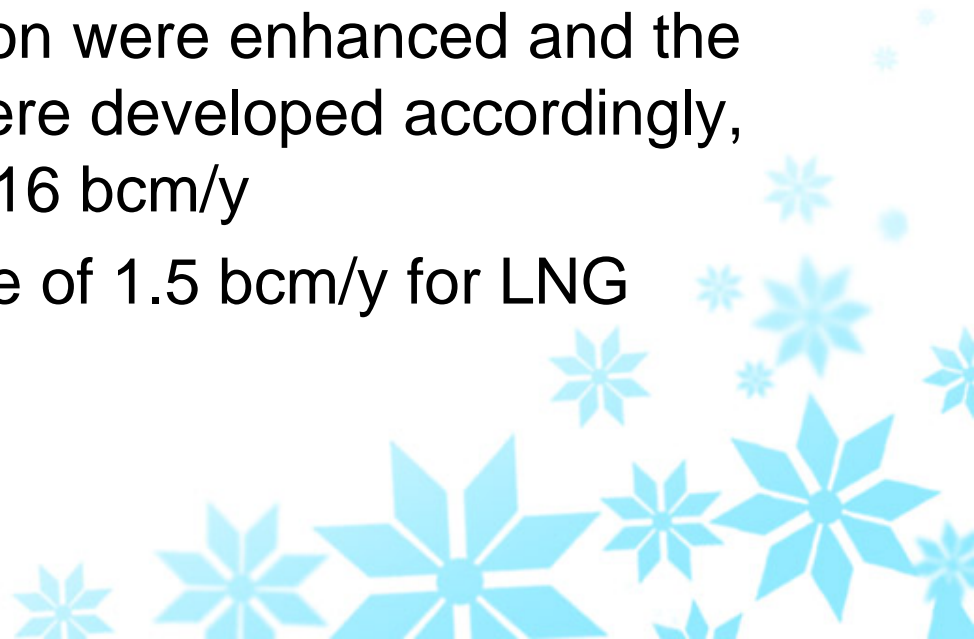
European Supply/Demand Balance by Country
2030

		<i>West</i>										<i>Baltics</i>						<i>East</i>												
	EU	BE	DE	ES	FR	IE	IT	LU	NL	PT	SU	UK	DK/SE	EE	FI	LV	LT	PL	AT	BG	CY	CZ	EL	FY	HR	HU	RO	RS	SK	SI
Domestic Production	9%		7%			1%			64%			9%	25%					4%	6%			1%			23%	4%	35%			
Russia	33%		91%		18%		23%	47%						100%	100%	100%	100%	87%	94%	100%		14%	59%	100%	78%	96%	65%	36%	100%	
Norway	20%	100%	2%		20%		9%		36%		100%	67%						1%												
Algeria	7%				29%		29%																							
Libya	1%						9%																							
LNG	26%				71%	62%	99%	30%			100%	24%						8%					41%							
Non-Russian Gas e.g. LNG/Norway	0%																					38%							86%	
Unfulfilled	3%							53%					75%								100%	47%					64%		14%	

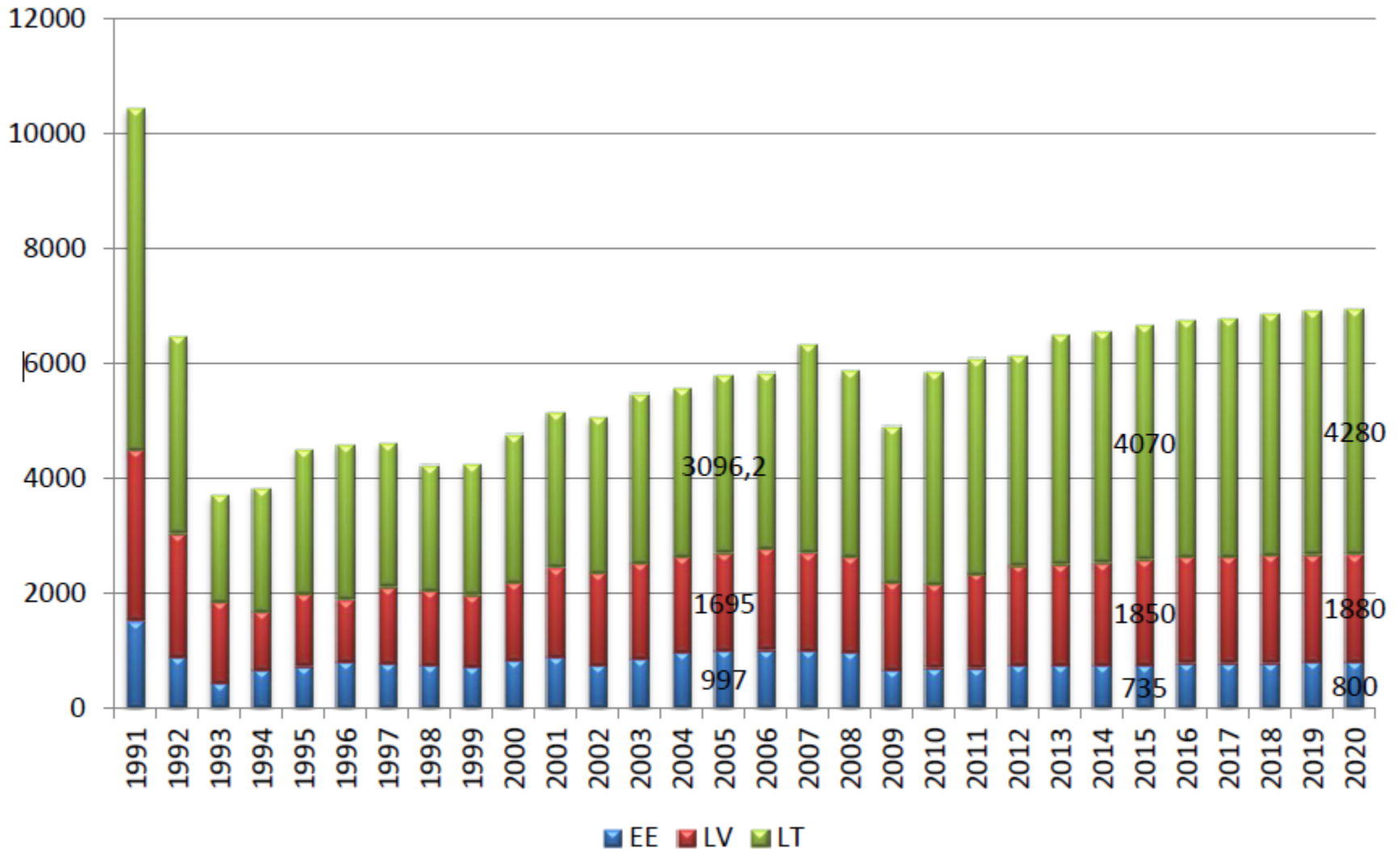
>75% concentration
 Transit country: concentration of supply not relevant
 Unfulfilled demand

Eastern Baltic region gas market development

- Eastern Baltic area relies entirely on Russian gas supplies and only Latvia and Finland are compliant with N-1 rule regarding the security of supply
- Finland, Estonia, Latvia and Lithuania gas market is currently total about 10 bcm/y
- If gas supply diversification were enhanced and the required infrastructure were developed accordingly, market could grow up to 16 bcm/y
- With the additional upside of 1.5 bcm/y for LNG bunkering



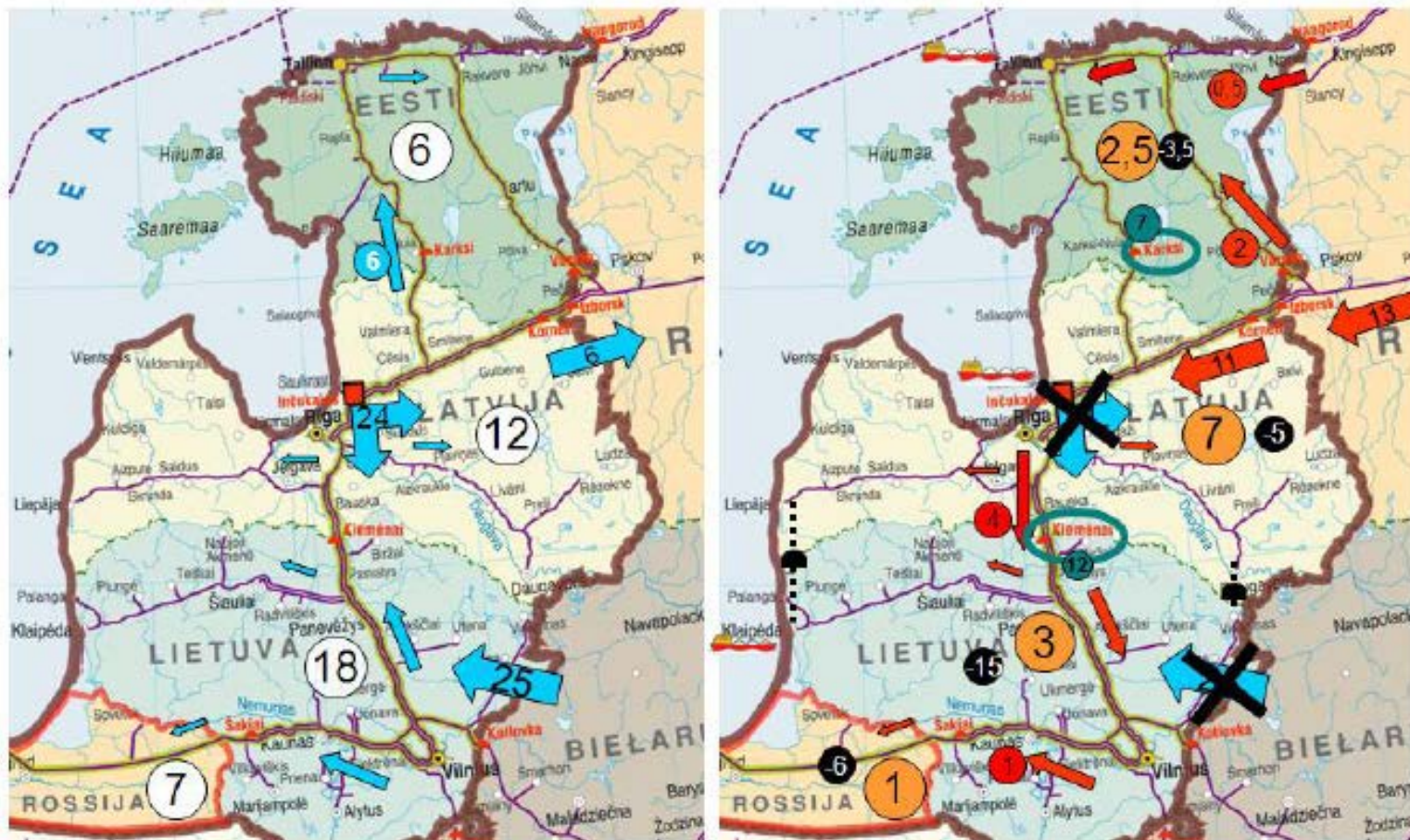
Development of natural gas consumption in Baltic States



Gas supply interruption from Inčukalns UGS and Kotlovka or Izborsk

- The most severe (but with the lowest possibility) is disruption scenario which foresees the simultaneous disruption of Inčukalns UGS and gas supply through Izborsk GMS or Kotlovka GMS
- In case gas supply from Inčukalns UGS and Kotlovka GMS is lost at the same time, alternative gas supplies to the Baltic region are only available directly from Russia through Izborsk GMS and Narva LKS up to 13.5 million m³ per day, incl. 2.5 million m³ for Estonia and 7 million m³ for Latvia, as well as 4 million m³ per day in transit through Latvia for the needs of consumers in Lithuania (3 million m³) and Kaliningrad (1 million m³)
- However, the capacity limitation of the existing cross-border connections would cause a gas shortage in each country of the region – 3.5 million m³ per day in Estonia, 5 million m³ per day in Latvia, 15 million m³ per day in Lithuania and 6 million m³ per day in Kaliningrad

Natural gas disruption from Incukalna UGS and Kotlovka in winter



- | | | | | | |
|---|--|--|--|---|---|
|  | Cross border gas transmission pipeline |  | Incukalna UGS |  | Gas Metering Station (GMS) |
|  | Supply flow (MCM per day) |  | disruption |  | Shortage (MCM per day) |
|  | Standard flow |  | Flow in case of disruption (MCM per day) |  | Reconstruction for increased flow. Flow capacity after reconstruction (MCM per day) |
| | |  | Demand (MCM per day) | | |
| | |  | Maximum supply available (MCM per day) | | |

Gas supply interruption from Inčukalns UGS and Kotlovka or Izborsk

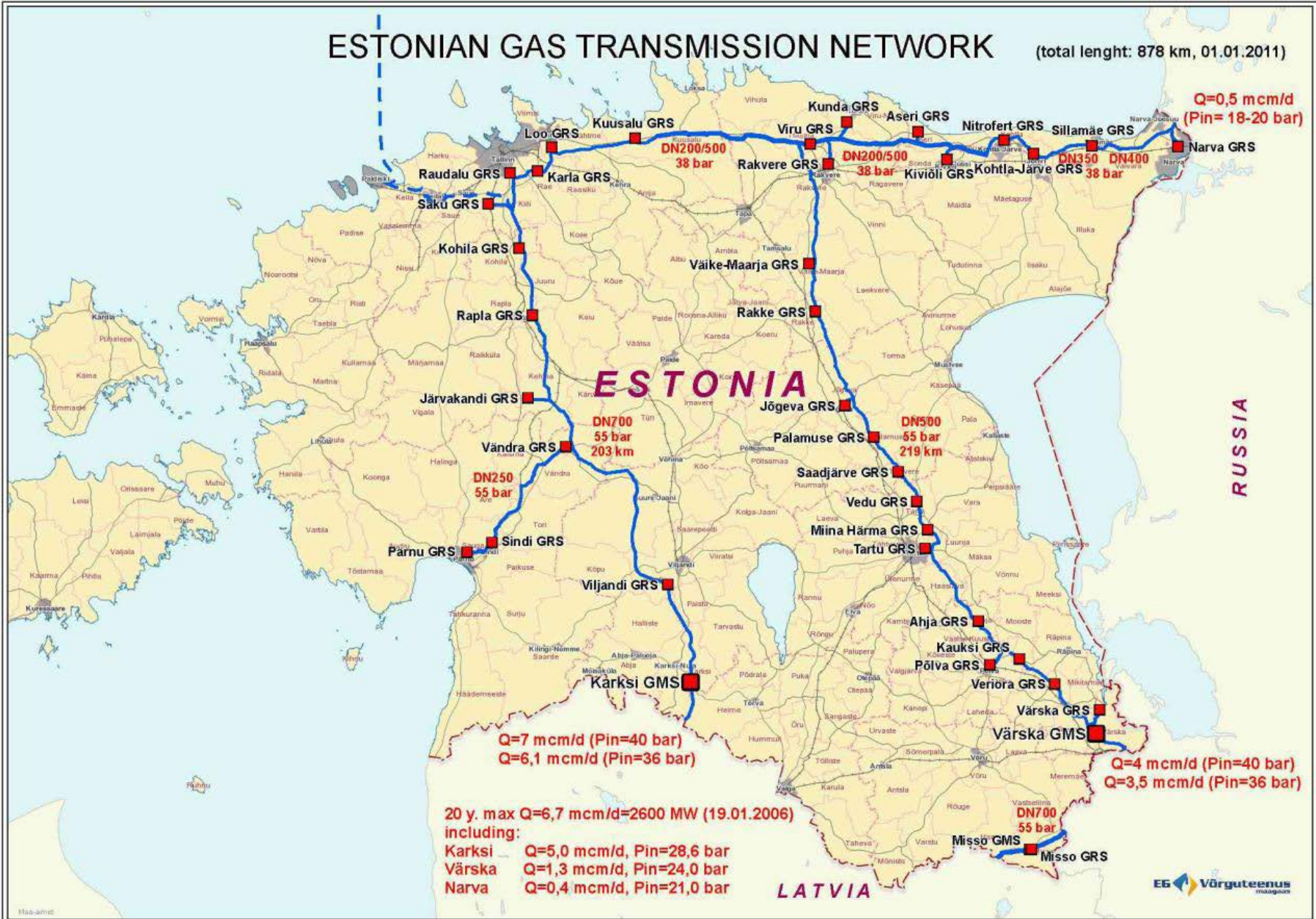
Country	Average consumption, mcm			Shortage in case of disruption, mcm			Consumption in case of disruption, mcm		
	1day	3day	15days	1day	3day	15days*	1day	3day	15days*
Lithuania	18	54	216	-15	-45	-180	3	9	36
Latvia	12	36	144	-5	-15	-60	7	21	84
Estonia (with Nitrofert)	6	18	72	-3.5	10.5	-42	2.5	7.5	30
Kaliningrad**	7	21	84	-6	-18	-72	1	3	12
Total for the region	43	129	516	-29.5	-88.5	-354	13.5	40.5	162

*0.8 ratio is applied for 15 days calculation

**Region with increasing demand due development

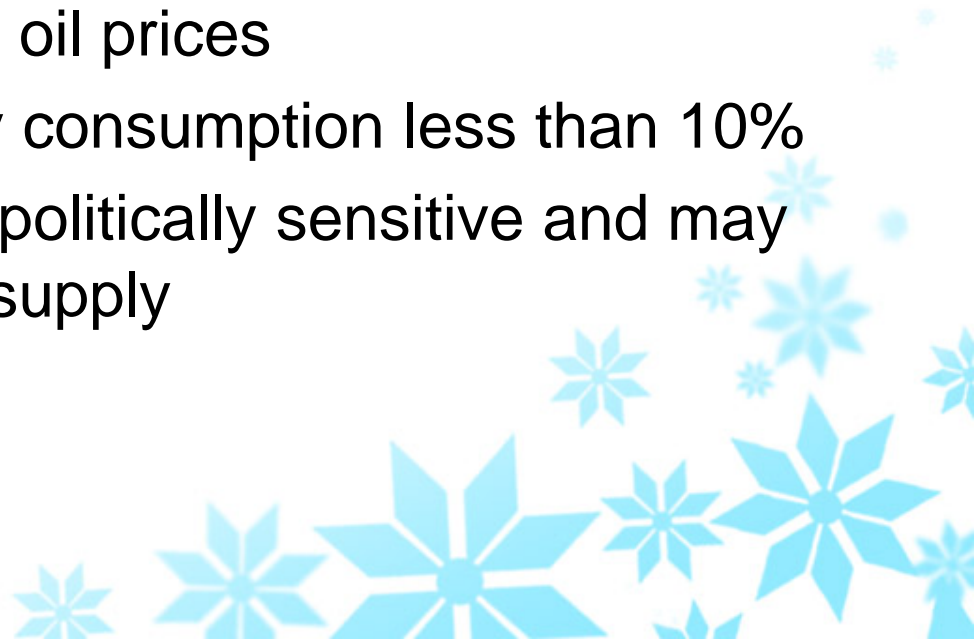
ESTONIAN GAS TRANSMISSION NETWORK

(total length: 878 km, 01.01.2011)

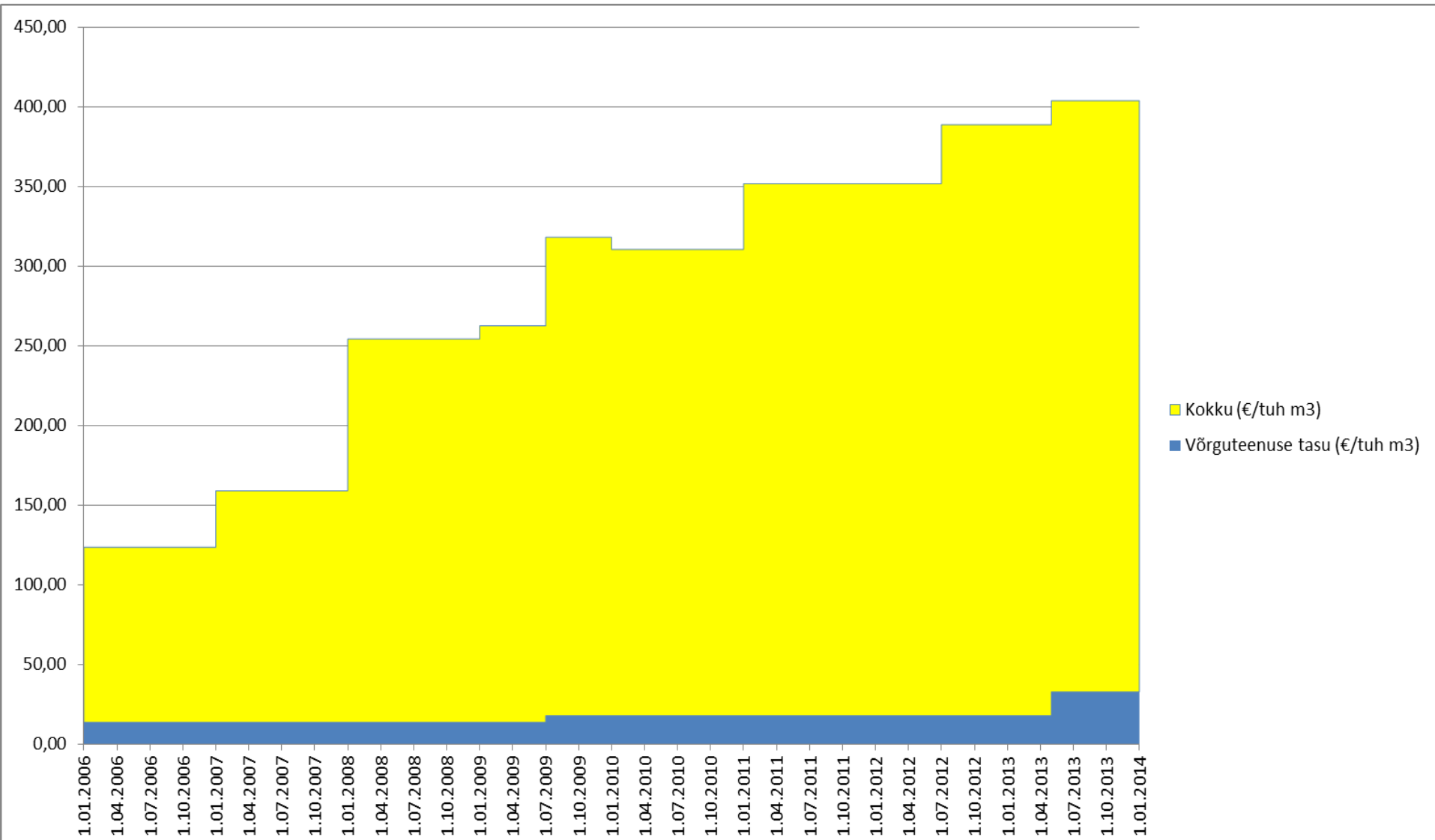


Challenges in Estonian gas market

- Single supplier of natural gas
- Vertically integrated gas monopoly
- No compressor stations in the border
- Gas infrastructure doesn't meet N-1 criteria
- Gas price highly tied with oil prices
- Gas share in total energy consumption less than 10%
- Gas demand increase is politically sensitive and may affect security of energy supply



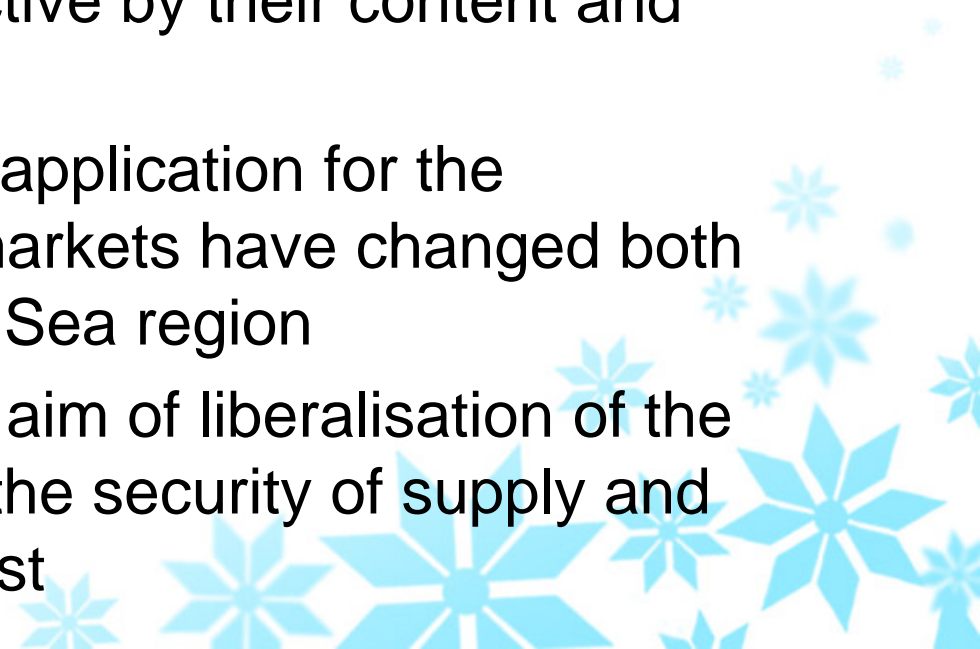
Price of natural gas to consumers in Estonia



Opportunities in Estonian gas market

- Unbundling TSO and gas supplier
 - New infrastructure (interconnections, LNG terminals)
 - Diversification of gas suppliers
 - Internal gas productions (biomethane)
 - To untie gas price from oil prices
 - Harmonised gas market development within the region (Baltic States, Finland)
 - Gas share increase in total energy consumption (power, transportation, industry, district heating)
 - Bunkering services and harbours development
- 

Legislative changes and unbundling of TSO

- Although Article 49 of Directive 2009/73/EC provides a derogation for Estonia and does not require ownership unbundling of the transmission system from gas producer and seller, Estonia has the right to establish national provisions which conform to the requirements of the directive by their content and purpose
 - Compared to the time of application for the derogation, the energy markets have changed both globally and in the Baltic Sea region
 - Estonia has set itself the aim of liberalisation of the gas market for ensuring the security of supply and settling conflicts of interest
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Legislative changes and unbundling of TSO

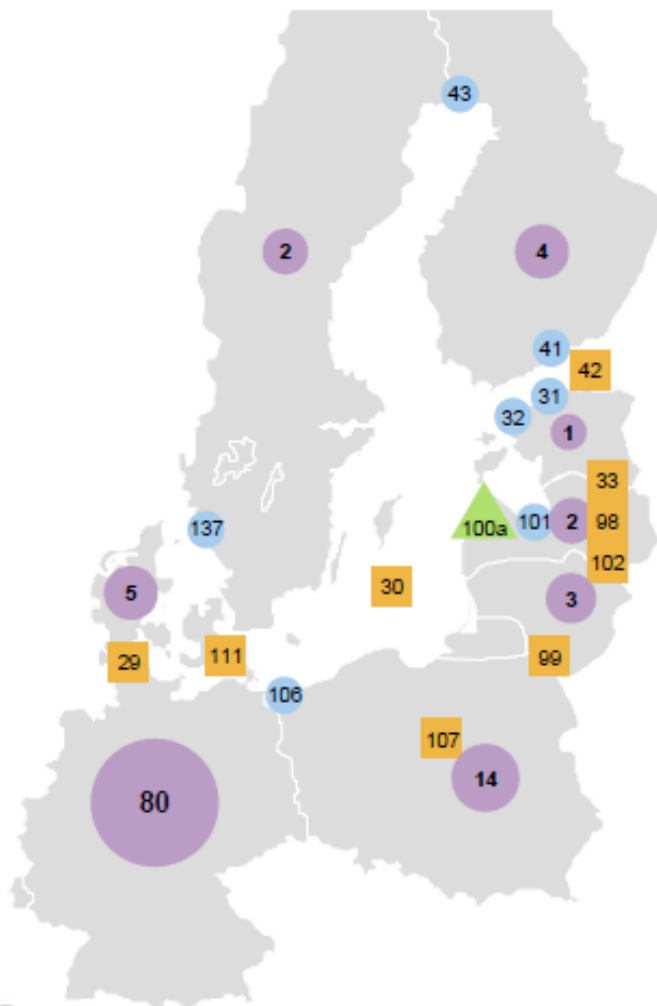
- On 6 June 2012 the Estonian Riigikogu approved amendments of natural gas act
- The legislative amendment sets 1 January 2015 as the date by which the completion of the liberalisation of the gas market should be carried through
- Latest by that date, the network operator who owns the transmission network, owns or operates measurement systems at state border and who has been certified and designated as system operator according to Article 3 of Regulation (EC) No 715/2009 of the European Parliament and of the Council, shall be the system operator

Effect to customers

- Wholesale market has currently one dominant player (Eesti Gaas AS), as chemical industry undertaking (fertilizer producer) Nitrofert has presently halted its activities.
- Retail market consists of Eesti Gaas AS and 24 small retail undertakings.
- The market share of distribution services of Eesti Gaas AS reaches ca 91% and the undertaking has 43.5 thousand customers
- In accordance with the Natural Gas Act all network tariffs and methodologies for calculating connection fees are approved by the Estonian Competition Authority
- Gas price is not fully regulated and all customers buy gas at market price. Only the market dominant company - currently Eesti Gaas AS, has to approve the sales margin, as a component of the price for households
- At the end of each calendar year the company makes a settlement of accounts (recalculation) based on the actual volume supplied to the household customers

Future of Eastern Baltic isolated gas island

Infrastructure package



Code	Project Name
G29	EXTENSION OF EXISTING GAS TRANSMISSION CAPACITY IN THE DIRECTION TO DENMARK
G30	TIE-IN OF NORWEGIAN OFF-SHORE NATURAL GAS TRANSMISSION SYSTEM TO DANISH OFF-SHORE NATURAL GAS INFRASTRURE
G31	EAST BALTIC SEA REGIONAL LNG TERMINAL - TALLINN LNG
G32	PALDISKI REGIONAL LNG TERMINAL
G33	KARKSI GMS
G41	FINNGULF LNG
G42	BALTICCONNECTOR
G43	TORNIO MANGA LNG TERMINAL
G98	ENHANCEMENT OF CAPACITY OF PIPELINE KLAIPEDA – KIEMENAI
G99	POLAND - LITHUANIA INTERCONNECTION (GIPL)
G100a	MODERNIZATION AND EXPANISION OF INCUKALNS UGS
G101	BALTIC REGIONAL LNG IMPORT TERMINAL IN LATVIA
G102	ENHANCEMENT OF LATVIA – LITHUANIA INTERCONNECTION
G106	THE EXTENSION OF LNG TERMINAL IN SWINOUJSCIE
G107	THE UPGRADE OF THE ENTRY POINTS IN LWOWEK AND WLOCLAWEK ON THE YAMAL-EUROPE PIPELINE
G111	POLAND – DENMARK INTERCONNECTION (BALTIC PIPE)
G137	SWEDEN LNG TERMINAL

● Gas Consumption by country (bcm/y)
 ■ Pipeline
 ● LNG terminal
 ▲ Storage

Future of Eastern Baltic isolated gas island

Legislative package

- All four countries have somewhat different setups and preconditions in terms of regulation and legal framework
- It is vital that rules and legislation are as uniform in all the countries in order to create the appropriate investment climate and in order to ensure the creation of a functioning gas market in the region.
- In EU the harmonization of network codes, including capacity management rules, gas transmission tariffs, entry-exit regimes etc. is a continuing process. For EBR, as a minimum the same rules should apply for Baltic States and Finland.
- Financial regulation necessary for developing new natural gas infrastructure investments in East Baltic region should involve the following components (but not only): principles of participation and cost-sharing, harmonized conditions for transparent and non-discriminatory third party access (TPA) to transmission infrastructure, regulation of tariffs, joint natural gas entry/exit model (EEM), capacity management rules, conditions and schedule for creating a regional balancing area

Thank you for the attention!

