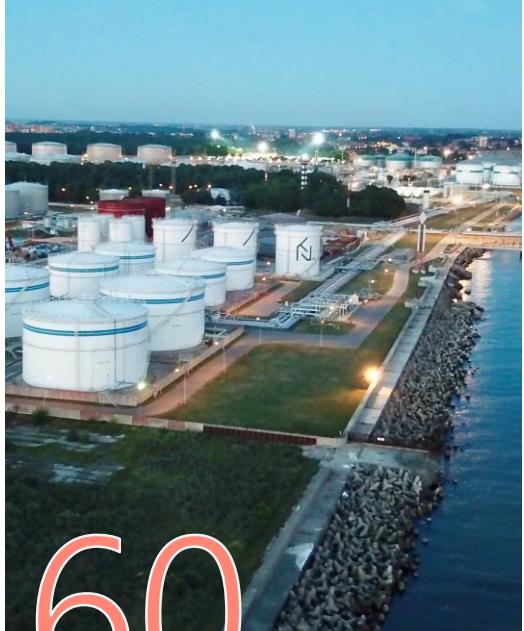


Klaipeda LNG value chain: lessons learned and opportunities for EaP states

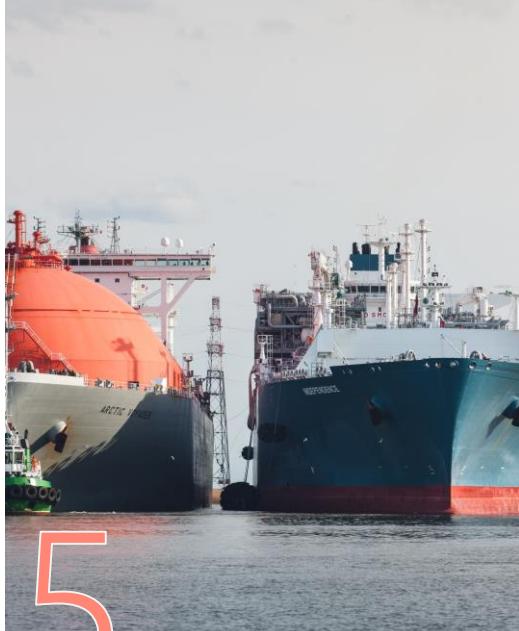




60 years

OIL TERMINALS

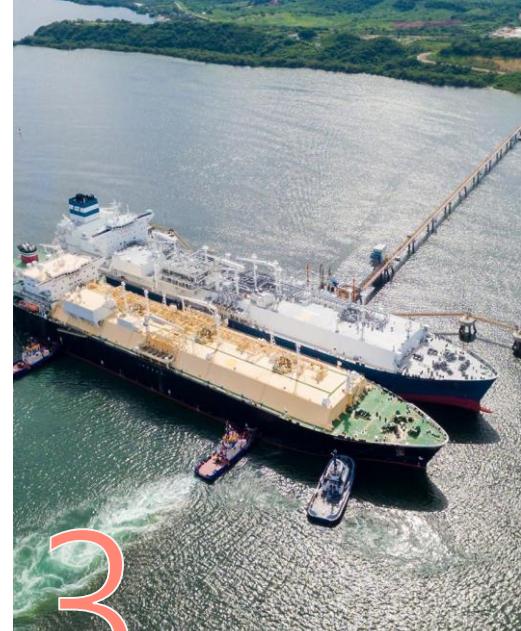
- Klaipėda oil terminal
- Subačius oil terminal



5 years

LNG TERMINALS

- Klaipėda LNG terminal
- LNG reloading station
- LNG bunkering vessel Kairos

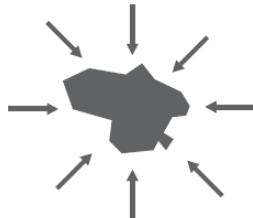


3 years

INTERNATIONAL LNG BUSINESS DEVELOPMENT ACTIVITIES



THE RATIONALE FOR LNG TERMINAL



Third party access to spur competition

The terminal to help diversify energy sources

To ensure security of energy supply

Import prices to reflect the global market price level

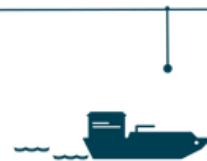
LNG SUPPLY CHAIN



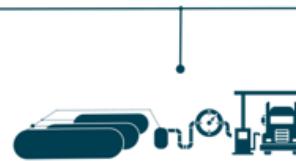
LNG Storage



LNG Break Bulk



LNG
transportation
vessel



LNG truck loading
and bunkering



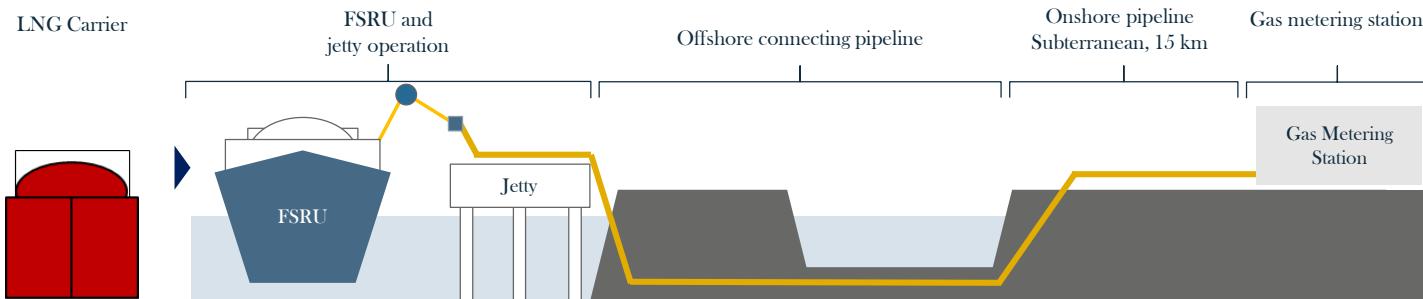
LNG
distribution



KLAIPEDA LNG TERMINAL

- KN is developer and operator
 - Terminal based on FSRU Independence
 - Storage – 170.000m³; Regas ~4bcm
 - Average utilization – >30%
- 
- Energy security measure for the Baltic States
 - Gas diversification
 - Full Third-Party-Access

Klaipeda LNG Terminal technical conditions



Main Terminal's Technical Characteristics*	
Terminal's Regasification Capacity (nm ³)	Up to 3.75 bcm / year 10.2 mcm / day
Total capacity of LNG tanks	170,000 m ³
Minimum operational LNG heel level	3,500 m ³
Maximum LNG loading rate	9,000 m ³ LNG /hour
Maximum LNG reloading rate (if no regasification performed)	9,000 m ³ LNG /hour
Maximum LNG regasification rate	428,398 Nm ³ /hour
Minimum LNG Regasification rate	57,089 Nm ³ /hour
Maximum capacity of LNG Carrier performing LNG discharge, unless agreed otherwise	160,000 m ³

*Terminal's Technical Characteristics are indicated at reference conditions: temperature (combustion/measurement) - 25/0 °C, pressure - 1.01325 bar

POSITION





SMALL SCALE BREAK BULK

- Reloading up to 5.000 m³/h
 - LNG Bunker vessels capacity from 1.000m³
 - LNG quality determination with GC and sampling during reload
 - Navigation in Klaipeda port 24/7
- 
- No additional investment for reload



BREAK BULK





BUNKERING AND TRUCK LOADING

- Third party access
- No BOG allocation to users
- Service 24/7
- Up to date technology

Multi-service and flexible small scale terminal



TRUCK LOADING

Volume of LNG storage tanks	$5 \times 1.000\text{m}^3$
Maximal LNG filling level	90%
Annual technological capacity	250.000m^3

Number of truck loading bays	2 bays
Maximal number of LNG loaded trucks per day	24 trucks
LNG truck loading rate	up to $100 \text{ m}^3/\text{h}$



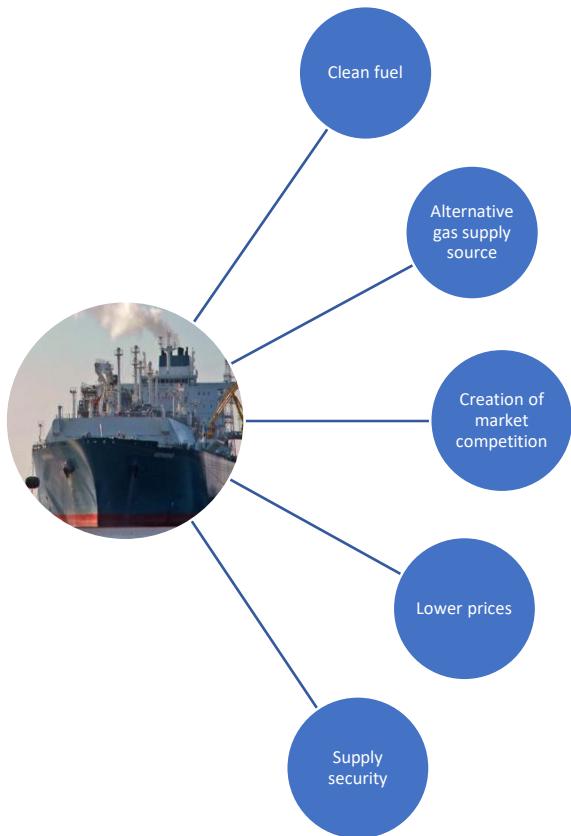
BUNKERING

Length of the jetty	274m
Maximum vessel draught	12,5m
Jetty location	close to the port entrance
LNG bunkering rate	up to 500 m ³ /h



KSSA applies 70 % discount for certain port dues if vessel arrives for the purpose of bunkering.

Main benefits of SSLNG development in the region



Higher usage of clean fuel



Market competition and lower LNG prices

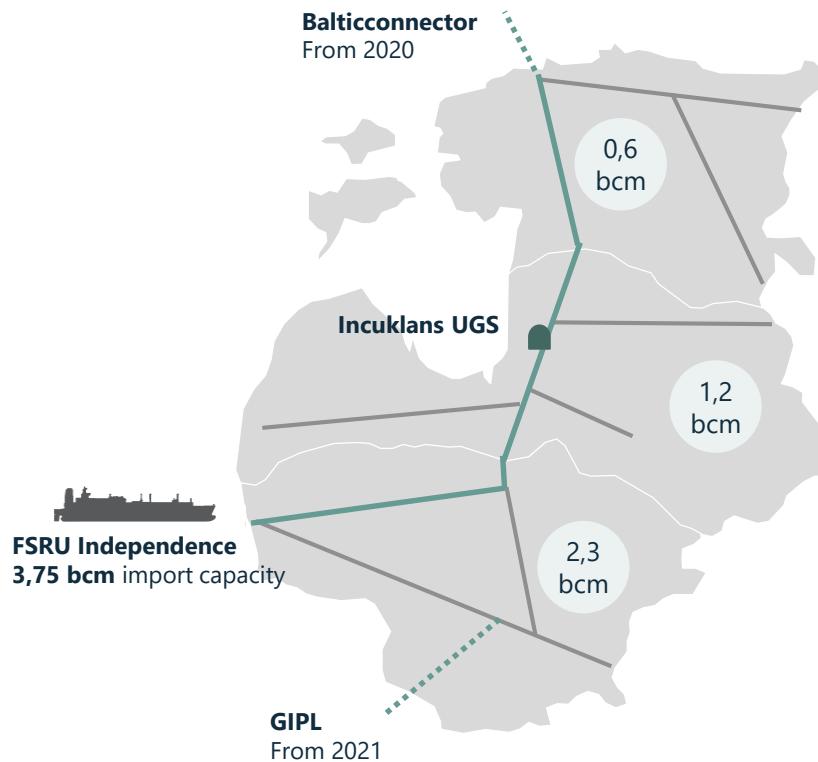


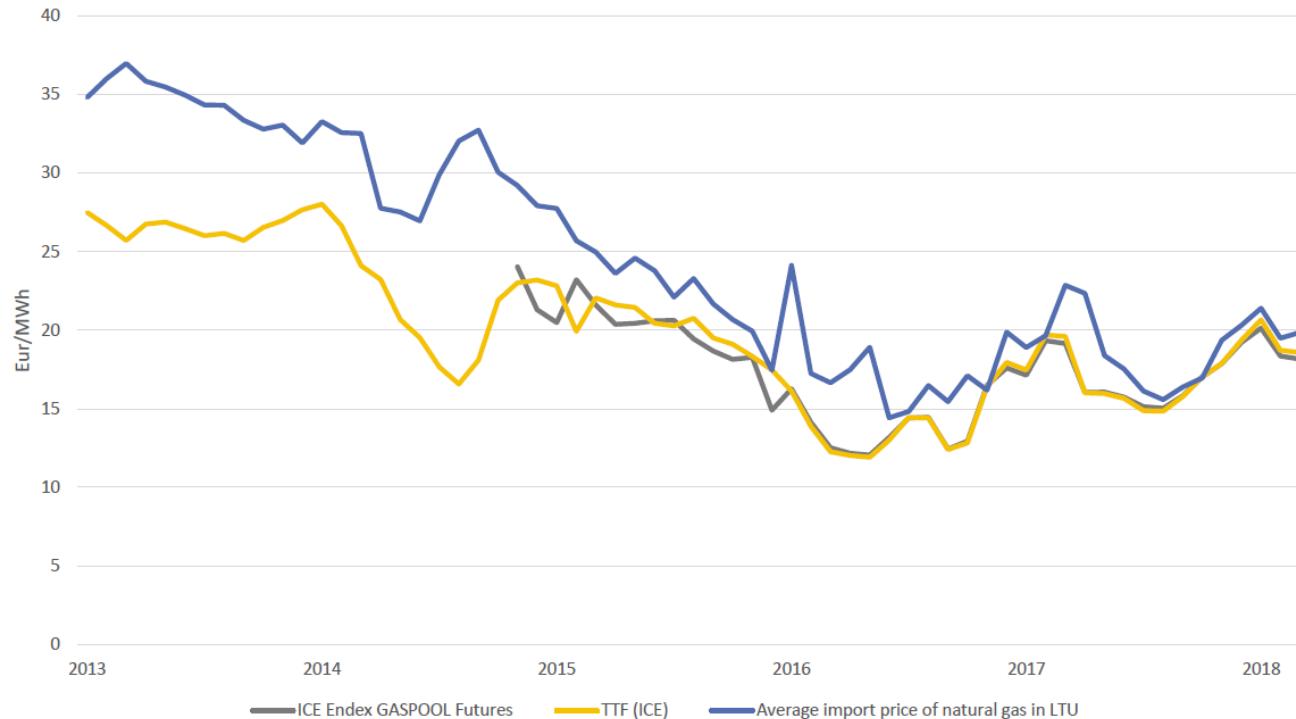
Increased market reach and regional exports



Regional Market benefits brought by Klaipeda LNG Terminal

- Ended the 100% reliance on monopoly supplier
 - Transparent TPA mechanism
- Effective price cap
 - Access to international LNG markets
- Near-complete ability to supply the gas market need
 - Combined with Inculklans UGS for seasonality
- Access to clients with limited size portfolios
 - Joint use of LNG in the terminal
- Enabling the small scale LNG development
 - Break bulk of high quality LNG for further distribution



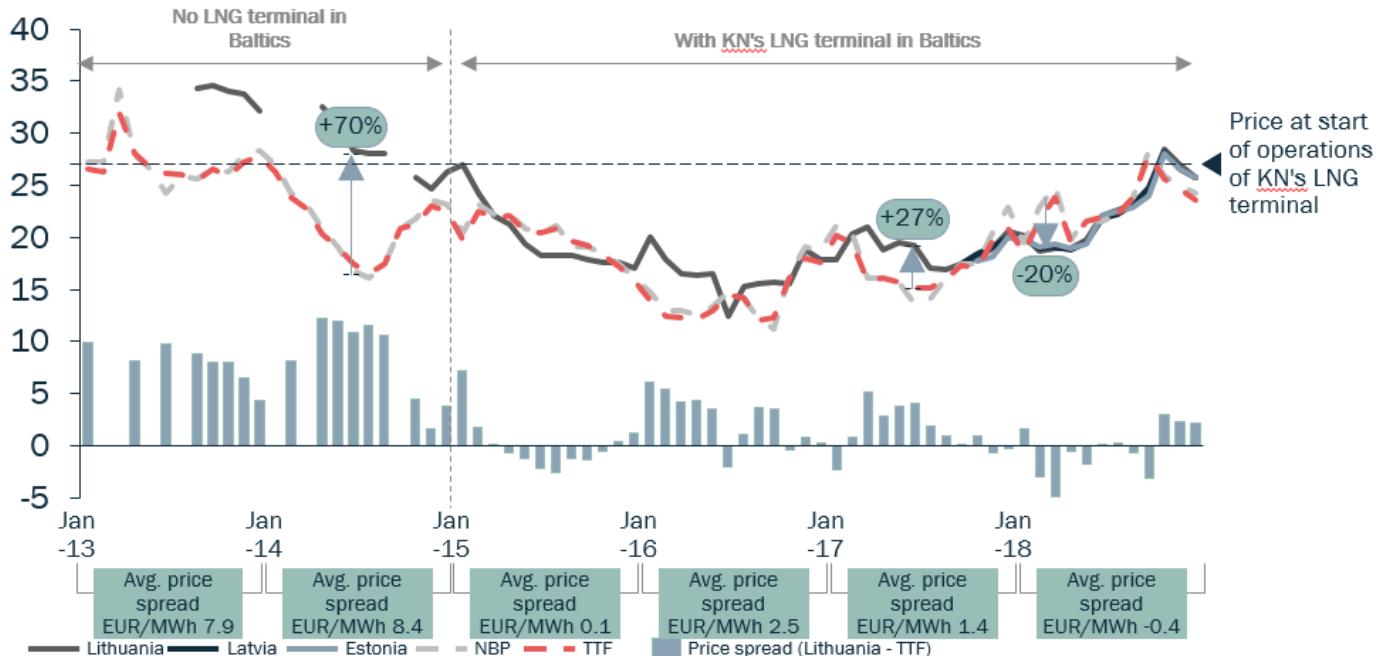


Source: Data of NCC

Note: Natural gas purchase costs of gas purchased by AB "Achema" and UAB "Kauno termofifikacijos elektrinė" for their own purposes are not evaluated.

The alternative supply of Lithuania and the region has provided security of supply, and thus lower regional gas prices

Gas prices [EUR/MWh]¹⁾



1) Average monthly natural gas price in UAB "GET Baltic" natural gas exchange

Source: NCC; Roland Berger

Klaipeda LNG Terminal hub in its 5th year of operations

	2015	2016	2017	2018 / 2022
Natural gas regasified, bcm	0.5	1.3	1.1	>1
Capacity utilization	13%	35%	30%	>30%
Terminal users	 LITGAS	 LITGAS  LIETUVOS DUJOS tiekimas  ACHEMA	 LITGAS  LIETUVOS DUJOS tiekimas  ACHEMA	Multiple users
LNG reload services to	-	-	 SkanGas	Multiple users
Access to regas markets	 	 	  	    +
Reloaded LNG delivered to			  	Multiple countries
LNG suppliers	 Statoil	 Statoil	 Statoil  CHENIERE gasNatural fenosa	Multiple suppliers
LNG truck loading station users			 LITGAS  EESTI GAAS  Oil terminal	Multiple users
LNG truck loading services for			 duon  JetGas  EESTI GAAS	Multiple users
Operational regime	Energy security	Energy security Commercial regas	Energy security Commercial regas Commercial reloading Commercial truck loading	Energy security Commercial regas Commercial reloading Commercial truck loading





THANK YOU FOR YOUR
ATTENTION

Lina Žongolavičiūtė

Project Manager for LNG Commerce
„Klaipėdos Nafta“ Ltd