

Lithuania's Energy Sector Development Trends



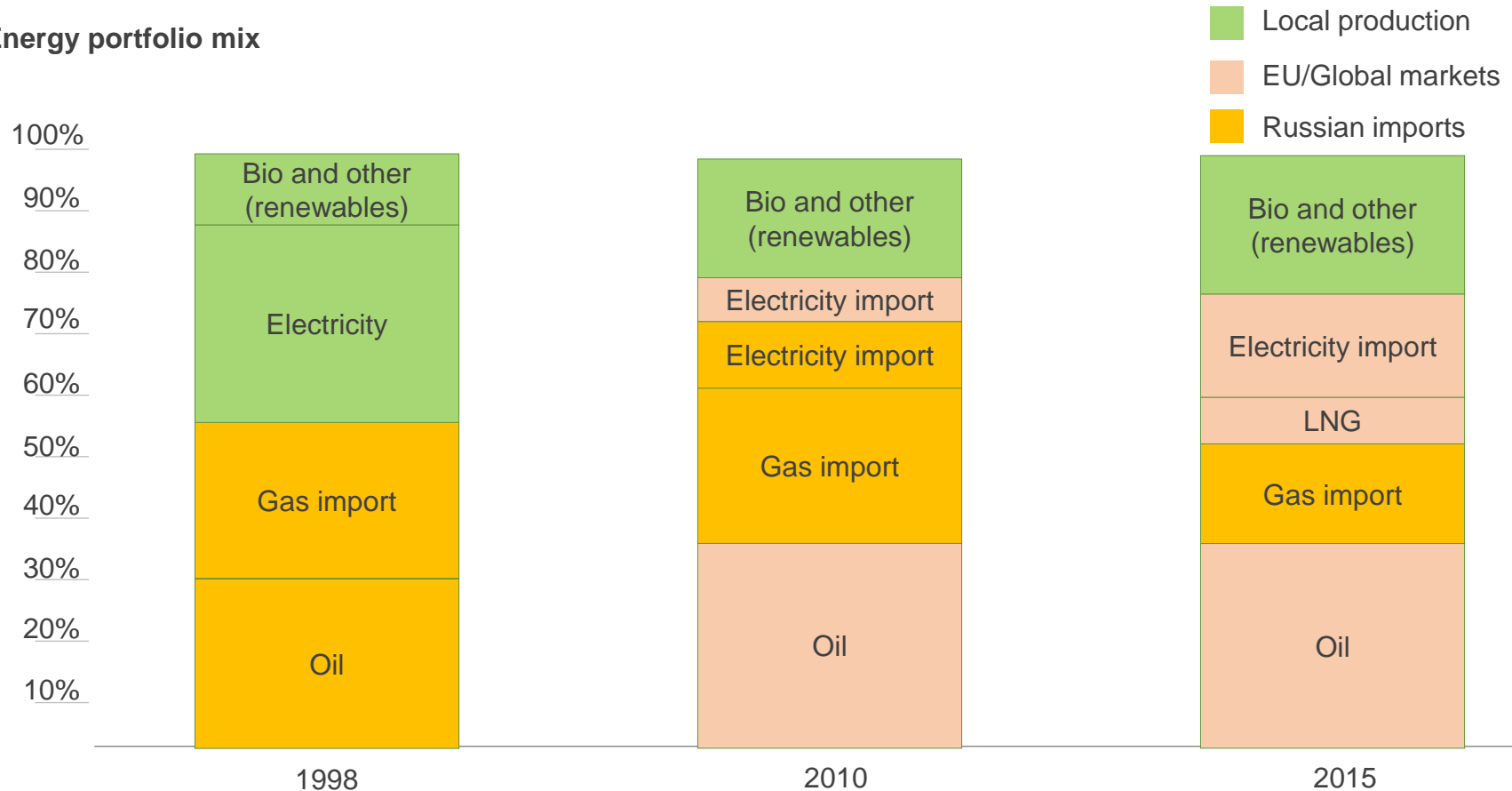
Rokas Masiulis
The Minister of Energy of the Republic of Lithuania

Baltic Utilities Forum
Riga, 2015.04.09

Systematic Diversification of Energy Portfolio



Energy portfolio mix



Key highlights

Butinge Oil Import Terminal (1999)

Closing of Druzhba oil pipeline (2006)

Closing of Ignalina Nuclear Power Plant (2009)

Start of 3rd Energy Package implementation (2011)

Klaipeda LNG terminal (2014)

NordBalt (2015)

LitPol Link (2015)



Būtingė Oil Import Terminal



- 1995 start of construction
- 1999 operational
- CAPEX over 300 mln. USD
- Import capacity 8 mln. tonnes/annum
- 2006 Druzhba pipeline “closed for renovation”

- Druzhba pipeline
- “Closed section”
- - Under construction
- Oil refinery
- Būtingė oil import terminal



Nordbalt and LitPol Link – Access to new Markets



NordBalt (2015)

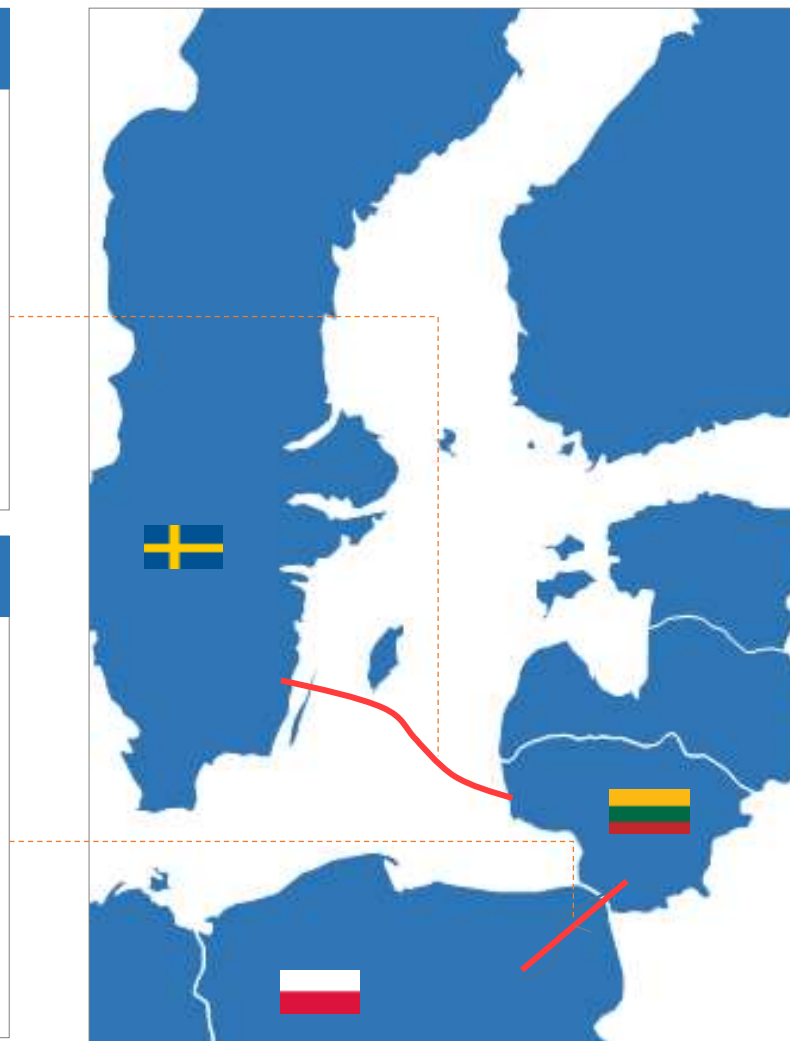
Goal: to connect the three Baltic states with the Scandinavian market.

- One of the longest underwater electricity cables in the world – more than 450 km
- Capacity – 700 MW
- Voltage – 300 kV
- CAPEX – over 552 mln. EUR (LT share – 215 mln. EUR, SE – 337 mln. EUR; EU financial support – 131 mln. EUR; +44 mln. EUR – to LV)

LitPolLink (2015)

Goal: to connect the three Baltic states to European Union energy market and energy system.

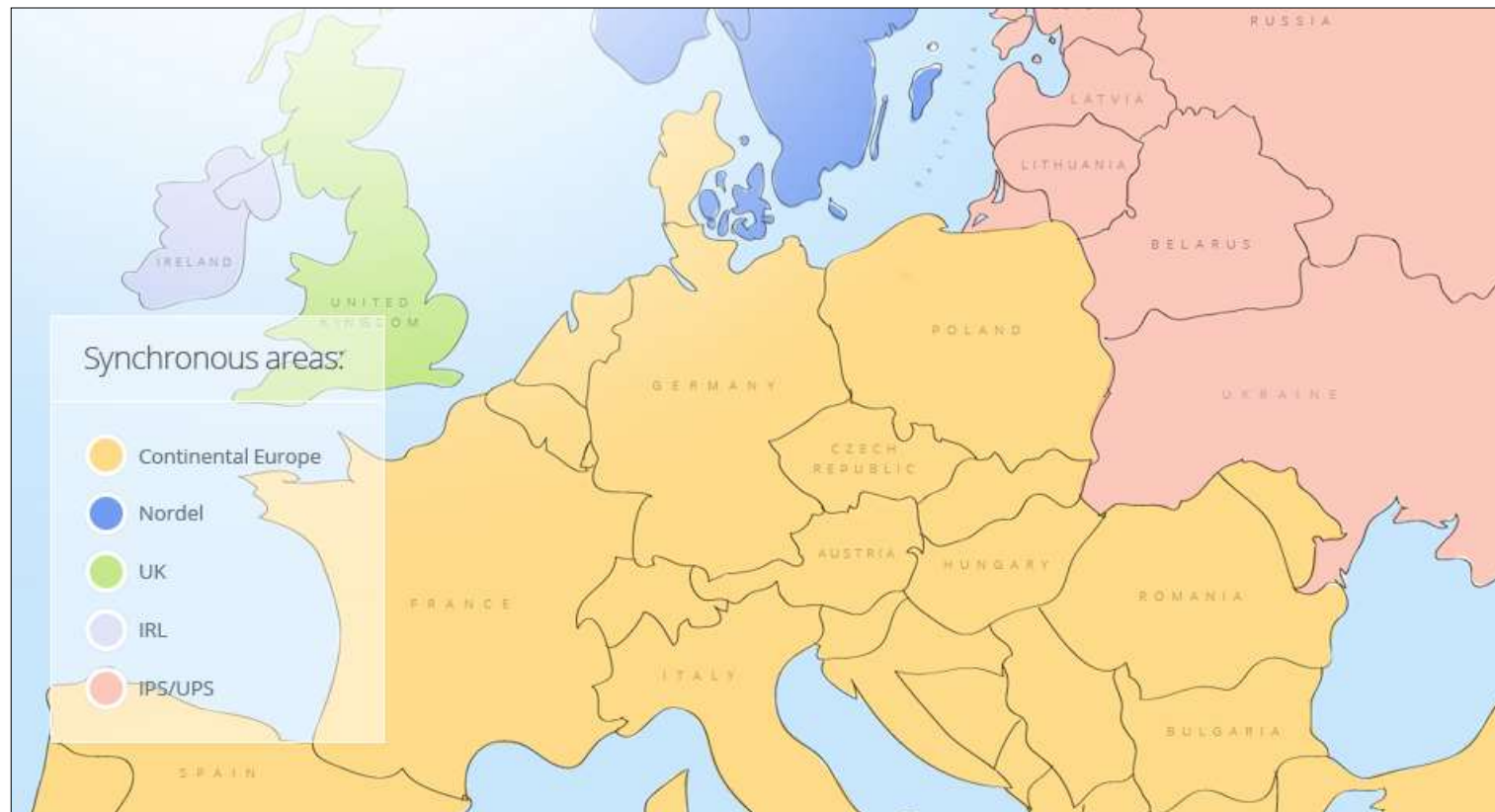
- Total length – 160 km
- Capacity (2015) – 500 MW
- Capacity (2020) – 1000 MW
- Voltage – 400 kV
- CAPEX – over 234 mln. EUR (LT share 2015 – 109 mln. EUR, EU financial support for the LT first stage – 4,4 mln. EUR)



Synchronization with Continental European Network



Goal: Baltic electricity markets integrated with European Continental Network on synchronous operations



Technically feasible

No major legal obstacles

Intensive CAPEX

EU support needed



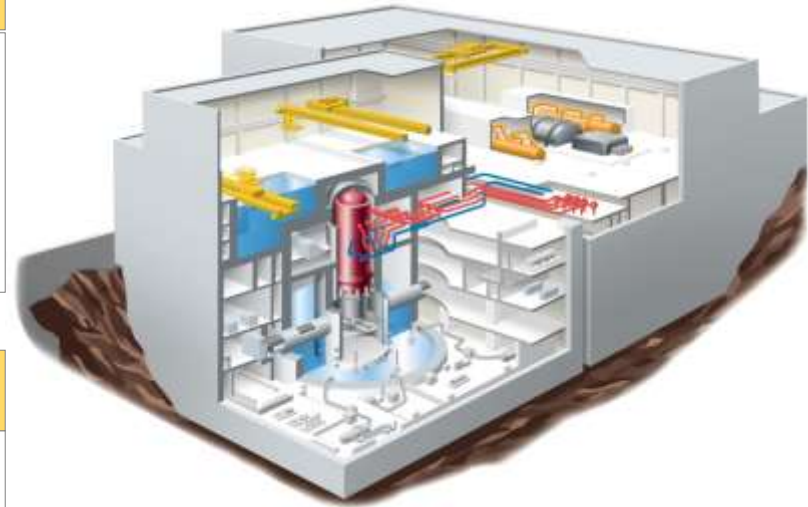


Visaginas NPP rationale

- Diversification of region's energy mix and market competitiveness
- Remove dependence on Russian electricity supply
- "Green Agenda" and region's environmental goals

Project progress

- Strategic Investor selected (Hitachi)
- Pre-development works completed (incl. site evaluation, EIA, spatial planning)
- Economic competitiveness of the project improved (Japanese export credit agencies proposals)
- Resolution of outstanding issues in progress (BCM Senior Officials Committee, investors joint meetings agreed)



Visaginas NPP capacity: 1 350 MW, 10,5 TW/y

Total price of the project, EUR: ~ 5 billion (Lithuanian share, EUR ~ 1,9 billion)

Estimated service life: 60 years

Renewable Energy Sources: Today and Tomorrow



Directive 2009/28/EC on the promotion of the use of energy from renewable sources

23%

The share of energy from renewable sources in gross final consumption of energy in 2020

10%

The share of energy from renewable sources in all modes of transport

60%

The share of energy from renewable sources in district heating

20%

The share of electricity generated from renewable sources

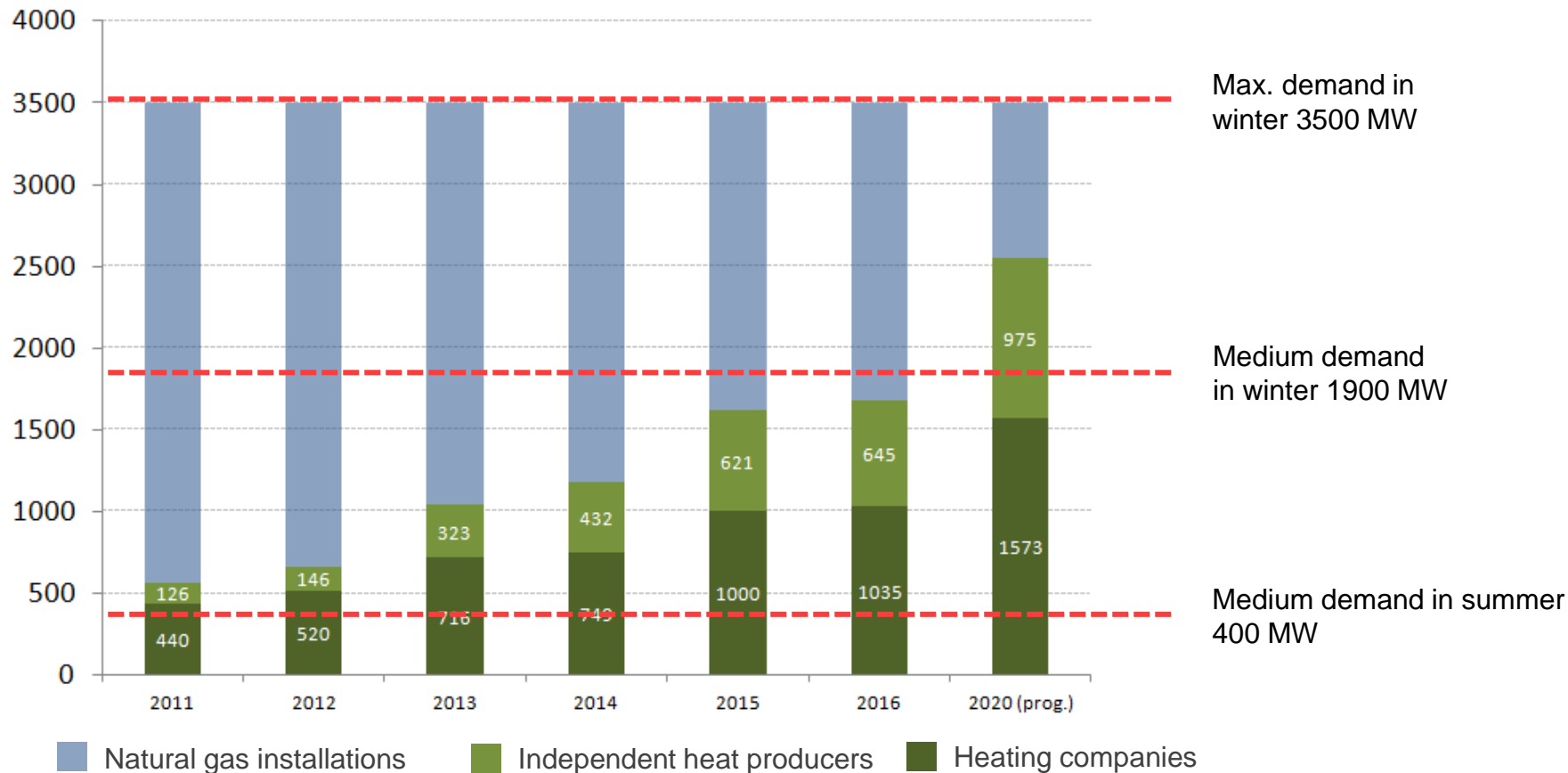
National Energy Independence Strategy of Lithuania (2012)



Biomass Revolution in Heating Sector



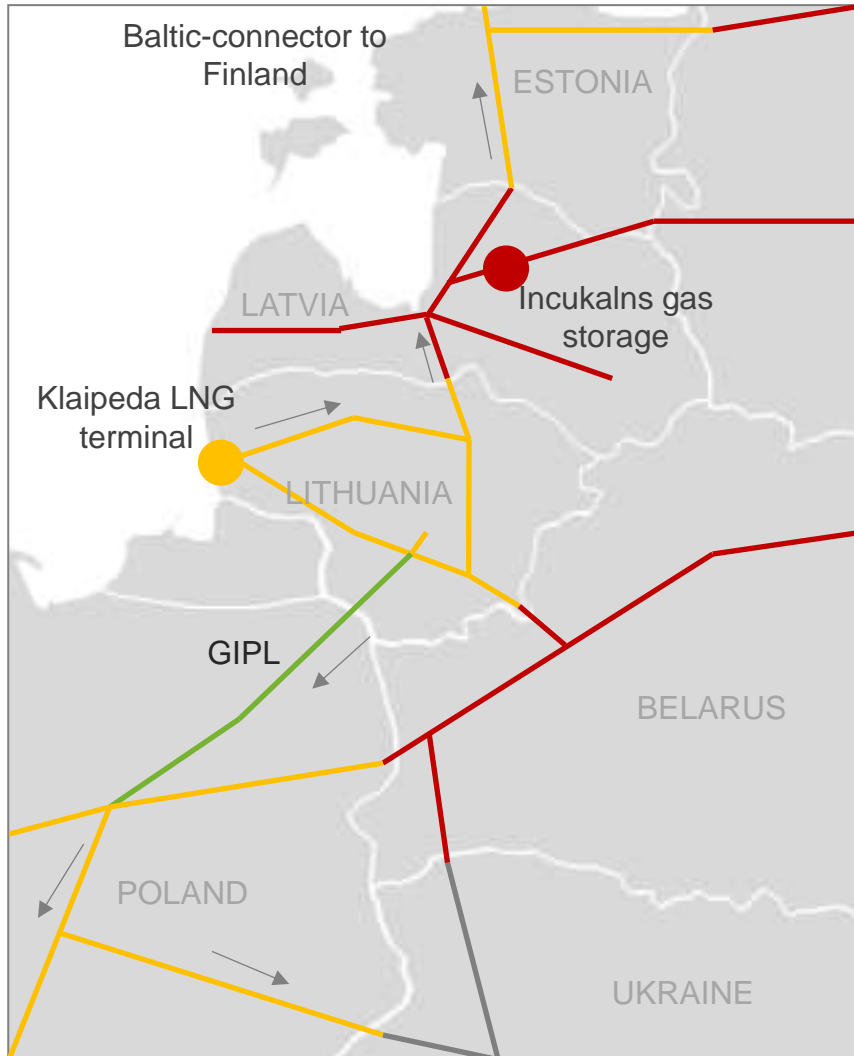
Energy mix in the district heating sector
(MW)



Completion of all currently planned projects by the end of 2020 would allow reaching the capacity level of 2500 MW and surpass the basic demand (1900 MW) in winter.



Developing a Regional Gas Market



2011	Start of 3 rd Energy Package Implementation (unbundling)
2011	Start of Klaipeda LNG terminal
2011	Start of strengthening of internal connections
2014	Completed implementation of the 3 rd Energy Package Implementation
2014	Completed implementation of the Klaipeda LNG terminal
2019	Commissioning of the GIPL

- Third Party Access infrastructure
- Infrastructure influenced by Gazprom
- GIPL (Gas interconnection Poland Lithuania)
- > Expected gas flows from Klaipeda LNG terminal



Klaipėda-Kiemėnai gas pipeline



Klaipėda-Kiemėnai gas pipeline

- Diversify gas supply sources and routes in the Baltic Region;
- Access to the global LNG market via LNG terminal in Klaipėda for all Baltic States;
- Create conditions for full exploitation of the capacity of LNG terminal in Klaipėda;
- Security and reliability of gas supplies.



Length: ~110 km, diameter: Ø800 mm

Maximum operating pressure: 5.4 MPa.

Project costs: 64 mln. EUR (EU support – 27,6 mln. EUR)

Commissioning: 2015 Q4





GIPL (2019)

- Diversification of gas supply sources, routes and counterparts;
- Contribution to the completion of the internal EU energy market;
- Potential to supply gas to Ukraine when interconnection PL-UA is in place.

Length: 534 km (177 km in Lithuania, 357 km in Poland)

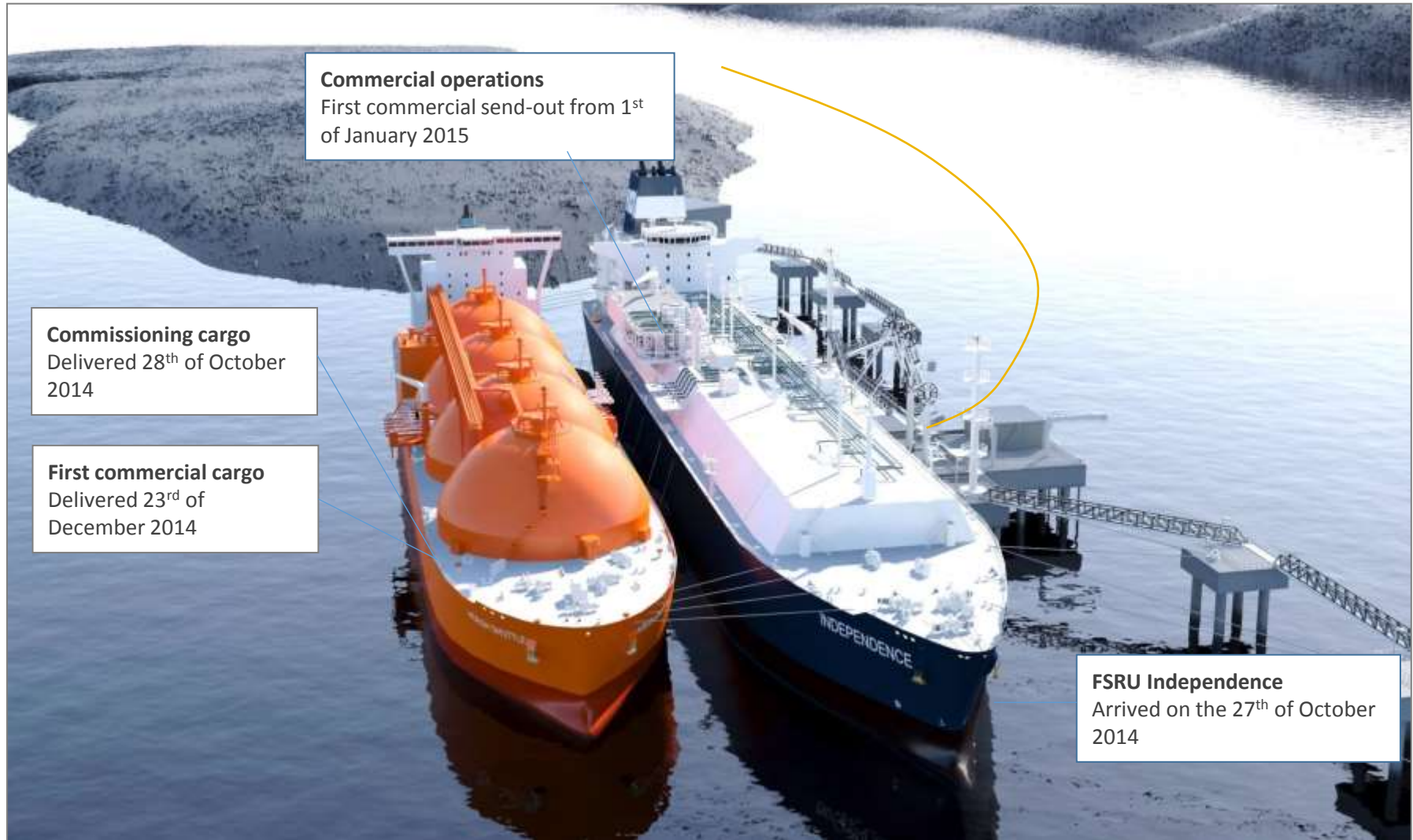
GIPL capacity: 2,4 BCM/y (bi-directional gas flow)

Commissioning: 2019

Estimated project costs – 558 mln. EUR (EU financial support – 306 mln. EUR)



LNG Terminal in Klaipeda – Game Changer in Gas Sector



Commercial operations
First commercial send-out from 1st of January 2015

Commissioning cargo
Delivered 28th of October 2014

First commercial cargo
Delivered 23rd of December 2014

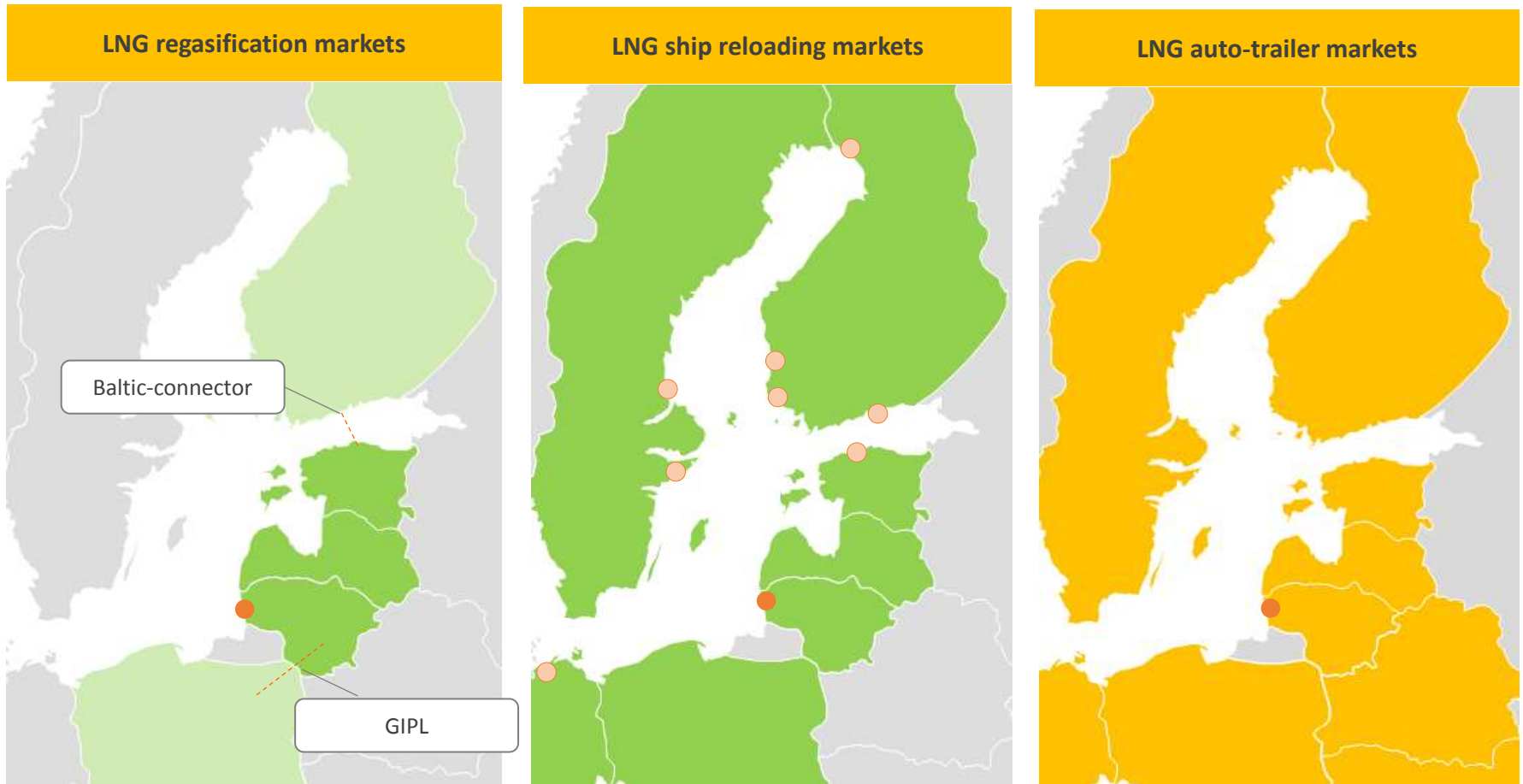
FSRU Independence
Arrived on the 27th of October 2014





FSRU Independence coming into the Port Gate in Klaipeda

LNG Terminal in Klaipeda – Game Changer in Gas Sector



- Markets accessible starting the 1st of January, 2015
- Markets accessible after regional interconnections are finished
- Markets accessible after on-shore LNG reloading station is finished

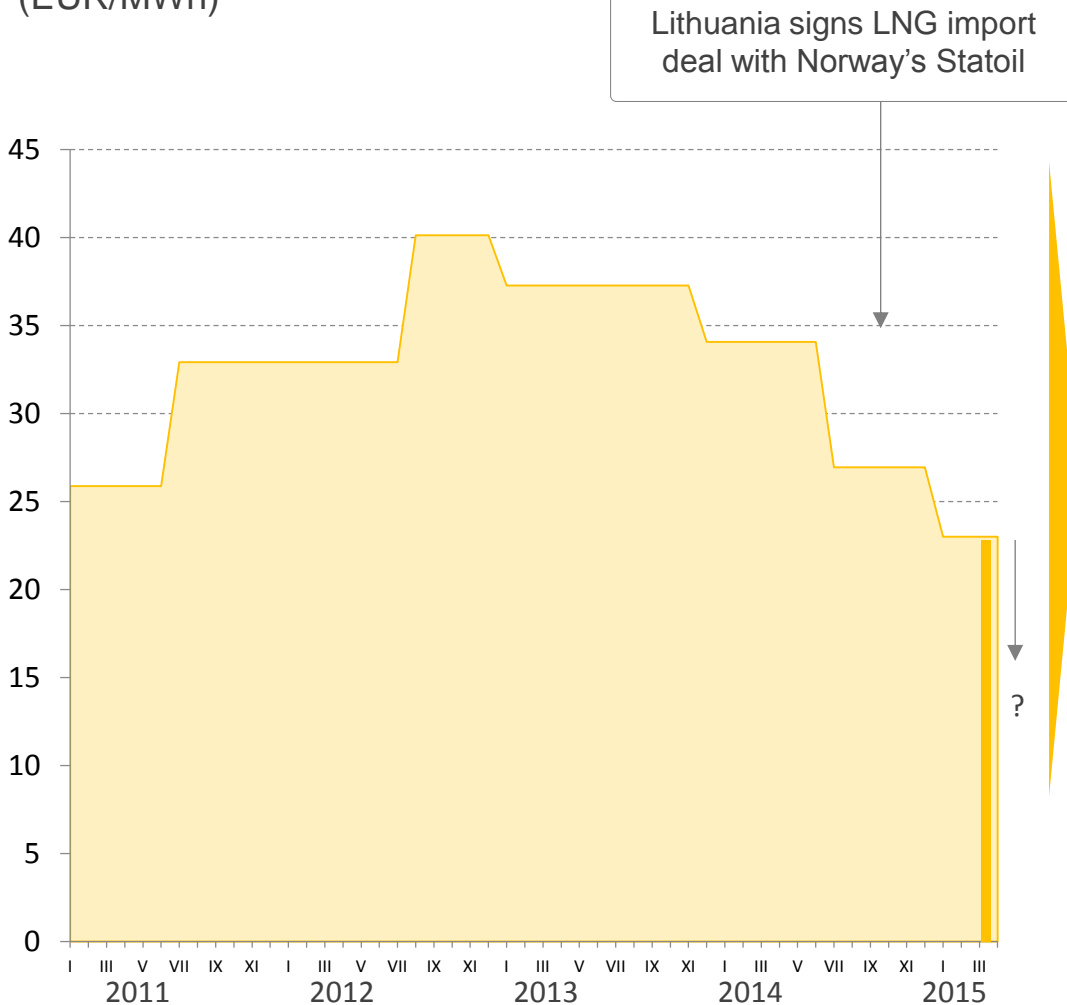
LNG terminals (5.000-30.000m³) in development



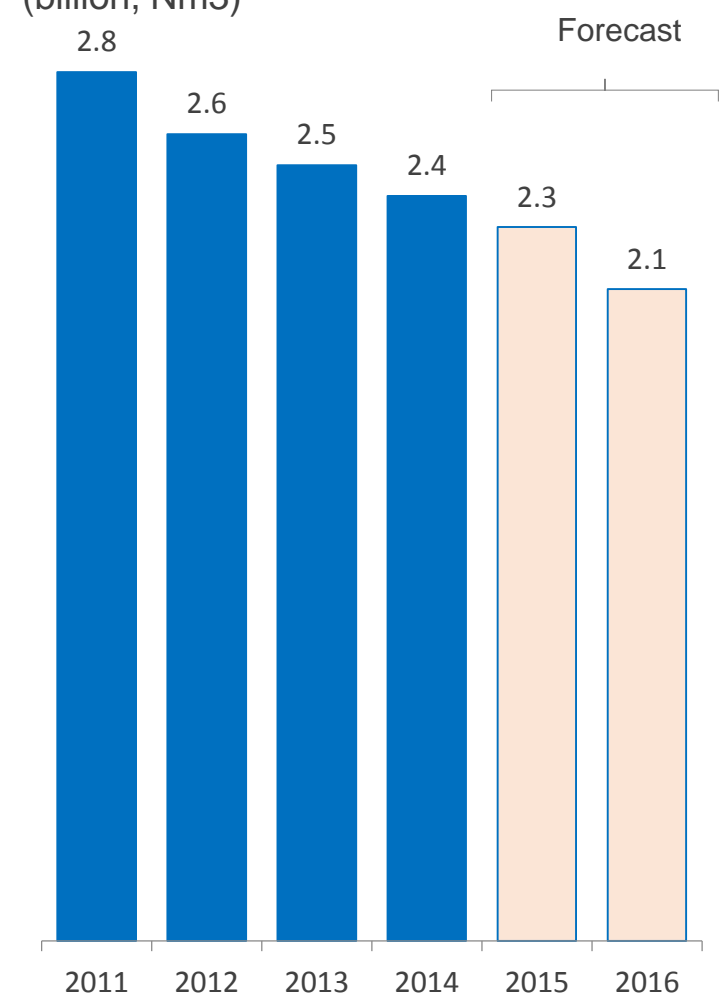
Results: Gas Price is Going Down



Gas price in Lithuania (EUR/MWh)



Gas consumption in Lithuania (billion, Nm³)





Gazprom's policy backfires:



- Europe lost trust in Gazprom
- Majority of the CEE states are seeking alternatives
- Encouraged active EU support to commercially non-viable projects
- Encouraged EU to begin establishing Energy Union
- Gazprom is forced to reconsider strategy (but it is too late)



And as a result:



- Russian gas exports to the EU in total dropped by almost ~14%
- Russian gas exports through Nord Stream dropped by more than ~50%
- Russian gas exports to Ukraine dropped by ~44%
- Russia was forced to back away from South Stream project
- Gazprom is fighting multiple antitrust cases

Conclusions: Principles of Successful Energy Policy



- ✓ State as a “driving hand” in the energy sector
- ✓ Proactive approach to energy affairs
- ✓ Strong energy policy, strong nation





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