BALTIC PORTS ORGANIZATION

Terminal LNG in Poland

Klaipeda, 23 April 2015
In Place of a Foreword

First and foremost, we would like to thank the hosts and organizers of today's meeting for inviting Polskie LNG S.A. to participate in this edition of Baltic Ports LNG Forum, and to assure that the subject of this session is of particular interest to our company by reason of its relevance for the LNG Regasification Terminal in Świnoujście, Poland, as well as in view of its expansion and planned introduction of a number of additional services.

Therefore, we deeply regret that despite all the efforts made, and due to the number of actions currently undertaken in order to put the terminal on stream as soon as possible, the representatives of Polskie LNG company were unable to participate personally in this event of particular significance for the development of the LNG market.

Furthermore, these days a working meeting of Polskie LNG and an affiliate of GDF Suez Group is taking place, appointed to perform a multi-criteria Feasibility Study for the expansion of the LNG terminal in Świnoujście including regasification services, as well as bunkering and reloading.

In recognition of the significance of this Forum together with its subject and our respect for all its Participants, by courtesy of the organizers Polskie LNG would like to present some information on the LNG Terminal in Świnoujście - currently being at the final stage of construction process - as well as the needs and prospects for LNG market development in the Baltic Sea region.

We trust that this debate will prove fruitful for organizers and all the participants.
LNG Terminal in Świnoujście

LNG Terminal is a facility designed to receive and regasify liquefied natural gas

- One of the largest and most significant infrastructure projects with the objective to improve Poland’s energy security.

- Recognized by the Poland’s Council of Ministers as strategic for Polish economy.

- Allows to receive natural gas delivered by sea from almost every direction in the world and providing actual diversification of gas supply sources.

- Situated in Świnoujście, covering the total area of 48 hectares, with onshore part approx. 750 m away from the coastline.
Project partners

**GAZ-SYSTEM S.A.** – coordination of the entire LNG Terminal Project; co-funding and future operation of the connecting and transmission pipelines.

**Polskie LNG S.A.** – construction of the onshore facilities of the LNG Terminal in Świnoujście.

**Szczecin Maritime Office** - construction and maintenance of the breakwater and maritime port infrastructure including the new breakwater.

**Szczecin and Świnoujście Seaports Authority** – construction of port’s infrastructure including the berthing station.
Status of works

- Construction design
- Decisions and permits
- Agreements with contractors
- Financing and insurance
- Environmental issues
- Construction site preparation
- Construction
- Mounting the systems and equipment
- Testing and commissioning

First LNG carriers are expected to arrive at LNG Terminal in Świnoujście in 2015
The Świnoujście LNG Terminal will accommodate methane carriers ranging from 120,000 m³ to 216,000 m³ capacity. The unloading station has been designed to handle the Q FLEX type of methane carriers as a target carrier.

- **Capacity**: 216,000 m³ LNG,
- **Total length**: 315 m,
- **Total width**: 50 m,
- **LNG loaded ship’s draught**: up to 12.5 m.

**Ships facilities**:
- 4 unloading arms
- **Speed of unloading**: $3 \times 4 = 12,000$ m³/h
### Technical specification - Terminal

**Capacity**
- Initial capacity - 5 bln m³/year
- Target capacity - 7.5 bln m³/year

**Storage**
- Two LNG storage tanks of 320 thousand m³ combined capacity.
- „Full containment” tank type, of the following dimensions:
  - height - 40m, diameter - 80m.

**Connection**
- Pressure 8.4 MPa.
- Temperature 1°C.
- Throughput: 75 – 570 thousand m³/h.
- Nominal throughput: 856 thousand m³/h.

**Reloading LNG to tank trucks**
- Two reloading stations and one spare station.
- Station’s throughput – 90 m³/h.
- Minimal annual capacity - 95 000 tonnes.

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Świnoujście LNG Terminal model

1. Breakwater
2. External port
3. Unloading platform
4. Process platform
5. LNG terminal
European LNG Training Centre

Polskie LNG and Maritime University of Szczecin signed an agreement establishing The European LNG Training Centre

- third institution of this kind in Europe
- the most modern training centre (4 top-of-the-range simulators)

Polish training centre providing competencies recognized worldwide
Energy security vs. Capacity of import terminals’

Source: Eurostat, ENI, GIIGNL, 2013
Excluding pipeline import from external suppliers

### Europe with Ukraine

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<tr>
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<th>Europe</th>
<th>Ukraine</th>
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<tbody>
<tr>
<td>Gas Consumption in the area</td>
<td>444</td>
<td>493</td>
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<tr>
<td>Gas Production in the area</td>
<td>253</td>
<td>271</td>
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<tr>
<td>Gas Demand in the area (D = C – P)</td>
<td>191</td>
<td>222</td>
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<tr>
<td>Total capacity of terminals in the area</td>
<td>194</td>
<td>194</td>
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<tr>
<td>Total terminal capacity accommodates regional gas demand</td>
<td>102%</td>
<td>87%</td>
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</table>
Energy security vs. Capacity of import terminals’

Excluding pipeline import from external suppliers

Source: Eurostat, ENI, GIIGNL, 2013
Energy security vs. Capacity of import terminals’

Excluding pipeline import from external suppliers

Source: Eurostat, ENI, GIIGNL, 2013
Prerequisites of Terminal functionality development

LNG fuel demand – forecast:

in 2030 – approx. 4.5 bcm (SECA); 3.2 bcm (Baltic Sea and outside); 1.6 bcm (Baltic Sea only)

Conclusion:

Central and Eastern Europe and Baltic Region need additional gas infrastructure

Projects undertaken:

- North-South gas corridor
- Gas connection between Poland and Lithuania
- Small import terminals and LNG bunkering stations
- Gas HUB in Central and Eastern Europe and Baltic Region including a large LNG terminal providing regasification and reloading services.
Świnoujście LNG Terminal
Progress Status and Potential for Development

- Loading station space
- Space for the 3rd tank
- Tank truck loading station
- Railway line
Reloading services at the LNG terminal and their possible application

Currently there are 3 tank truck reloading stations under construction at the LNG Terminal in Świnoujście

Primary provision of LNG to the regions not covered by gas transmission pipeline grid and LNG as a fuel for transportation
LNG market development in Poland

• The areas of low gas transmission network coverage and significant growth potential:
  - liquefaction facility in Odolanów,
  - supplies from abroad (Zeebrugge)
  - development of liquefaction facilities adjacent to gas extraction plant.
• Small-scale re-gasification plants.
• Small-scale LNG storage tanks.
• Alternative heat sources (e.g. CCGT).
Polish LNG conducted the Market Screening procedure covering:

1. Increased regasification capacity
2. Reloading LNG on tank trucks
3. Reloading LNG on rail tankers
4. LNG bunkering
5. Reloading LNG on smaller ships
6. LNG storage services

Market Screening was conducted from 10-07-2012 to 11-01-2013 and involved:

- Announcements in national and foreign press – specialist gas industry magazines and most popular broadsheet daily press
- E-mail announcements sent to approx. 240 recipients
- The Market Screening procedure covered:
  - companies operating on the territory of Poland
  - 200 companies, organizations and associations operating in 22 countries in Europe

The findings from Market Screening are promising!
Efforts to develop the functionality of LNG Terminal

Polskie LNG conducts detailed analyses of demand and profitability of investing in new functionalities of the LNG Terminal.

Based on the results of the analyses, and in view of the European LNG market development potential - particularly in the Baltic Sea Region - Polskie LNG company decided to pursue its activities.

On 8 April 2015 Polskie LNG signed a contract with Tractebel Engineering SA (GDF Suez Group) for the performance of multiple-criteria Feasibility Study for the expansion of the LNG terminal in Świnoujście.
Poland’s experience in LNG

First Polish hybrid drive methane carrier

Cryogenic tank made in Poland

LNG-fuelled ferry constructed in „Remontowa” shipyard in Gdańsk

LNG-powered city bus made in Poland
Thank you for your attention

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