Baltic Pipe
Polish diversification project

Oil & Gas Department

Based on materials from PGNiG S.A.

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MINISTRY OF ECONOMY – REPUBLIC OF POLAND

Risk of Dependency

- Dependency on one supplier only, creates a high risk in every business

- In such cases, there is no alternative if supplies are disrupted

- There might be several reasons for the disruption of gas supplies,
  e.g. force majeure (terrorism, cataclysm) or politics (as a tool, on purpose)

- Diversification is the best way to reduce this risk or to take it in to many pieces

How to reduce dependency

Interconnections with other systems

If the other country wants to have connection with you…

LNG Market

If you have access to sea…

Diversification

Development of the own production

If you have any own gas fields…

Building of new pipelines

Huge capital expenditures…

Polish Statutory Requirements for Diversification

- 24th of October 2000: Polish Government declares maximal percentage values of total gas supply from one country:
  - 72% for years 2005 – 2009
  - 70% for years 2010 – 2014
  - 59% for years 2015 – 2018
  - 49% for years 2019 – 2020
- Currently, about 30% of demand is covered by domestic production
- The rest of the natural gas demand is covered by import: from Russia (about 68% of imported gas), Central Asia (24%) and Western Europe (8%)

A new independent source of supply will allow to fulfil the Government requirements also in the future

Key assumptions of the PGNiG diversification strategy

PGNiG's ways to reduce dependency of supplies:

Diversification of gas suppliers and transport channels

- PGNiG intends to secure new gas import routes from 2011
- Two complementary projects:
  - pipeline from NCS
  - LNG Terminal

Development of the exploration and production business

- Increasing the Company's independence from external suppliers
- International expansion
- Acquisition of Skarv/Snadd fields

Diversification Projects

- PGNiG's future diversification projects:

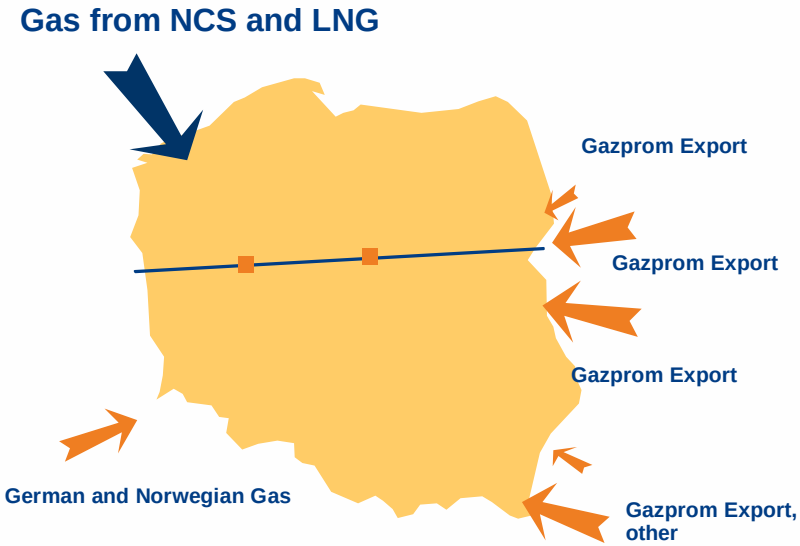
  - *Development of own production,*
  - *LNG supplies to the Regasification Terminal in Świnoujście,*
  - *Connection to NCS (Baltic Pipe -> Skanled),*

  will allow company to have once and for all diversified, secured gas supplies

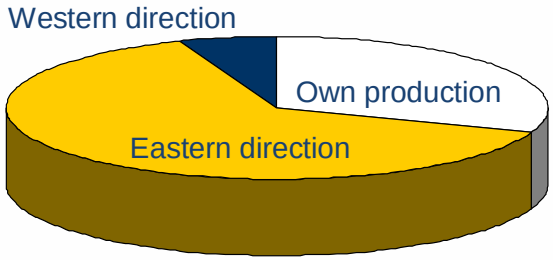
Diversification of Gas Supplies and Transport Routes

Diversification assumptions

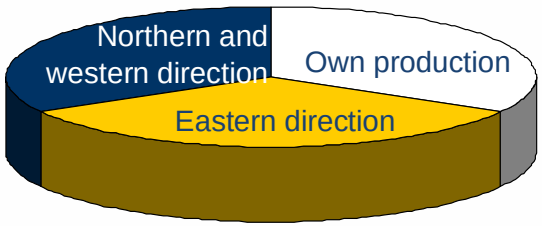
- To increase the level of supply security
- To avoid disruptions in gas supplies
- To decrease the dependency on one supply direction (current level of dependency - 64%)
- To enable higher import gas volumes (current entry points are overbooked and market is growing)
- To balance the sources of gas supply



Current sources of gas



Optimal sources of gas



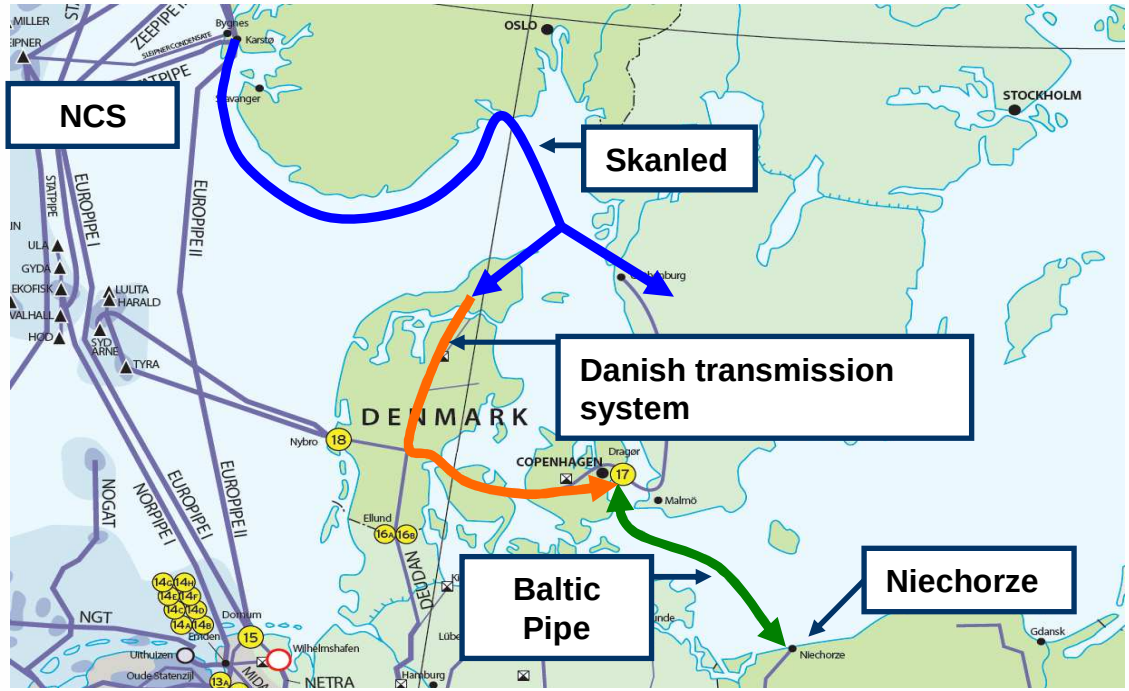
Diversification of Gas Supplies and Transport Routes

- PGNiG's diversification of gas supplies and transport routes consist of two complementary elements: construction of LNG terminal on Polish coast and securement of routes for import of gas from the NCS to Poland.
- Gas from NCS will be delivered from PGNiG's fields as well as from other producers. The first step of securing gas sources was the acquisition of 12% interest in the Skarv/Snadd/Idun fields licenses.
- The gas will be transported via Skanled pipeline that is planned to connect an exit point of Gassled System (Kårstø) with eastern Norway, western Sweden and Denmark. PGNiG is participating in Skanled Project Consortium.
- From Skanled landfall gas will be transferred through Danish gas transmission system to Baltic Pipe entry point and further on to Poland (Niechorze Terminal).
- Baltic Pipe will be an offshore pipeline (with a possibility of reverse flow) connecting Danish and Polish gas systems.
- Simultaneously PGNiG and Gaz-System (Polish TSO) are planning to expand Polish gas transmission system.

Gas pipeline connecting Poland and NCS

The business concept currently implemented by PGNiG consists of four elements:

- Securing gas supply sources on the Norwegian Continental Shelf (NCS) both from the fields acquired by PGNiG and contracts for gas purchase from other gas producers on the NCS
- Securing gas transportation from the Norwegian transmission system to Denmark through the SKANLED pipeline,



- Securing the gas transportation through the Danish transmission system through cooperation with Energinet.dk,
- Construction of the Baltic Pipe offshore pipeline in cooperation with Energinet.dk.

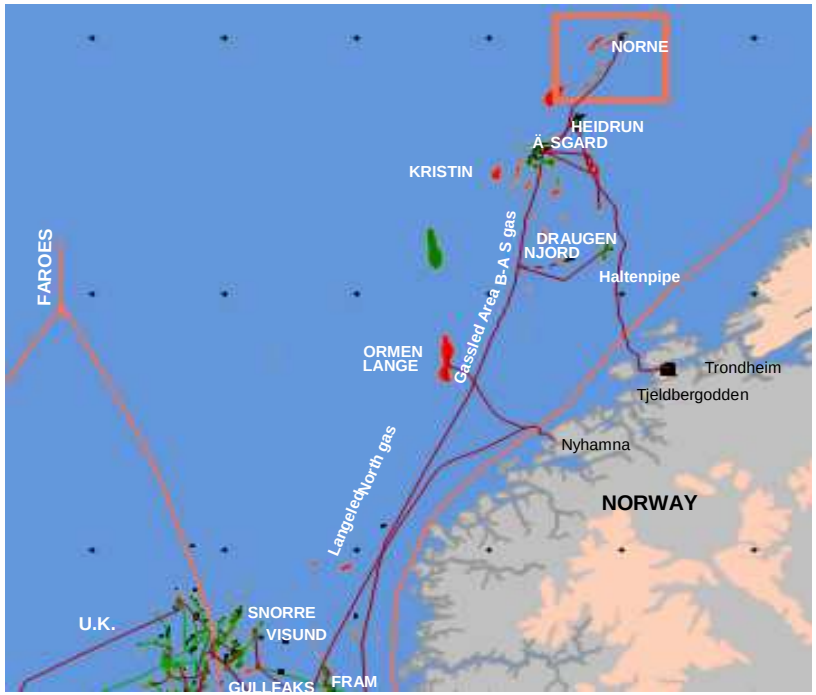
Licenses acquisition on NCS

Since February 2007 PGNiG has been an owner of 12% interest in the NCS licenses containing the Skarv, Snadd and Idun fields.

Fields are planned to be in operation in 2012.

Skarv-Idun Area was discovered in 1998 and is one of the largest discoveries in Norway to be developed.

The acquisition of the Skarv/Snadd field is the first element of the combined project that will secure new gas transport route from the NCS to Poland as well as way of creating new trading possibilities for PGNiG.



Skanled project

PGNiG SA joined to and acquired free of charge 15% interest in the Consortium led by Gassco, which develops the SKANLED gas pipeline from Kårstø in Norway to Sweden and Denmark.

Technical parameters of the SKANLED project:

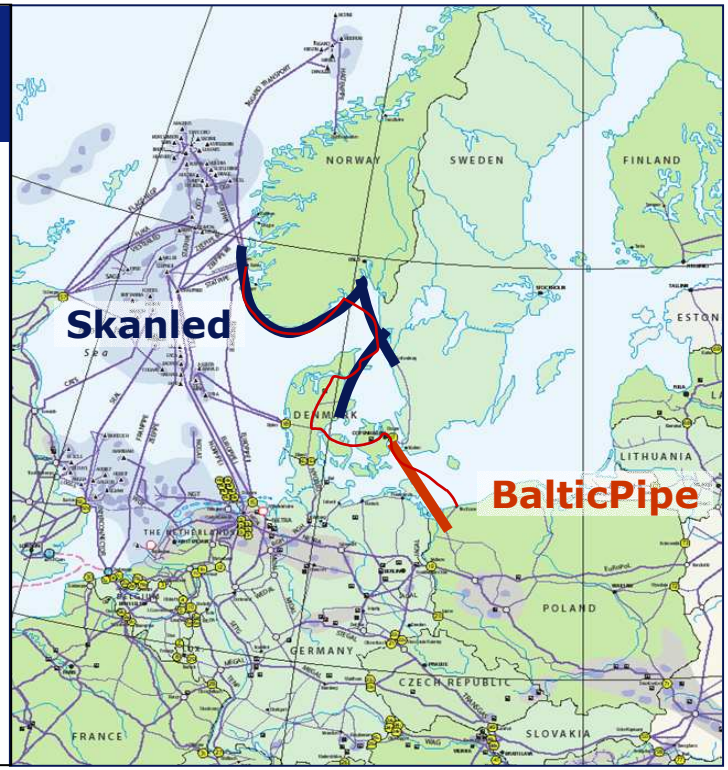
- The gas pipeline will run from the facility in Kårstø (the only entry point), where it will be connected with the Europipe II transmission grid
- Currently, there are five exit points planned: Rafnes (Norway), Lysekil, Vallby Kile, Bua (Sweden), Jutland (Denmark)
- In addition, transportation of ethane along Kårstø – Rafnes section is planned.

Idea of engaging into Baltic Pipe project

- Project includes creating interconnection system between Polish and Danish transportation systems
- Polish gas demand forecast shows that there will be an increasing demand level, both in middle and long term perspective, execution of BP project tends to compensate the market by ensuring particular gas volume

Basic rationale of Baltic Pipe project involvement

- Satisfying increased gas demand in Poland
- Increasing level of energy safety of Poland
- Diversification of gas transport routes to Poland
- Improvement of flexibility of Polish and Danish gas markets as well as security of supply due to diversified supply portfolio.
- Creation of new trading possibilities (due to reverse flow)



Basic info about Baltic Pipe project

- Depending on chosen landfall, planned length of pipelines is 230 or 280 kilometers.
- Gas pipeline will go through Danish and Polish territorial waters although most of it will be situated on international waters
- Around 3 BCM is about to be delivered Annually to Poland through Baltic Pipe
- Danish party is very interested in possibility of gas supplies in two directions which may result in gas export from Poland to Denmark

Technical details concerning Baltic Pipe project

Basic Elements of Baltic Pipe Project

- GC on Danish territory to ensure appropriate gas pressure at the gas pipe inlet in Poland,
- Discharge valve of the stations with land pipe on Danish territory to the landfall of subsea pipe,
- Subsea gas pipeline,
- Discharge valve of the stations with land pipe to receiving terminal in Poland,
- Receiving terminal along with installation of gas conversion to fit Polish Transmission,
- GC in terminal zone on Polish side if required to ensure proper pressure for gas supplies to Denmark,
- Land gas pipe connecting receiving terminal with Polish Transmission System.

Baltic Pipe Project basic time schedule

Investment preparation phase | **Investment starting up phase** | **Investment execution and operating phase**

Project Identification

- Gas market analysis and possible solutions
- Preliminary technical analysis
- Preliminary economical analysis

Feasibility Study

- Work of technical working teams
- B-P assumptions update
- Preparing of Technical, economical and organizational report

Concept Selection

- Arranging the source of gas supply
- Business model preparation
- Identification of needs in field of transmission systems development
- Signing Cooperation Agreement with ENDK and Gas-System

Designing Phase

- Signing Agreement with General Constructor
- Designing
- Obtaining environmental consents for construction of the pipeline (process starting up in phase II could last till VI 2009)
- Obtaining construction consents
- B-P assumptions update

Investment Execution

- Pipeline construction
- End of Danish transmission system development
- Building the Terminal in Niechorze

Operating phase

Signing LoI

Approval of technical, economical and organizational report

Start of designing work

Obtaining construction permit

Planed pipeline operating start-up

Baltic Pipe Project Milestones - Plan

Singing Letter of Intent	April 2007
Approval of technical, economical and organizational reports	October 2007
Start of detailed engineering	May 2008
Obtaining building permission	December 2009
Start of construction works	December 2009
Gas filling	November 2010

Investment expenditure

- Estimated cost of the Baltic Pipe Project ranges from 300 to 350 million of Euro in the basic option and can be higher assuming possibility of gas supplies in both directions, also from Poland to Denmark,

- In 2008 it is planned to prepare technical documentation and to perform process of acquiring environmental approvals on pipeline construction. Biggest expenditures are planned for years 2009-2010,

- PGNiG is going to be sole investor in Baltic Pipe project,

- Optimal financial structure of the Baltic Pipe project will be chosen in the adequate phases of project.

State Companies

All of key players engaged in the Project are the state owned companies

PGNiG – 85%

The State Treasury is the dominant shareholder of company, as of 23 September 2005 (the first day of quotation on Warsaw Stock Exchange) it owns 84,75% shares.

Gaz-System – 100%

The State Treasury is the only shareholder of the company.

Energinet.dk – 100%

The Danish Minister of Climate and Energy is the sole owner of Energinet.dk

Project organization structure

1) PGNiG will act as sole investor in Baltic Pipe project.

2) PGNiG cooperates with Gaz-System – Polish Transmission System Operator and with Energinet.Dk.

3) During starting up phase three companies will conduct jointly technical analysis and develop terms of future cooperation.

4) During execution phase PGNiG will construct Baltic Pipe and ENDK and Gaz-System will expand accordingly Danish and Polish transmission system

5) In the operating phase Gaz-System will act as operator of Baltic Pipe. Gas pipe will be incorporated to the PTS.

Signed Agreements

In November 2007 Energinet.dk (Danish Transmission System Operator for Electricity and Natural Gas), PGNiG S.A. and OGP GAZ-SYSTEM S.A. (Polish Transmission System Operator), signed Cooperation Agreement, which was the next step towards implementing of Baltic Pipe project (Trilateral Agreement). These agreement was a natural consequence of the letter of intent signed by Energinet.dk and PGNiG in April 2007 concerning the construction of the Baltic Pipe.

Baltic Pipe project priorities

- The main purpose of Baltic Pipe project is to increase security of gas supplies to Poland, therefore all applied solutions will be aimed on ensuring uninterrupted possibility of transporting gas.

- Possibility of transporting gas in both directions (as pipeline design allow for reverse flow) will also improve security of gas supplies to Denmark.

ECT priorities compliance

- Baltic Pipe will allow transferring gas without distinction as to origin, destination and ownership of gas. Possibility of transporting gas in both directions will create new trading possibilities for gas market players present in Denmark and Poland,

- Access to the transportation system will be based on non-discriminating rules,

- Rules for pipeline access (including definition of available capacity) will be defined in future and will be in compliance with Polish and EU regulations. Rules will be developed following EU directive 2003/55/WE where applicable,

- Rules for pipeline access will be agreed among all three key player engaged in the project that are: PGNiG S.A., Energinet.dk and Gaz-System.

ECT priorities compliance

- Operator of Baltic Pipe (Gaz-System) will define tariffs in future, compliant with Polish and EU regulations.

- Rules and procedures for construction will be developed in adequate phases of the Baltic Pipe project. They will be developed both by a General Contractor and PGNiG S.A. compliant with applicable regulations.

- Rules and procedures for modification, expansion, modernization and/or operation of facilities will all be defined in cooperation among PGNiG S.A., Energinet.dk and Gaz-System.

Other issues

- Project implementation will proceed according to Polish and EU regulations in terms of Environmental Protection.
  Environmental Impact Assessment Report is to be prepared and international ESPOO consultation process will be carried out according to Espoo Convention

- In fields of accounting, technical, health, safety and social issues Polish (and Danish where applicable) standards will be applied. Where possible introduction of international standards will be considered.

- Investment protection measures will be defined in the future.

- Polish and Danish tax regulations will apply.

- No dedicated for Baltic Pipe project dispute settlement mechanisms (state-to-state and state-to-investor) were agreed.