

DEVELOPMENT PLANS FOR GAS-SYSTEM S.A. NATIONAL TEN-YEAR NETWORK DEVELOPMENT PLAN (TYNDP 2020-2029)

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Department



GAZ-SYSTEM KEY FACTS

GAZ-SYSTEM



Certified operator of the national infrastructure and the Yamal gas pipeline (ISO)



Enterprise of strategic importance for the economy and energy security of Poland



Operator actively taking measures for the integration and development of the regional gas market



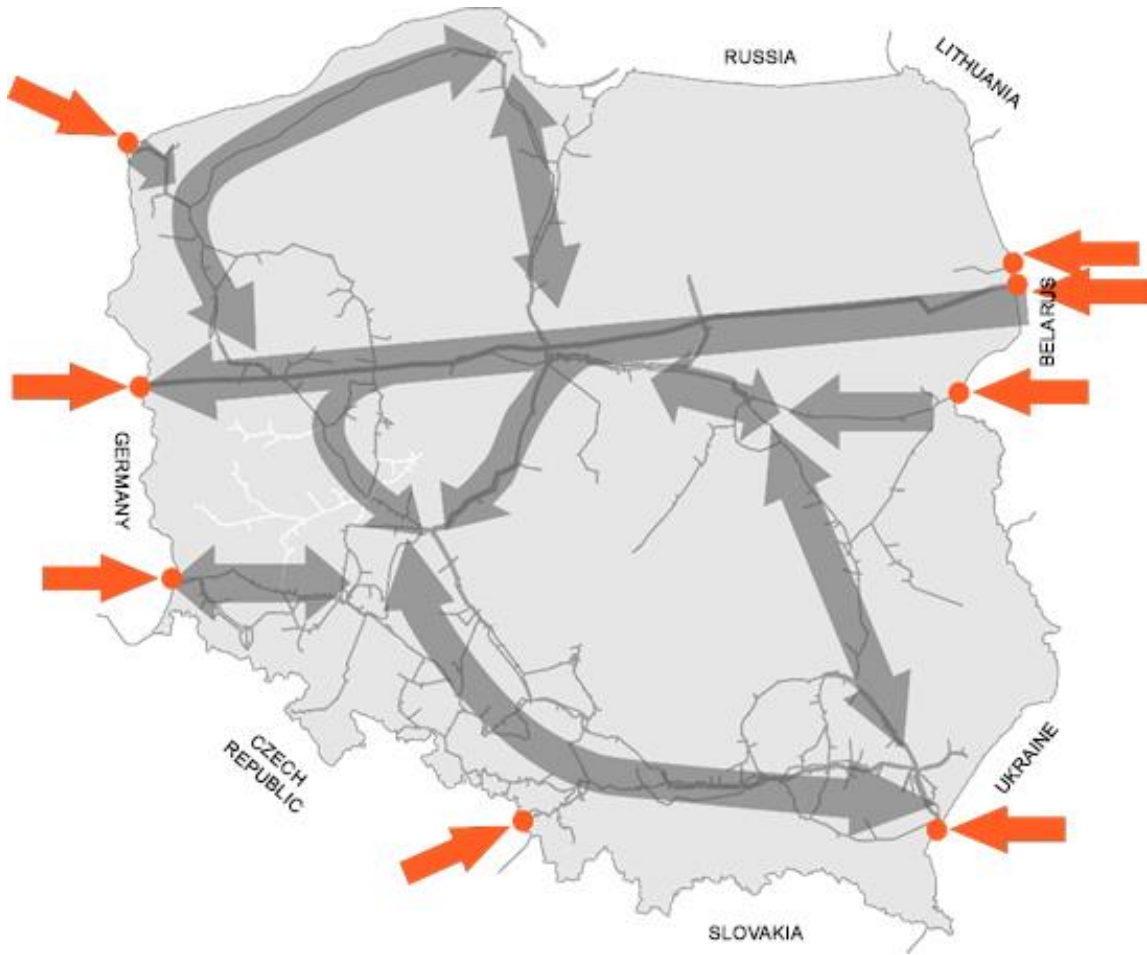
LNG terminal in Świnoujście operated by a subsidiary Polskie LNG



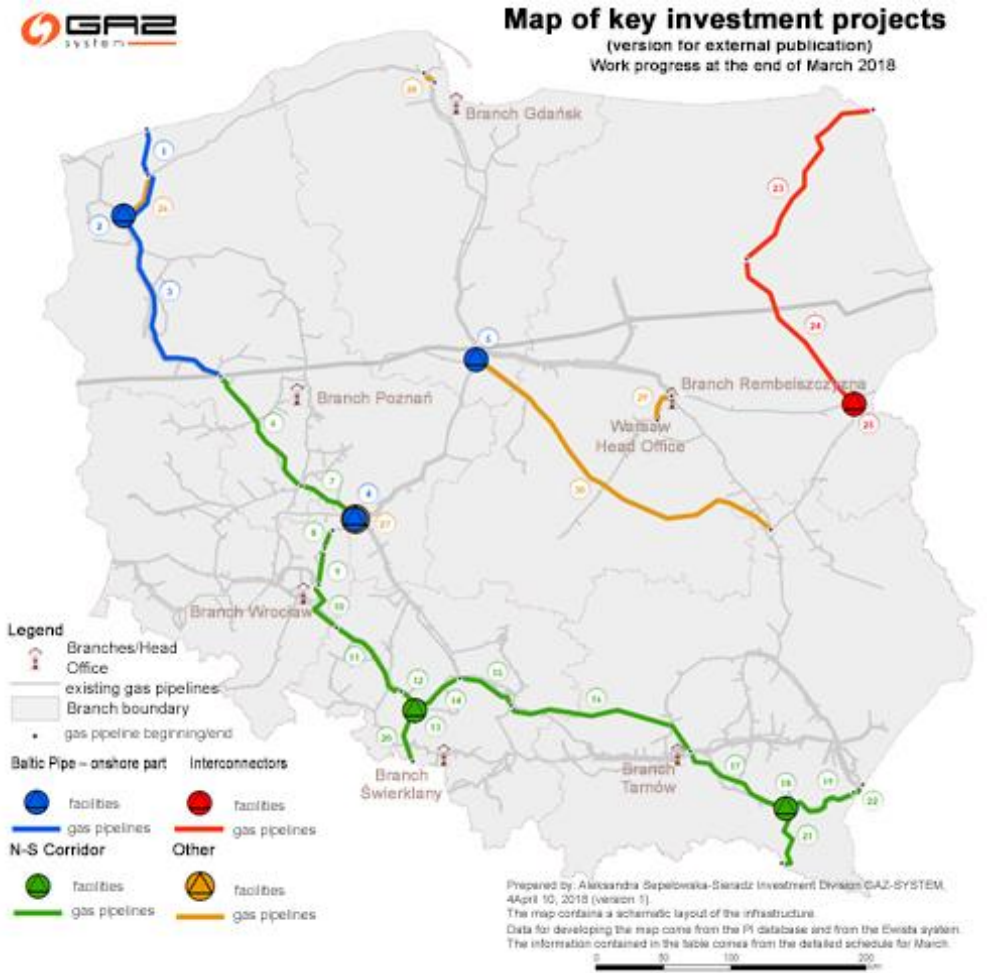
Infrastructure development allowing access to clean and low-emission energy sources such as natural gas and LNG

TRANSMISSION SYSTEM

Main transmission lines



Map of key investments – the perspective to 2022



INFRASTRUCTURE AND ITS DEVELOPMENT

NEW INTERCONNECTIONS

BALTIC PIPE:

- ▶ **Capacity:** NO→ PL up to 10 bcm/y
- ▶ **Project's role:** interconnection of the Poland's transmission system with natural gas deposits in Norway

LNG TERMINAL IN ŚWINOUJŚCIE:

- ▶ **Capacity:** 7.5 bcm/y
- ▶ **Project's role:** to provide access to the global LNG market, small scale services

CONNECTION POLAND-UKRAINE:

- ▶ **Capacity:** PL→UA 5 bcm/y, UA → PL: 5 bcm/y
- ▶ **Project's role:** to connect the transmission system of Poland and Ukraine to enable the diversification of supply sources for Ukraine and integrate transmission systems and gas markets in Eastern Europe

CONNECTION POLAND-CZECH REPUBLIC*:

- ▶ **Capacity:** PL→CZ 5 bcm/y, CZ → PL 6.5 bcm/y
- ▶ **Project's role:** to integrate gas markets in the region by creating a large supply corridor between the two countries

CONNECTION POLAND-SLOVAKIA:

- ▶ **Capacity:** PL → SK 4.7 bcm/y, SK → PL 5.7 bcm/y
- ▶ **Project's role:** to integrate gas markets in the region by creating a large supply corridor between the two countries

CONNECTION POLAND-LITHUANIA:

- ▶ **Capacity:** PL → LT 2.4 bcm/y, LT → PL 1.9 bcm/y
- ▶ **Project's role:** to integrate gas islands in the Eastern Baltic region, to diversify supplies

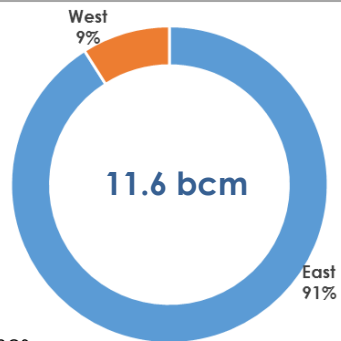
* No FID deadline, planned project completion date after 2022



INFRASTRUCTURE AND ITS DEVELOPMENT

EXPANSION OF INFRASTRUCTURE IN 2009-2022

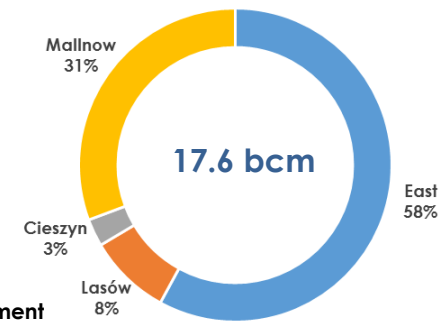
Gas transmission system 2009 Technical importing capacity



Before the Russian-Ukrainian crisis

- A small coverage of high pressure gas pipelines
- No alternative sources of supply
- A large degree of dependence on suppliers from the East
- A need to change the situation

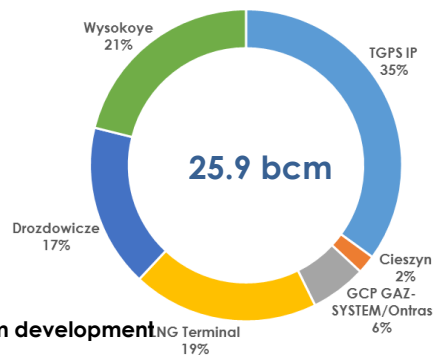
Gas transmission system 2015 Technical importing capacity



The first effects of the transmission system development

- Interconnection Poland-Czech Republic I (Cieszyn)
 - Expansion of the interconnection Poland-Germany
 - Physical reverse on the Yamal pipeline (SGT)
- Increasing the possibility of obtaining gas from alternative directions to approximately 42%

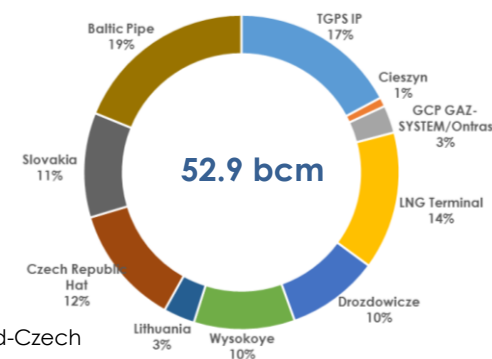
Gas transmission system 2018 Technical importing capacity



Next stage of the transmission system development

- Launch of the LNG terminal
- Increasing the possibility of obtaining gas from alternative directions to approximately 55%

Gas transmission system 2022 Technical importing capacity



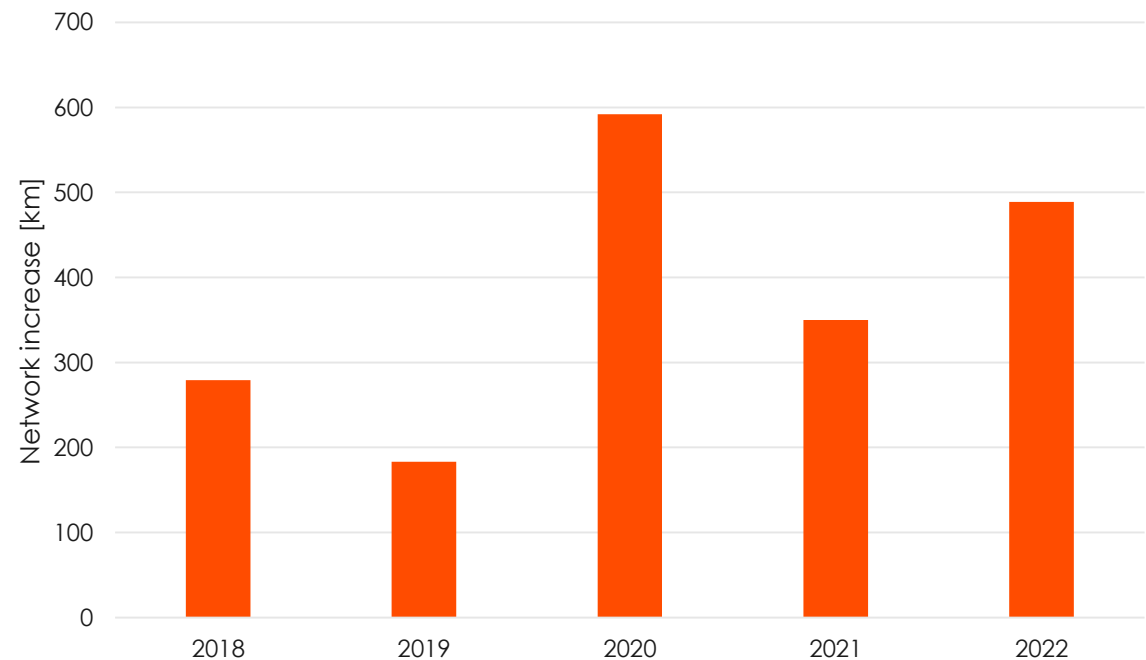
Completion of the North-South Corridor

- Construction of the interconnection Poland-Czech Republic II (Hat)*
 - Construction of the interconnection Poland-Slovakia
 - Construction of the interconnection Poland-Lithuania
 - Construction of the interconnection Poland-Ukraine
 - Construction of the Baltic Pipe
 - Expansion of the LNG terminal
- Full integration with neighboring countries, providing access to many sources of gas

INCREASE OF THE TRANSMISSION NETWORK

- GAZ-SYSTEM has built and put into operation **1,300 km** of transmission network in the Poland until 2017.
- GAZ-SYSTEM plans to build over **2,200 km** of gas pipelines and a number of other system facilities related to the gas pipeline infrastructure in 2018-2022.
- A significant increase in DN1000 gas pipelines is assumed in 2018-2022, which will be elements of the future North-South Corridor and the Northern Corridor – an interconnection of the Polish and Danish systems with an undersea gas pipeline, with the expansion of the Polish system accompanying the **Baltic Pipe** gas pipeline.

Planned increase of the transmission network in
2018-2022



CO-FINANCING FOR THE EXPANSION OF THE TRANSMISSION NETWORK

OPI&E 2007-2013:

GAZ-SYSTEM **has been awarded co-financing** under the OPI&E for the following investments:

- Szczecin-Gdańsk gas pipeline
- Gustorzyn-Odolanów gas pipeline
- Szczecin-Lwówek gas pipeline
- Rembelszczyzna-Gustorzyn gas pipeline
- Jeleniów-Dziwiszów gas pipeline
- Włocławek-Gdynia gas pipeline
- Lwówek-Odolanów gas pipeline (engineering documentation)
- Czeszów-Kietczów gas pipeline (engineering documentation)
- Modernization of the transmission system in Lower Silesia PHASE I

OPI&E 2014-2020:

GAZ-SYSTEM **has signed co-financing agreements** under the OPI&E for the following investments:

- Completion of the construction of the Jeleniów II Compressor Station
- Lwówek-Odolanów gas pipeline
- Czeszów-Wierzchowice gas pipeline
- Hermanowice-Strachocina gas pipeline
- Czeszów-Kietczów gas pipeline
- Zdieszowice-Wrocław gas pipeline
- Strachocina-Pogórska Wola gas pipeline
- Tworóg-Kędzierzyn gas pipeline
- Tworóg-Tworzeń gas pipeline
- Pogórska Wola-Tworzeń gas pipeline

The total amount of
co-financing under the
OPI&E 2007-2013



**PLN 860
million**

The total amount of
co-financing under the
OPI&E 2014-2020



**PLN 350
million**

The total value of
co-financing agreements
signed under the OPI&E
2014-2020



**PLN 2.2
billion**

CO-FINANCING FOR THE EXPANSION OF THE TRANSMISSION NETWORK

Co-financing under the CEF instrument:

GAZ-SYSTEM **has signed co-financing agreements** under the CEF instrument for the following investments:

- Strachocina – PL-SK border gas pipeline – preparation, construction
- Strachocina gas compressor station – preparation, construction
- Kędzierzyn gas compressor station – preparation
- Kędzierzyn – PL-CZ border pipeline – preparation
- Hołowczyce – PL-LT border gas pipeline – engineering , construction
- Gustorzyn compressor station – construction

GAZ-SYSTEM has been awarded co-financing under the CEF program for the Baltic Pipe investment project along with the accompanying infrastructure (preparatory work), but the grant agreement has not been signed yet.



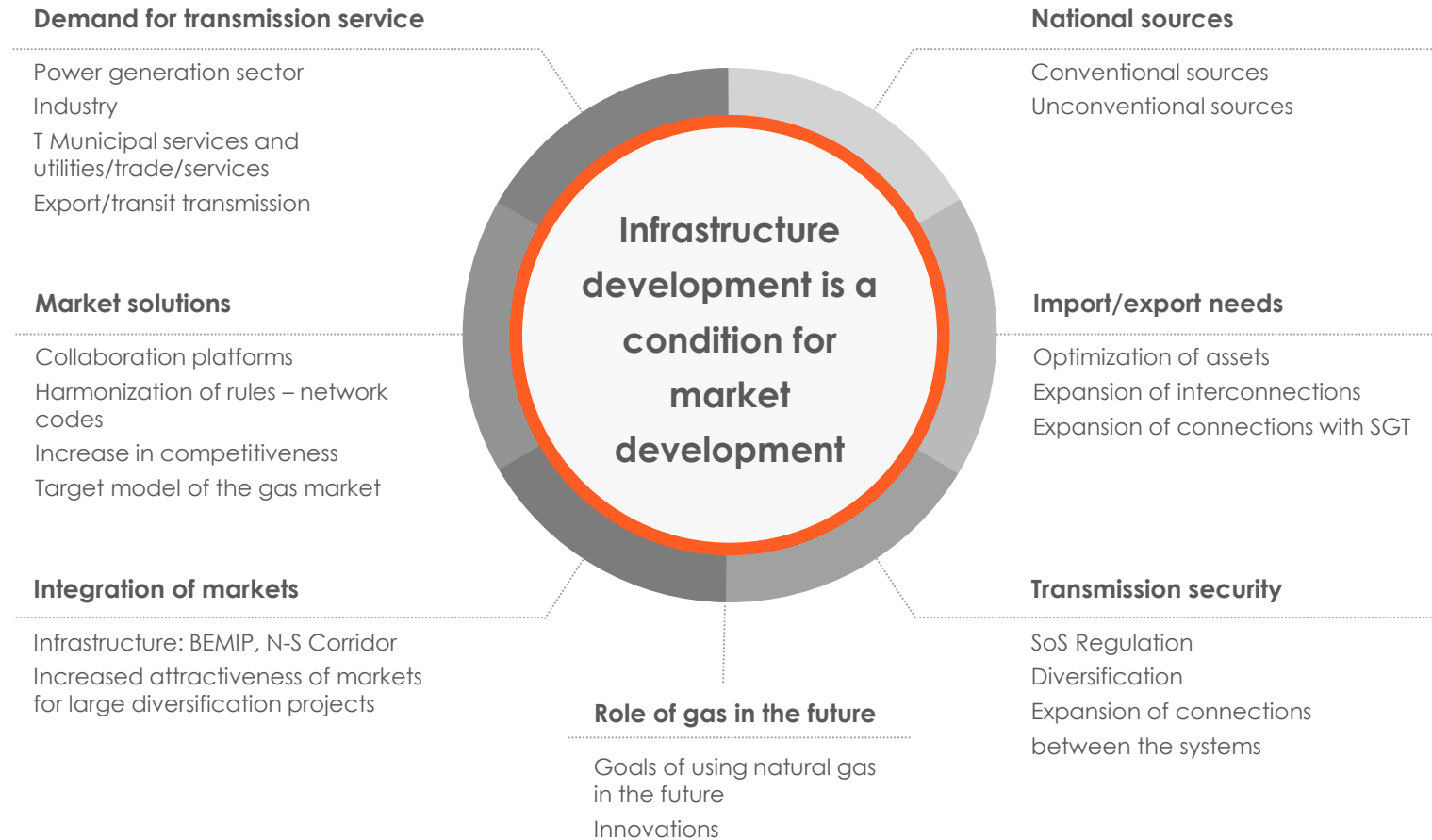
NATIONAL TEN-YEAR NETWORK DEVELOPMENT PLAN

- The obligation to draw up a development plan in the scope of meeting the current and future demand for gaseous fuels results from Article 16(1) of the Energy Law. Pursuant to Article 16(2) of the Energy Law, the National Development Plan is drawn up by the transmission system operator for a 10-year period.
- The plan should ensure long-term maximization of the efficiency of costs and outlays incurred by the energy company, so that the costs and outlays do not cause excessive increases in prices and rates of gaseous fuel or energy supply in individual years, while ensuring continuity, reliability and quality of supplies.
- The Ten-Year Development Plan has been prepared for the fourth time. So far, the President of ERO approved three TYNDP drafts prepared by GAZ-SYSTEM S.A. for 2014-2023, 2016-2025 and 2018-2027.

THE PURPOSE OF THE TEN-YEAR DEVELOPMENT PLAN (KDPR)

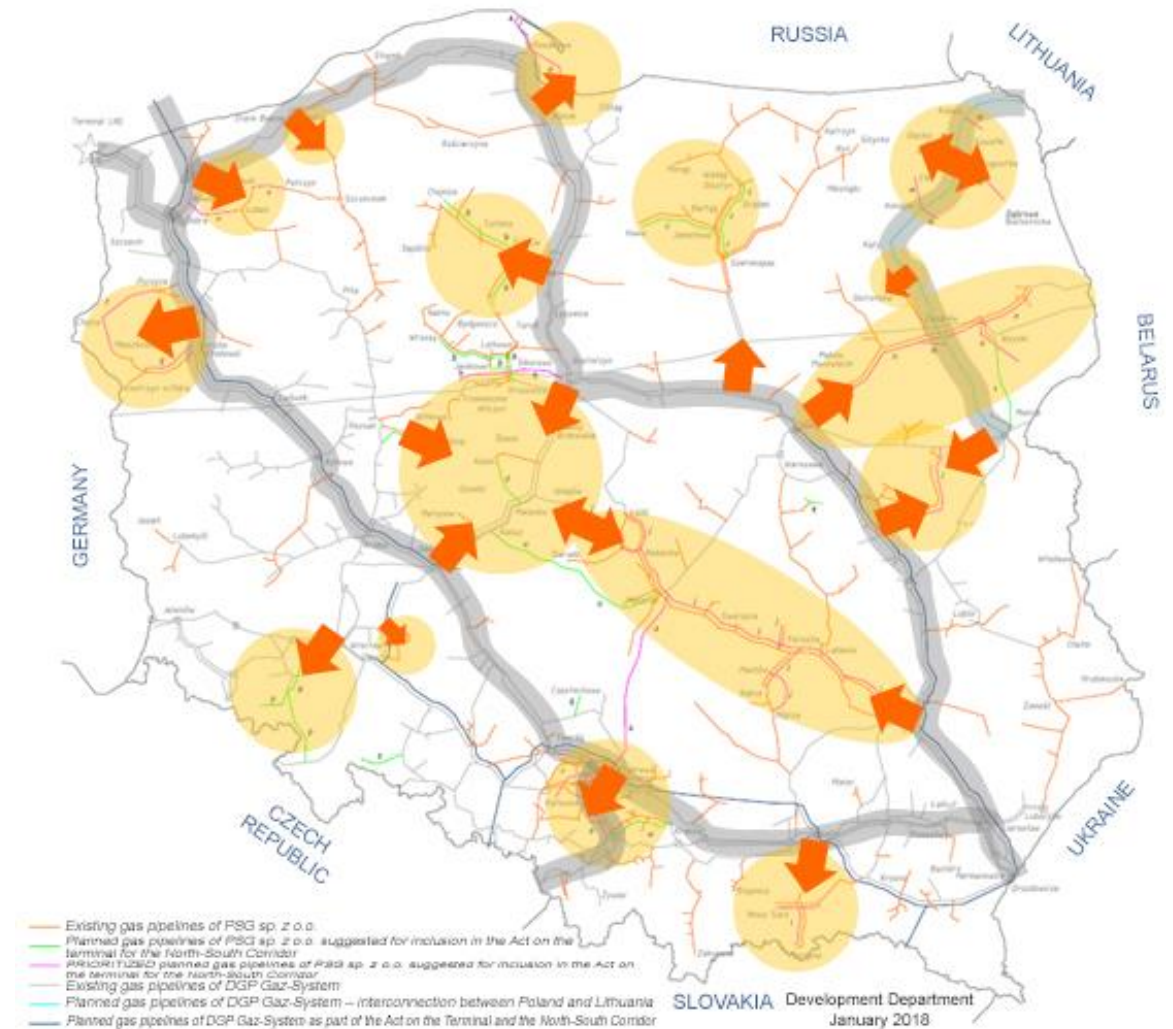
- To fulfill TSO obligations under the Energy Law
- To determine investment activities to be taken by GAZ-SYSTEM in the coming years
- To ensure long-term planning including market information (new applications for connection, which determine the locations of infrastructure development)
- To develop a system ensuring reliable operation, flexibility and security of supply
- TYNDP is the basis for determining the level of investment outlays and operating costs as a derivative of incurred outlays that GAZ-SYSTEM will be able to include in the transmission tariff

TRANSMISSION SYSTEM DEVELOPMENT DETERMINANTS



AREAS FOR EXPANDING THE DISTRIBUTION SYSTEM (PSG)

The PSG strategy for 2016-2022 assumes an increase in the volume of distributed gas from **2.49 bcm** to **12.31 bcm** annually



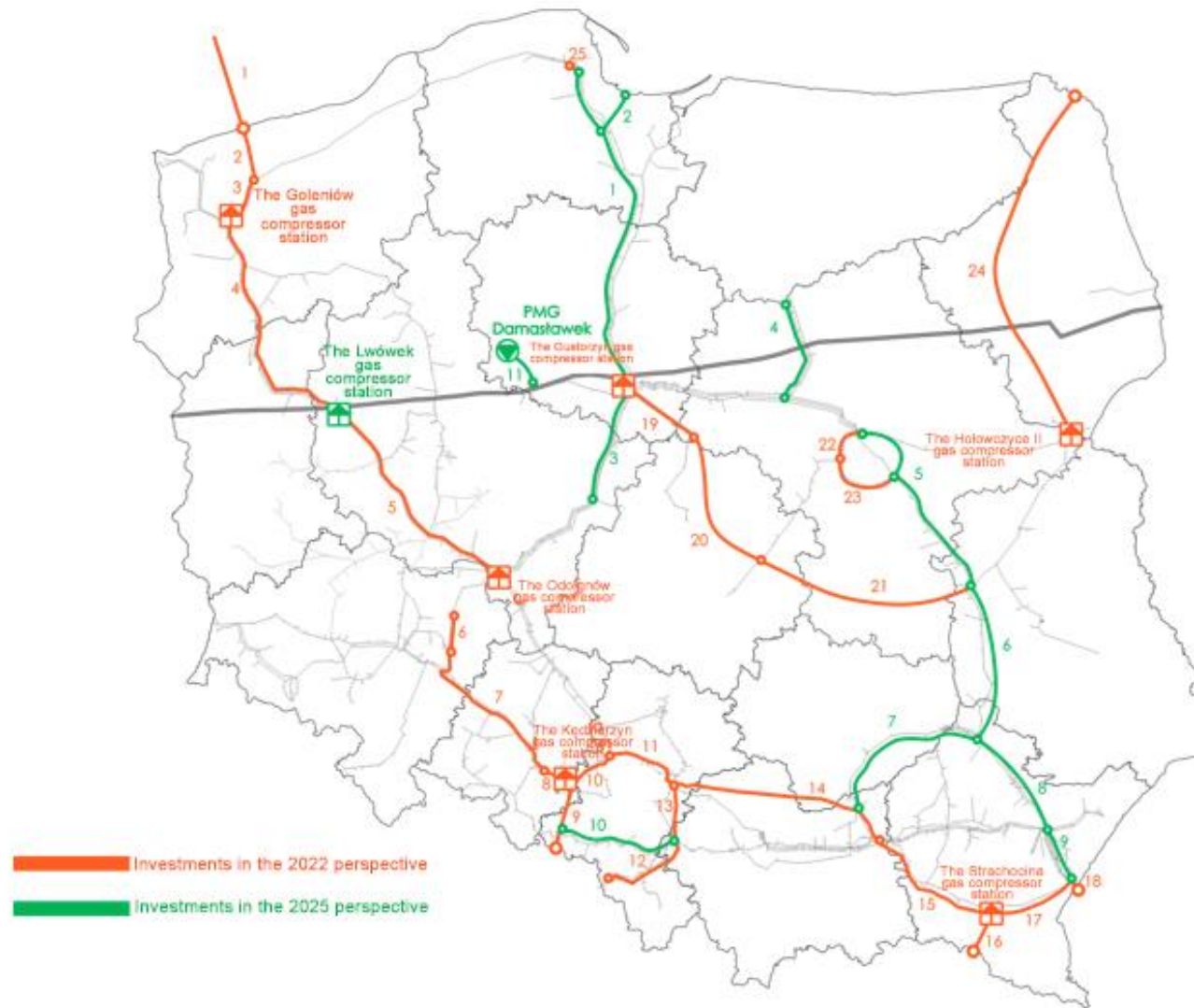
STRATEGIC TASKS INCLUDED IN THE 2020-2029 PROGRAM

Gas pipelines in the 2022 perspective

1	Baltic Pipe
2	Niechorze-Płoty
3	Płoty-Goleniów
4	Goleniów-Lwówek
5	Lwówek-Odolanów
6	Czeszów-Kiełczów
7	Wrocław-Zdzieszowice
8	Zdzieszowice-Kędzierzyn-Koźle
9	Kędzierzyn Koźle-border of PL
10	Kędzierzyn Koźle-Tworóg
11	Tworóg-Tworzeń
12	Skoczów-Komorowice-Oświęcim
13	Oświęcim-Tworzeń
14	Pogórska Wola-Tworzeń
15	Strachocina-Pogórska Wola
16	Strachocina-border of PL
17	Strachocina-Hermanowice
18	Hermanowice-border of PL
19	Gustorzyn-Leśniewice
20	Leśniewice-Rawa Mazowiecka
21	Rawa Mazowiecka-Wronów
22	Warsaw North-Mory
23	Mory-Wola Karczewska
24	Hołowczyce-border of PL
25	Reszki-Wiczlino

Gas pipelines in the 2025 perspective

1	Reszki-Gustorzyn
2	Gdańsk-KSP (Kolnik)
3	Wieniec-Adamów
4	Uniszki Zawadzkie-Płońsk
5	Warszawa Północ-Wronów
6	Wronów-Rozwadów
7	Swarzów-Rozwadów
8	Rozwadów-Jarostaw
9	Jarostaw-Hermanowice
10	Racibórz-Oświęcim
11	Damastawek-Mogilno



CONSULTATIONS ON THE DEVELOPMENT PLAN

In addition to regular TYNDP consultations, feel invited to exchange information about your needs and plans

planrozwaju@gaz-system.pl

THANK YOU FOR YOUR ATTENTION

