

Polish Gas Market Update

Is the new CEE Gas Hub being born?



Presentation Plan

1. Gas Hub Definitions
2. Polish Gas infrastructure development
3. Financial Gas Market development in Poland
4. Challenges ahead



source: "PLANY ROZWOJOWE GAZ-SYSTEM S.A. KRAJOWY DZIESIĘCIOLETNI PLAN ROZWOJU (KDPR 2020-2029) "

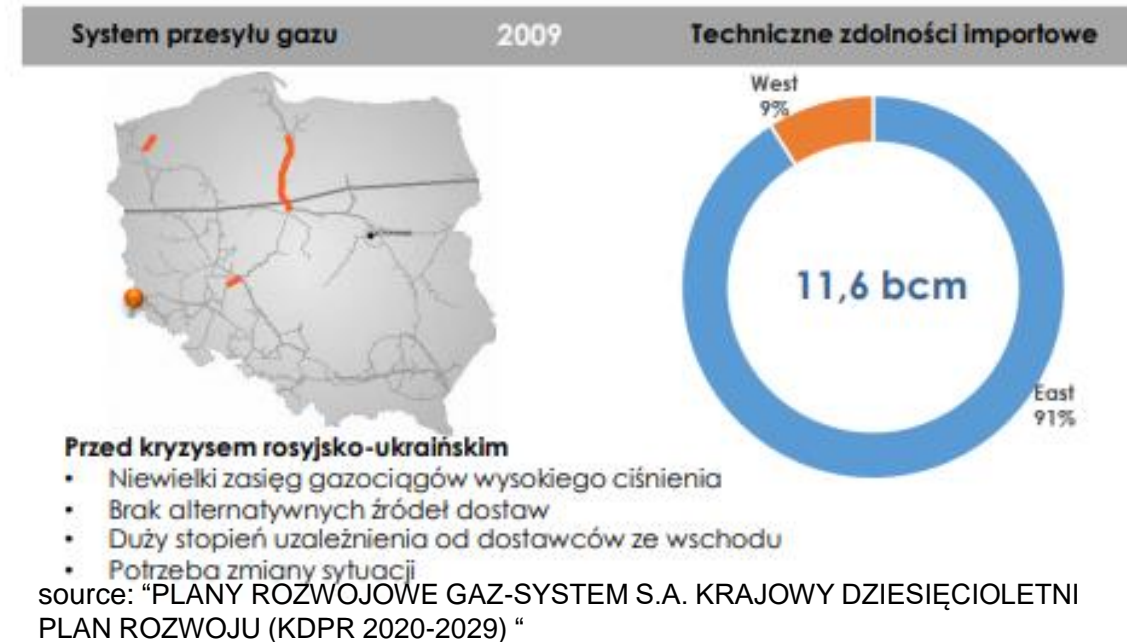
Gas Hub - Definitions

Type	Description
Physical	<ul style="list-style-type: none">• Well interconnected area with surrounding markets• High level of internal Gas consumption and/or Gas production• Excess of supply from different sources
Financial	<ul style="list-style-type: none">• Established derivatives market – which allows to hedge the market risk exposure• Many market participants which creates market liquidity• Low entry barriers for setting up the gas trading business• Stable regulatory framework
Balancing	<ul style="list-style-type: none">• Well interconnected area with surrounding markets• Internal market size significantly higher than surrounding markets which allows to take any gas excess or cover any gas shortage of those

How it was a decade ago?

Fully dependent from one supplier

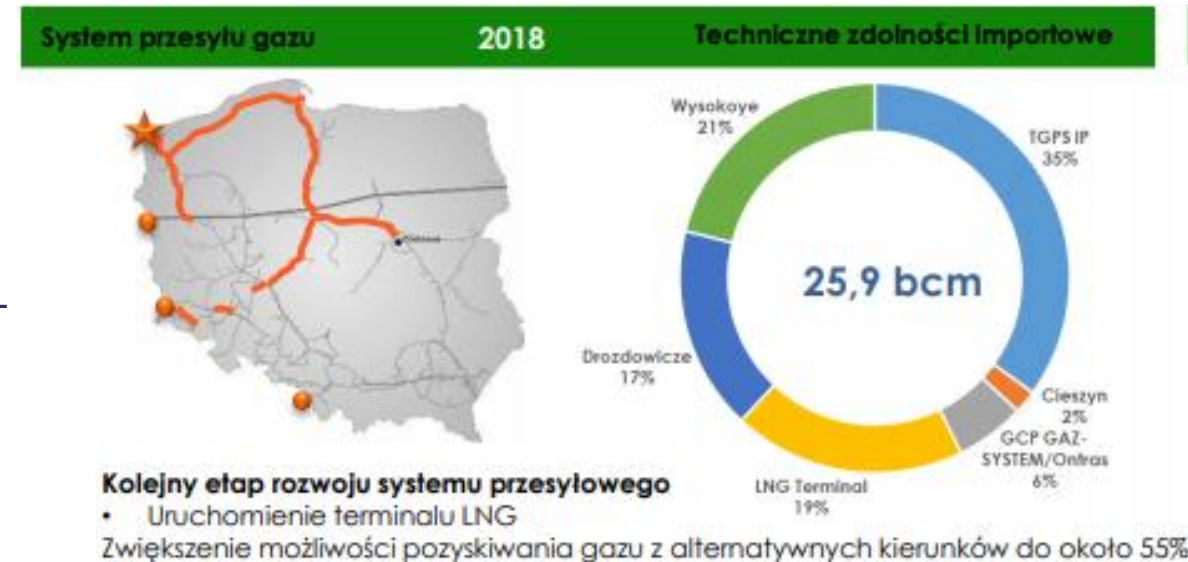
- Gazprom Long Term Contract covering all supply
- No alternative supply sources
- No alternative interconnections
- Limited gas import from DE and CZ not sufficient to cover demand
- Not existing gas market (neither SPOT or Derivatives)



How it is now?

Fully Independent from one supplier

- Gazprom Long Term Contract ended
- Many alternative supply sources
- Many alternative interconnections: Baltic Pipe, LT-PL, SK-PL, DE-PL (including physical rewers)
- LNG Terminal 6bcm/year – covering 30% of demand – under further development to 8 bcm/year
- Developed gas market (SPOT or Derivatives) allowing market participants to hedge market exposure
- Entry barriers – mandatory storage – cross border license and gas trading license
- Limited domestic consumption compering to neighboring markets

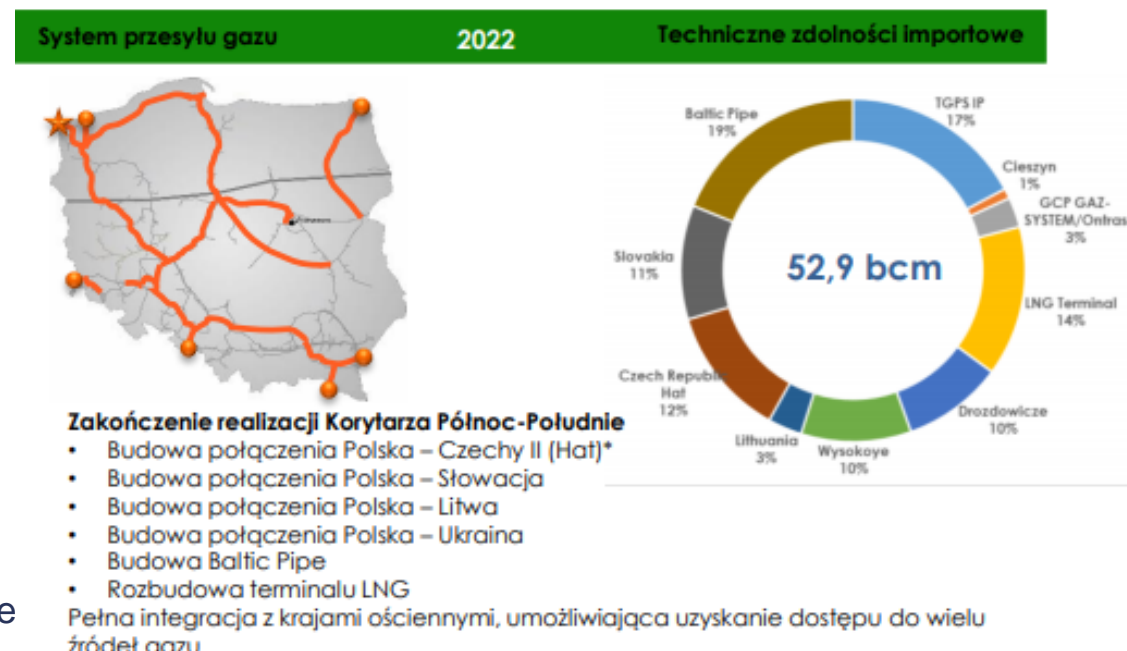


source: "PLANY ROZWOJOWE GAZ-SYSTEM S.A. KRAJOWY DZIESIĘCIOLETNI PLAN ROZWOJU (KDPR 2020-2029) "

How it will be?

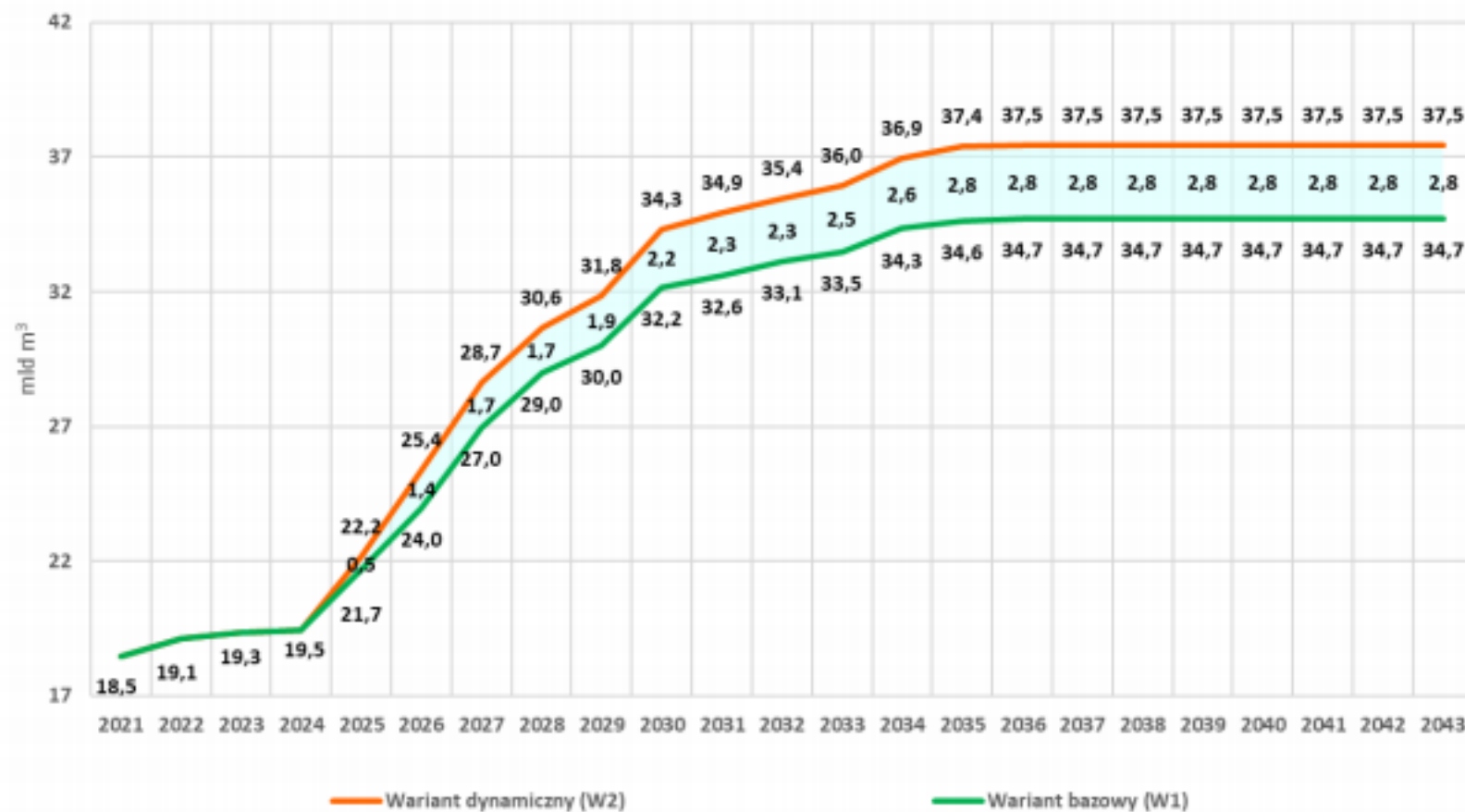
New CEE GAS Hub

- Many alternative supply sources
- Many alternative interconnections: Baltic Pipe, LT-PL, SK-PL, DE-PL (including physical rewers) UA-PL, CZ-PL
- LNG Terminal 8,3 bcm/year (2024)
- FSRU in Gdansk 6,1 bcm/year (2026-2027)
- Developed gas market (SPOT or Derivatives) allowing market participants to hedge market exposure
- Significant increase of domestic consumption level (due to coal phase out – new gas fired power plants)
- Entry barriers – mandatory storage – cross border license and gas trading license to be eased



source: "PLANY ROZWOJOWE GAZ-SYSTEM S.A. KRAJOWY DZIESIĘCIOLETNI PLAN ROZWOJU (KDPR 2020-2029) "

How it will be?

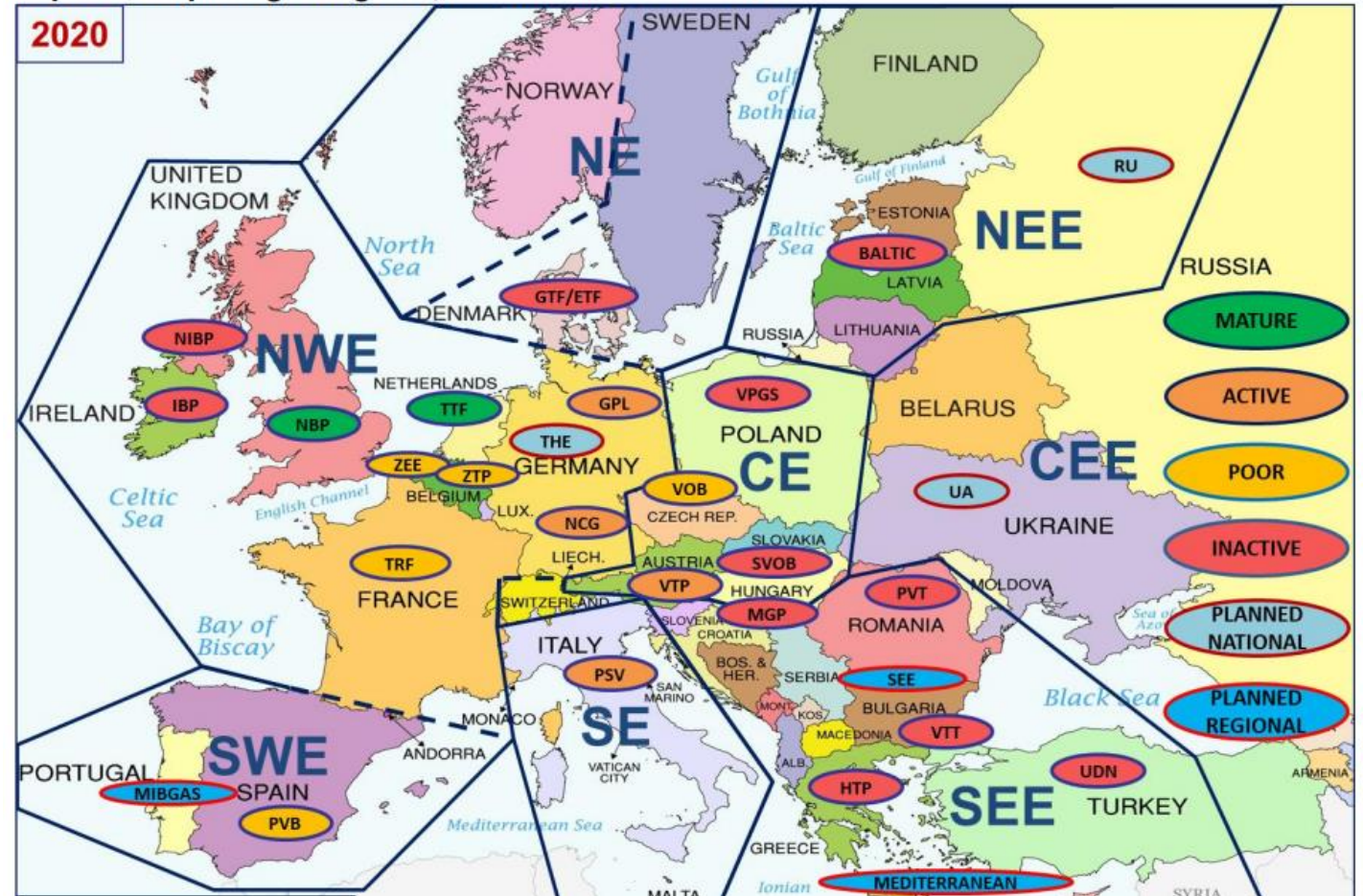


Financial Hub?

European GAS Hubs

- Many regions/HUBs where gas is traded
- Most important by traded volumes:
 - TTF (Netherlands)
 - NBP (UK)
 - THE (Germany)
 - PSV (Italy)
 - VTP (Austria)
 - TRF (France)

Map 1: European gas regions, markets and hubs: 2020



source: "European Traded Gas Hubs: German hubs about to merge" Patrick Heather, Senior Research Fellow

Financial Hub?

2020	Total Traded Volumes (TWh)				
HUB	2008	2011	2018	2019	2020
TTF	560	6295	28220	40390	46690
NBP	10620	18000	15105	12480	10060
THE	360	1190	2910	3580	3315
PSV	160	185	1060	1440	1455
VTP	165	170	650	870	1010
TRF	185	430	780	970	890
ZEE	500	870	460	380	235
ZTP			150	190	235
PVB			100	130	145
VOB			80	95	95

source: "European Traded Gas Hubs: German hubs about to merge" Patrick Heather, Senior Research Fellow

Financial Hub? Not Yet...

2020		Emerging Hubs Traded Volumes TWh						
HUB	Started	OTC			Exchange			TOTAL
		SPOT	CURVE	TOTAL	SPOT	CURVE	TOTAL	
VPGS	2014	-	-	-	26,94	124,13	151,07	151,07
PVT	2020	-	-	-	6,65	46,24	52,89	52,89
GTF/ETF	2008	-	-	31,1	11,29	0,28	11,57	42,67
MGP	210	0,02	0,39	0,41	23,27	0,7	23,97	24,38
SVOB	2016	3,38	14,3	17,68	-	-	-	17,68
Baltic-Fi	2012	-	-	-	6,64	0,57	7,21	7,21
VTT	2020	-	-	-	0,59	2,79	3,38	3,38
UDN	2011	-	-	-	balancing mostly			2,22
HTP	2018	-	-	-	balancing only			<1

source: "European Traded Gas Hubs: German hubs about to merge" Patrick Heather, Senior Research Fellow

Challenges ahead

- Potentially future lower traded volumes due to:
 - new regulations – lower level of mandatory gas exchange sales
 - New market structure PGNiG - Orlen merger
 - Lower usage of gas due to extremely high prices
- Not solved market entry barriers:
 - CBT License requirements
 - Mandatory storage
- Regulated prices for end customers market part with below market pricing



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Thank you for
your attention!

