

NEW OPPORTUNITIES FOR CROSS- BORDER GAS TRADING WITH FURTHER MARKET INTEGRATION

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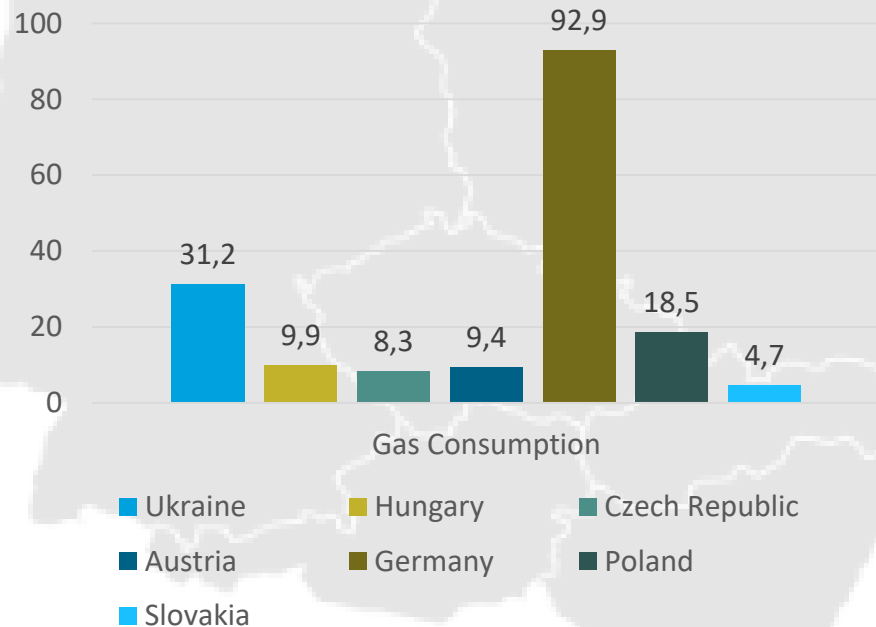
The characteristics of Ukrainian gas market

Ukraine is part of the broader Central European gas market comprising at least Hungary, Czech Republic, Austria, Germany, Poland and Slovakia

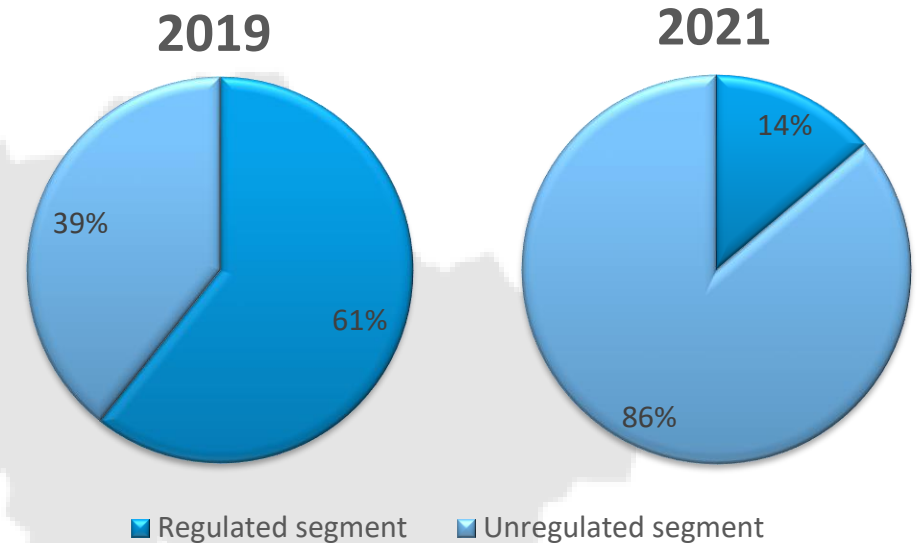
Ukraine is the second largest market in CE region

Ukraine gas market may lost regulated segment in nearest future

CE gas market in 2020, bcm



Structure of Ukraine gas market



Ukrainian wholesale market liquidity is growing.

Internal barriers for liquid market

- Ukrainian gas market still lacks a sufficiently liquid and unique Exchange with various market players.
- Debts of household and District Heating business
- Government intervention, especially recently with price cap on retail customers
-due to abuse of dominant position by DF Group on retail market (70% of market)

Steps towards the emergence of a European energy exchange in Ukraine:

- Central counterparty
- Financial clearing
- TRUST IN MARKET!



Ukrainian gas market still lacks a sufficiently liquid and unique Exchange with various market players. Slowly credit is coming into the market but a huge debt situation needs to be settled.....

The debts to Naftogaz of Ukraine

Industrial clients

0.13



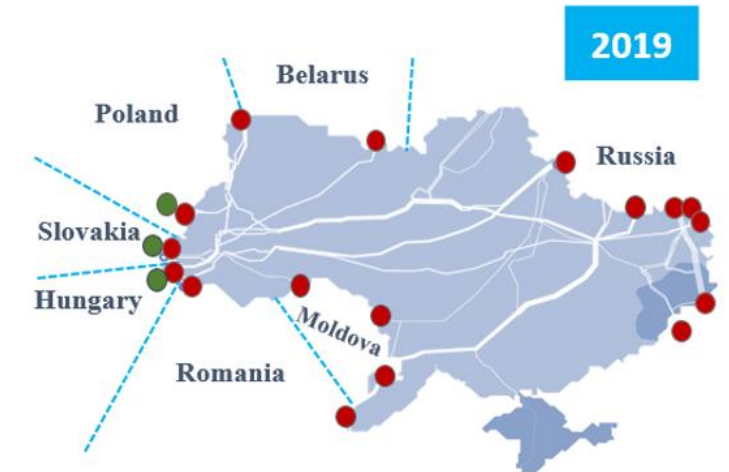
Regional distribution
companies

DH and CHP

Further development of credit and clearing instruments will support the development of a forward market and prices. Naftogaz Trading introduced 100% Bank Guarantee backed Monthly products on UEEX with M+10 and M+45 payment terms..... Foreign traders are storing/selling at credit and local banks are also bringing more credit and guaratees to the market...

Map with crossborder points and status

| IP | Interconnection Agreement/Operational Balance Agreement signed between operators | Virtual reverse possible Yes/No | Shorthaul tariff applicable by UA TSO | Shorthaul import/export tariff for each point |
|---|--|---------------------------------|---------------------------------------|---|
| Poland (GCP "GAZ-SYSTEM/UATSO") | Yes | Yes | Yes | Import: 0,28 eur/mwh Export: 0,42 eur/mwh |
| Hungary (VIP Bereg) | Yes | Yes | Yes | Import: 0,28 eur/mwh Export: 0,38 eur/mwh |
| Romania (Isaccea/Orlovka) (Tekove / Mediesul Aurit) | Yes | No | Isaccea – No Tekove - Yes | Import: 0,28 eur/mwh Export: 0,34 eur/mwh |
| Moldova (Oleksiivka, Grebenyky, Ananiiv, Kaushany, Lymanske, Virtual exit point to near border Moldavian customers) | Yes | No | No | N/A |
| Slovakia (Budince, Uzhgorod / Velke Kapusany) | Yes | No | Yes | Import: 0,28 eur/mwh Export: 0,33 eur/mwh |
| Russia (Sudzha, Sokhranovka) | Yes | No | No | N/A |



- IPs without IAs
- IPs with IAs prepared, but not yet agreed / signed
- IPs with IA signed and applied already now / from 1 Jan 2020
- VIP

Cross-border tariffs should be lowered by adjacent TSO's

1) TPA on all pipelines in all countries in both directions of the flow:

Bulgaria – T2 and T3 to be open for new clients;

Romania – to sign IAs on T2 and T3 with UA and BG;

Moldova – to ensure access for all clients to the capacities of the T1-T3.

2) Competitive tariffs to attract market participants:

Moldova – the tariff approved by the Moldovan Regulator is about \$11 per 1,000 cubic meters/100 km should be decreased to competitive level. Moldova should to find another solution of transit or even full market integration with Ukraine (eg. Luxemburg/Belgium)

Slovakia – tariffs politic must be in line with EU rules, coefficients should be lowered and secondary capacity trading enabled.....

Low tariffs open wide road for usage of Ukrainian gas storage for European market and increase the reliability of gas supply and stable prices.



Cross-border tariffs should be lowered by adjacent TSO's

3) Clear market rules for everyone under the EU Network Codes:

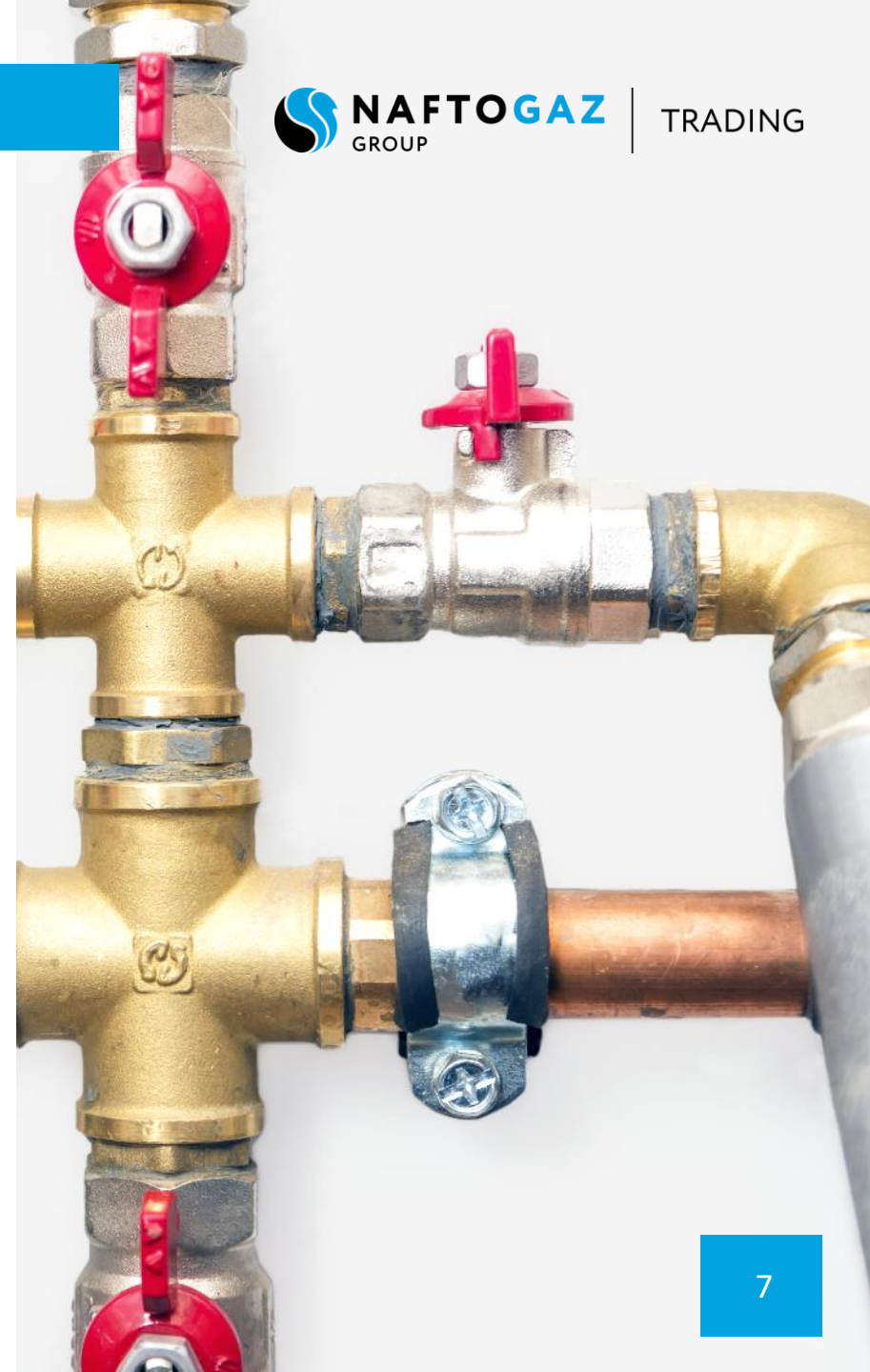
Romania – to introduce auctions on UA-RO border, to sign IAs with UA on remaining Ips (Transitgaz Romania and TSO UA should be constrained by EU to sign IA and OBA's to open Tekovo/Mediusu Aurit for cross-border trade);

Moldova – to ensure backhaul service and clear rules for market participants

4) Infrastructural aspect:

Increase of physical reverse capacities to 20 bcm to ensure additional SoS for all countries of the region and provide alternative routes to the market

Low tariffs open wide road for usage of Ukrainian gas storage for European market and increase the reliability of gas supply and stable prices.

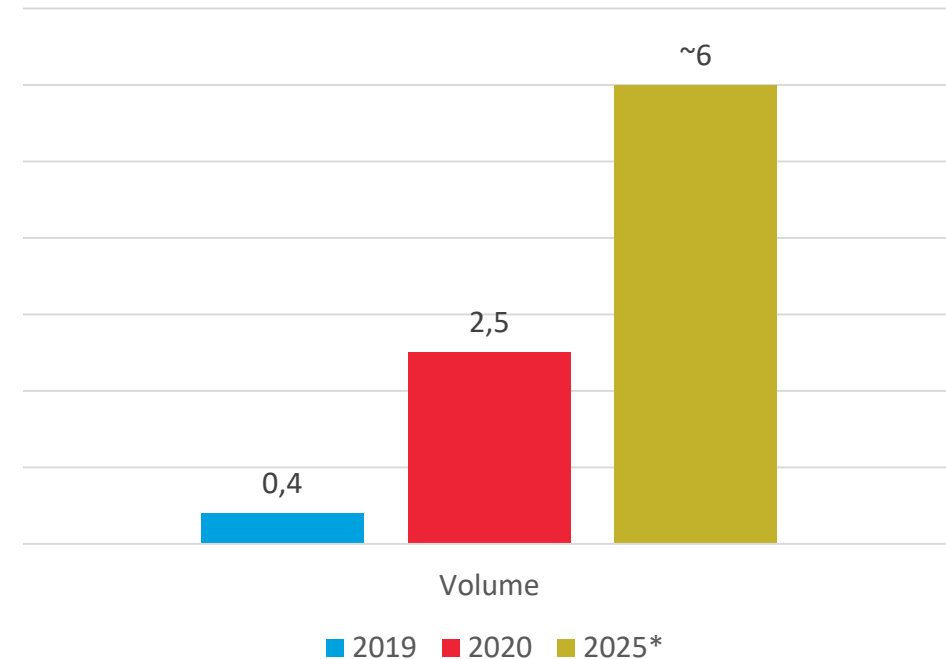


Ukraine market is a growth opportunity for European gas traders

Gas trade at UEEEX in 2020 increased in ~6 times to 2,5 bcm (~ 250 mln USD)

372 companies may trade in gas, of which 76 sold gas - ~twice higher than in 2019

Ukrainian Energy Exchange gas deals,
bcm

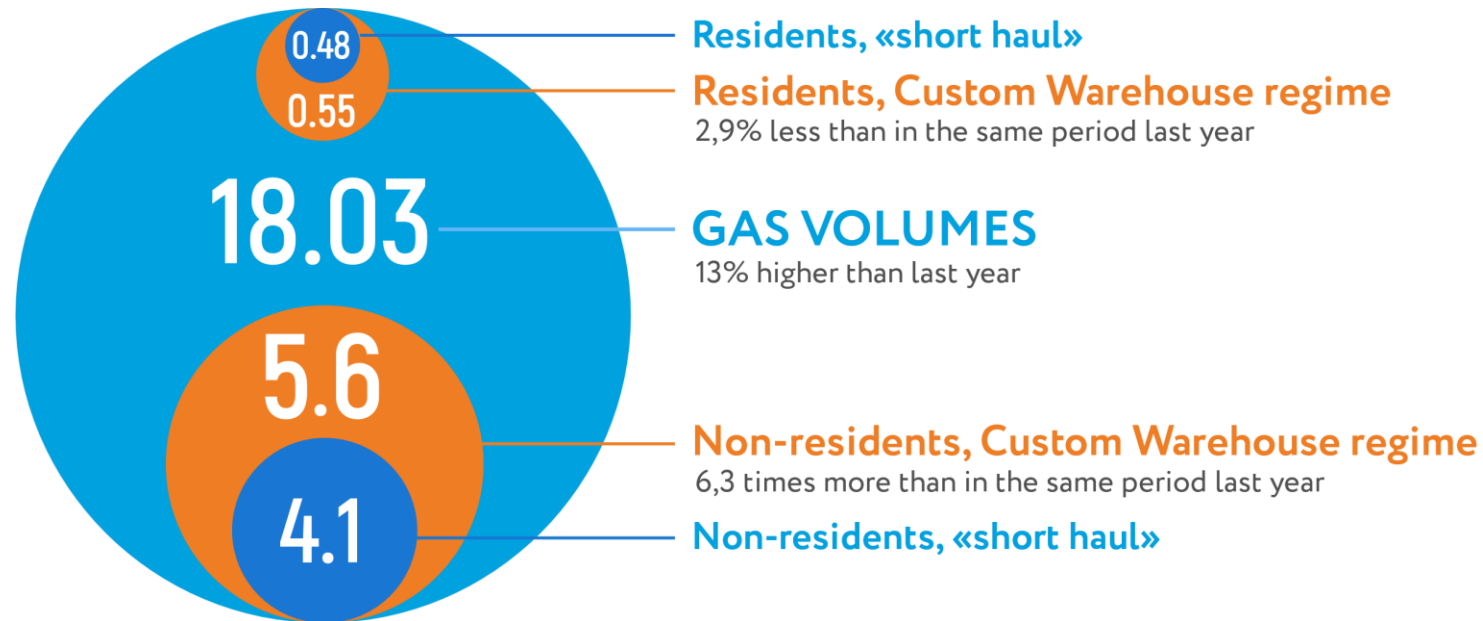


*Government acting plan from 2019: Increasing the share of exchange trade of energy resources by 2025 to 50%

Ukraine market has integrated strongly with European gas market

In 2020 foreign traders had ~10 bcm gas in storage and could pump 2 bcm more

Natural gas storage in Ukraine, bcm, on 1.03.2021



So join us in making the market:

- join the UEEEX and trade on it
- support development of new products/clearing/central cp
- let's finalize local EFET and use it...
- support ECS and other institutions to develop good practices
- convince your credit/risk teams to invest in UA....

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