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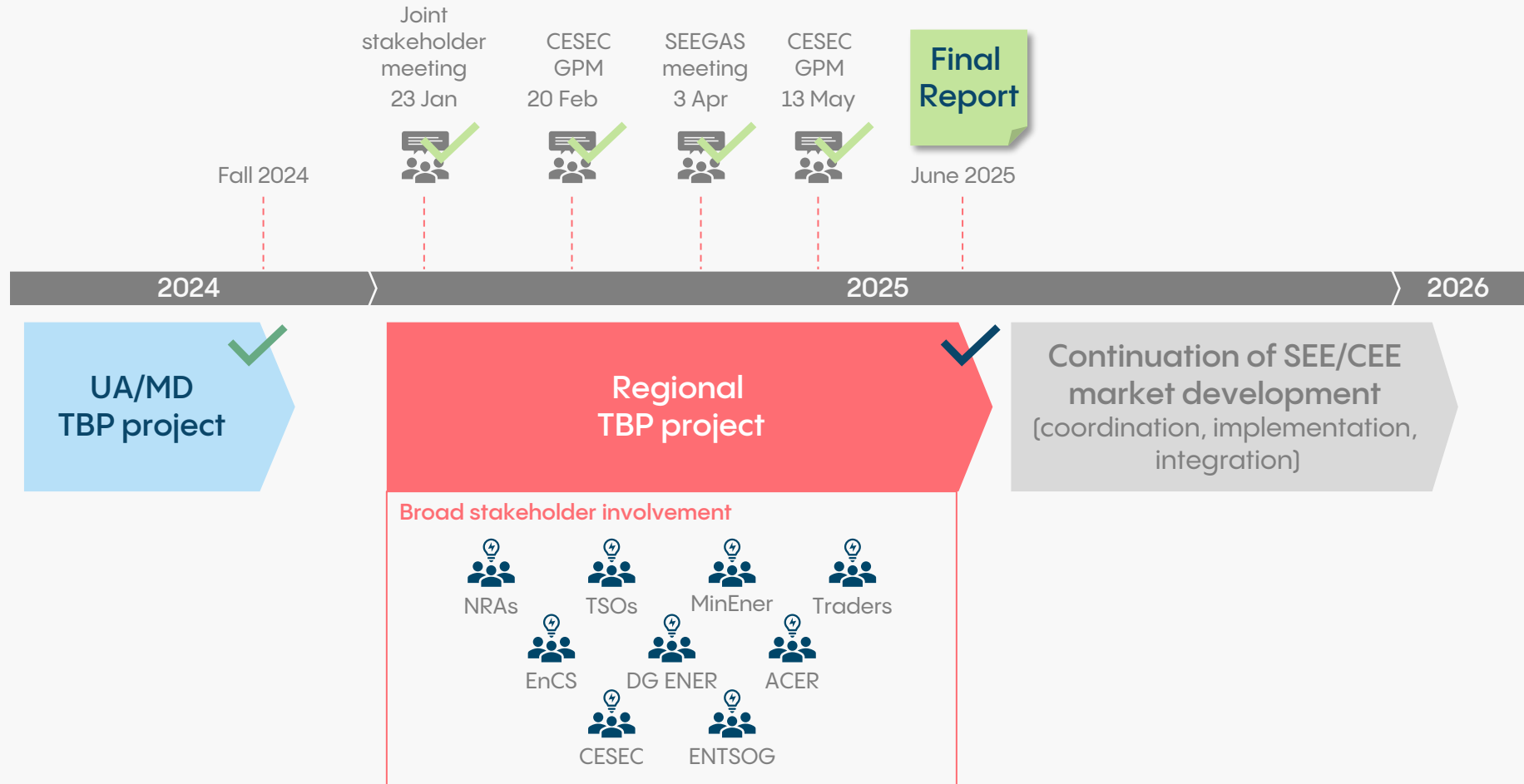
Unlocking commercial Attractiveness of the Trans-Balkan Pipeline System

Ukrtransgaz & GTSOU Annual Shippers' Meeting

Georg Fischer

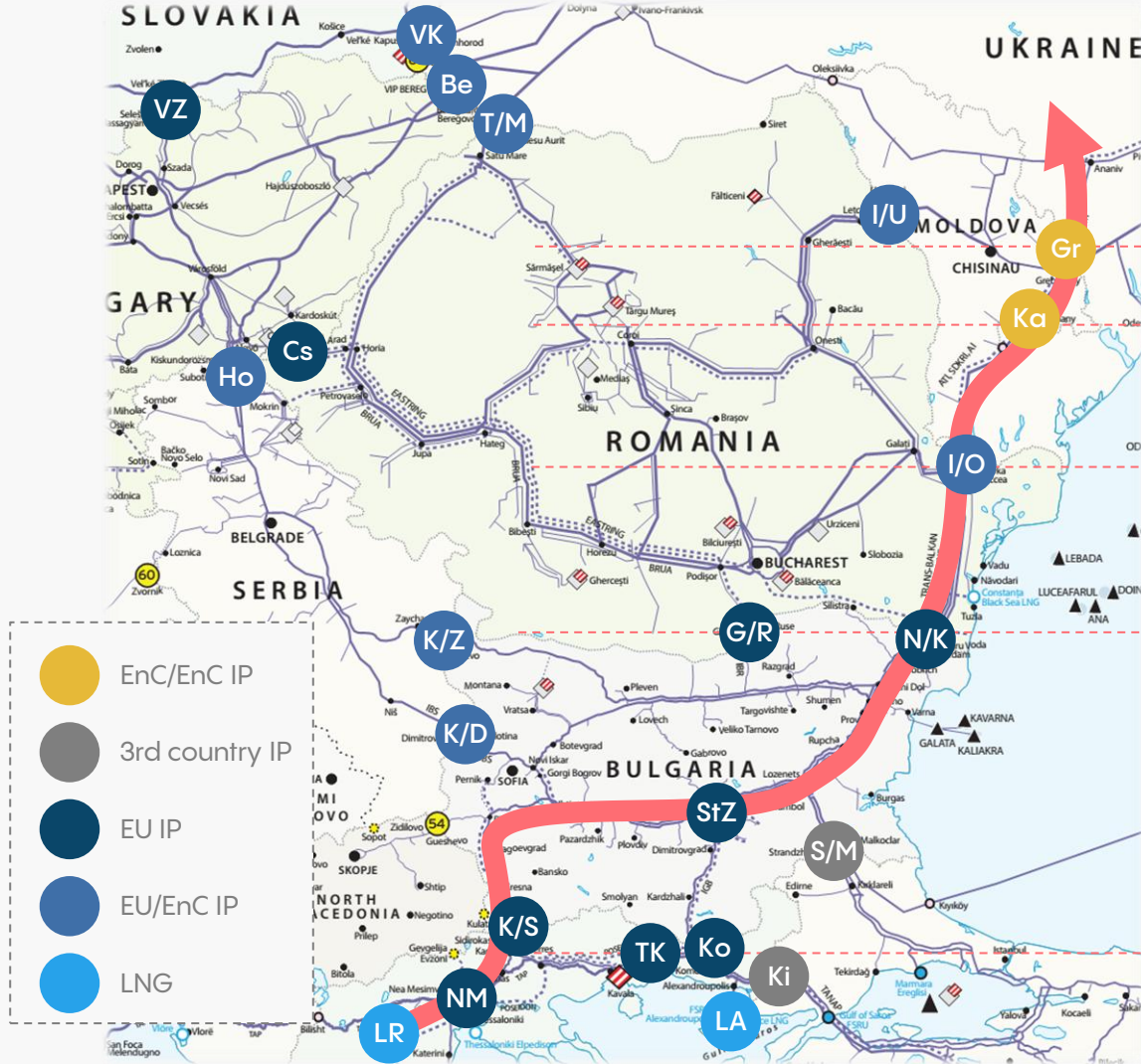
10 June 2025

Retrospective: Study Motivation and Activities



Example Use Case: Greek LNG to UA

Variant: LNG Revithoussa via Sidirokastro



Values as of 1.1.2025
Annual capacity tariff
€/MWh/d/y
Segment transport costs*
€/MWh

UA	↑	365	} 3,82
MD	↑	673	
	↑	582	} 1,39
	↑	89	
	↑	4	} 2,41
RO	↑	304	
	↑	361	} 1,36
	↑	141	
BG			} 1,04
	↑	130	
	↑	216	} 1,03
GR	↑	127	

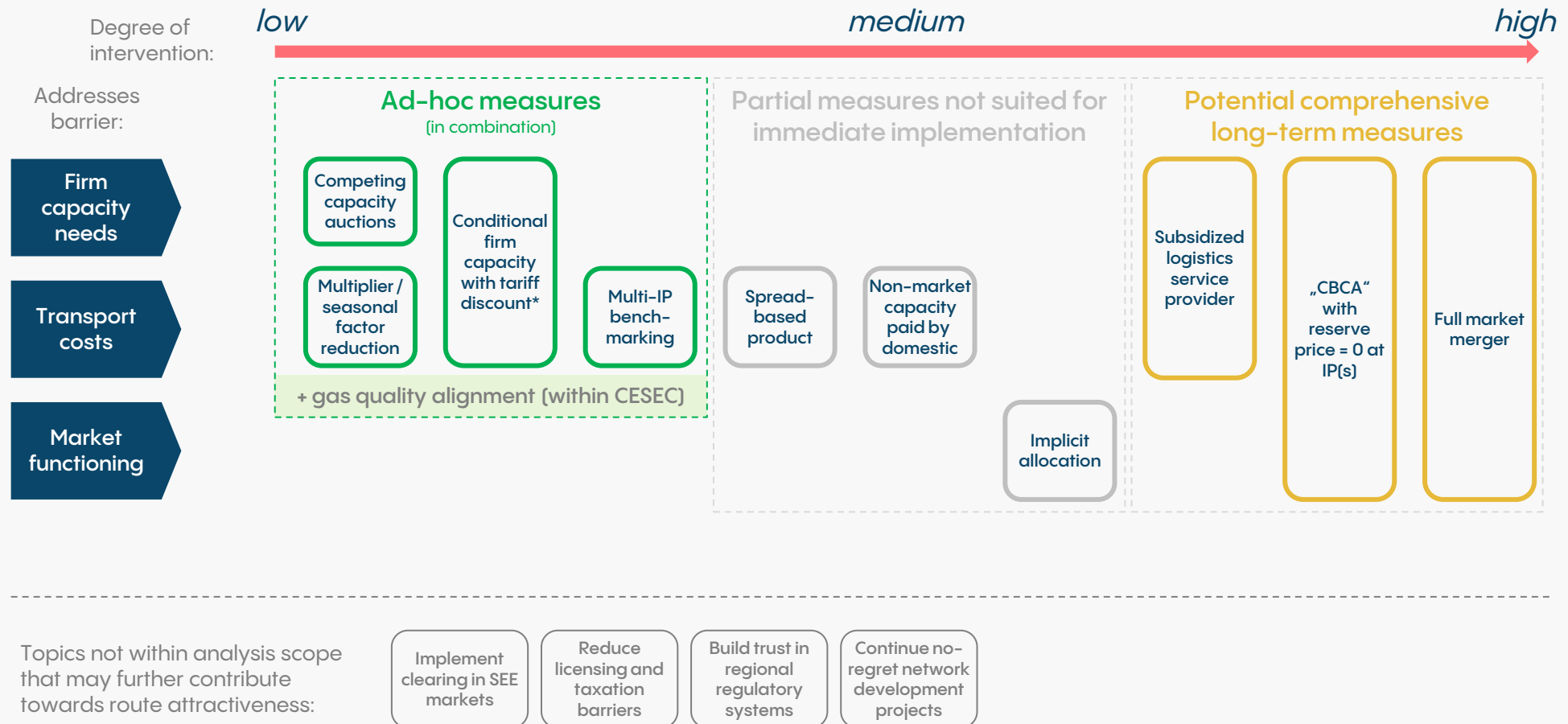
! Transports commercially not viable!

Monthly Products	Daily Products	
10,55	14,63	Jul25
10,90	15,35	Aug25
10,68	14,76	Sep25
10,03	15,63	Max**

* Total of E/X capacity tariffs (assuming 90% load) and E/X commodity tariffs on the segment
** Maximum seasonal factor (January product)

LNG terminal usage not included

Approaches discussed with regional Stakeholders suggest certain Measures can promptly improve Situation



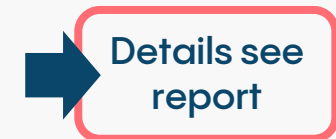
* Note: The „super-bundled“ route product proposed by Vertical Corridor TSOs end of May 2025 would be an extreme manifestation of this approach, however it raises serious concerns of compliance with EU/EnC regulatory framework and thus is not proposed in this study.

Introduction to Ad-hoc Solutions

	Solution element	Regulatory context
Tariff proposal (see next section 5)	Competing capacity auctions <ul style="list-style-type: none"> This addresses current firm exit capacity in Romanian TBP section being exclusively assigned to exit Negru Voda / Kardam, since physical constraints do not allow simultaneous exits at full capacity at both Negru Voda and Isaccea. Network users effectively decide in each auction how much of the total (constraint-based) firm capacity is made available at each point. 	<i>CAM NC Art. 8 (2.)</i> allows to allocate competing capacity via non-independent auctions
	Time factor reduction at selected IPs <ul style="list-style-type: none"> For selected IPs along the TBP route seasonal factors would be removed and multipliers would be reduced to increase short-term route attractiveness. 	<i>TAR NC Art. 12 (1.)</i> allows different levels of multipliers and seasonal factors at IPs
	FCR (firm capacity with combination restrictions) <ul style="list-style-type: none"> <u>Firm</u> conditional capacity product that requires a corresponding nomination for firm usage. Without corresponding usage, the product can be interrupted by the TSO (e.g. in case of lack of internal network transport capabilities). Since TSOs are obliged to maximize capacity, such products may only be introduced to reflect actual technical constraints for limiting VTP access. Tariff discount shall reflect reduced usage possibilities (e.g. reduced transmission system distance used compared to transports from/towards VTP). 	<i>TAR NC Art. 4 (2.)</i> allows to take into account conditions for firm capacity products in tariff setting
	Multi-IP benchmarking <ul style="list-style-type: none"> Benchmarking determines the overall competitive level of transport costs. Reference prices of IPs currently unused (or with low usage) along the route to be reduced, IPs with considerable (forecasted) bookings should remain unaffected to maintain (forecasted) revenues. Coordinated approach of NRAs to implement same tariff reduction (%) for each IP concerned (where no/low bookings expected). 	<i>TAR NC Art. 6 (4.)a</i> allows for the NRA to make benchmarking-related adjustments to the application of the RPM

Advantages:

- ✓ Significant impact on **commercial attractiveness** of the TBP route achievable
- ✓ Can be implemented in **compliance** with EU/EnC regulatory framework
- ✓ **Low implementation complexity** for TSOs and market participants
- ✓ Can be finetuned next year based on **evaluation** of first experience



Benchmarking based on robust Route Comparison

Most robust „umbrella use case“ for the benchmarking comparison:

Supply Slovakia from Bulgarian market (incl. from upstream GR/TR markets)

- ✓ **commercially attractive** (because significant bookings & flows over past months)
- ✓ **needs additional option** (because route congested)
- ✓ **contains many other use cases** (supply of Ukraine, vertical LNG transports, UGS filling)

benchmarking routes



		max. route capacity
Base Route	via MD/UA	75 GWh/d 2,6 bcm/a
Alternative Route 1	via RS/HU	102 GWh/d 3,5 bcm/a
Alternative Route 2	via RO/HU	79 GWh/d 2,7 bcm/a

Benchmarking suggests ~50% total transport costs reduction required (ca. 7-8 €/MWh for monthly capacity products)

Summary of Recommendations

Proposed solutions:

Project scope

Required benchmarking reductions to tariffs can be achieved via combination of:

- Multiplier and seasonal factor reduction
- Discount for conditional firm products
- Benchmarking reduction of reference prices

Capacity products attractiveness can be improved via combination of:

- Conditional firm capacity (FCR)
- Competing capacity auctions

Complementary initiatives

Address technical issues
(e.g. metering installations)

Address gas quality issues
(to unlock firm exit capacity at Isaccea / Orlivka)

Address market issues
(e.g. clearing, licensing, regulatory stability)

Proposed tariff structure:

Annual products for the benchmarking route (BG>SK):

Interconnection point			Current TTC (€/MWh)	Proposal		Adj. TTC (€/MWh)
				FCR discount	RP reduct.	
N/K	Exit	BG	0,70	-	-	0,70
N/K	Entry	RO	1,10	-	-	1,10
I/O	Exit	RO	1,31	-60%	-50%	0,57
I/O	Entry	UA	0,01	-*	-50%	0,01
Ka	Exit	UA	0,27	-*	-50%	0,14
Ka	Entry	MD	1,77	-50%	-50%	0,44
Gr	Exit	MD	2,05	-50%	-50%	0,51
Gr	Entry	UA	1,11	-	-50%	0,56
VK	Exit	UA	1,69	-	-50%	0,84
VK	Entry	SK	1,49	-	-50%	0,94
			11,50	Total:		5,80

* already subject to discount

Benchmark: 5,67

Multipliers:

Q	M	DA
1,05	1,15	1,50

Seasonal factors:

- Unchanged for IP N/K
- None at all other IPs

only ~2% markup

Impact of Tariff Adjustments:

Only reflecting IPs subject to the route BG>SK:

Scenario title	Add. quantity	Revenue change for adj. tariffs
No additional bookings	+0 TWh/a	-1,2 M€/a
Single LNG cargo	+1,5 TWh/a	+5,9 M€/a
Quarterly LNG cargos	+6 TWh/a	+26,0 M€/a
12x LNG cargo (~66% usage)	+18 TWh/a	+86,2 M€/a
Close to full usage (~80%)	+2,1 bcm/a	+126,0 M€/a

Huge upside potential without downside

TTC...total transport costs (capacity tariffs under 90% load assumption and including flow-based charges)
FCR..."firm with combination restrictions" capacity product, RP...reference price

Context of the Tariff Proposal for Ukrainian Supply

Supply Route TTC Methodology:

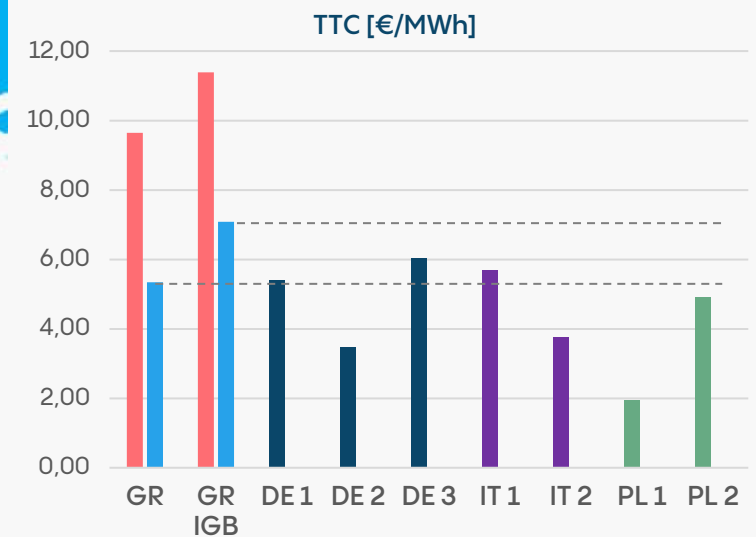
- Purely Ukraine-centric analysis
- All routes based on current tariffs for annual capacity products incl. flow-based charges.
- Transport costs were calculated from gas hub to target market ("entry-paid" at source market).
- Please note that this analysis doesn't indicate quantities available to Ukraine per route.

Route		TTC [€/MWh]	
Route	Route	Current	Red.*
Core TBP	BG>RO>UA>MD>UA	8,32	4,02
GR	GR>BG>RO>UA>MD>UA	9,65	5,34
GR IGB	GR>IGB>BG>RO>UA>MD>UA	11,38	7,08
DE 1	DE>AT>SK>UA	5,40	
DE 2	DE>AT>HU>UA	3,48	
DE 3	DE>CZ>SK>UA	6,03	
IT 1	IT>AT>SK>UA	5,69	
IT 2	IT>AT>HU>UA	3,77	
PL 1	PL>UA	1,93	
PL 2	PL>SK>UA	4,92	



Results:

- Current tariff levels show significant gap to transport costs on other routes.
- With the proposed benchmarking reductions TBP will become attractive from transport costs view also compared to alternative supply routes for Ukraine.
- At the same time the reductions lead to a moderate competition without replacing other key source markets or routes.



* Reduced tariffs subject to benchmarking and discounts for conditional capacity products

Summary Conclusions

Proposed solutions address the evidently prohibitive transport costs along TBP by reducing tariffs to a competitive level

Key Benefits:

- ✓ Supports SEE market development and security of supply
- ✓ Creates huge upside potential for each TSO's revenues & no downside
- ✓ Compliant with EU/EnC regulatory framework
- ✓ Straight-forward implementation for stakeholders and market participants

Total transport costs (EUR/MWh, August 2025)

LNG Revithoussa	Current	Reduced	Change
→ Ukraine	10,0	5,7	-43%
→ Slovakia	13,2	7,5	-43%

Additional TSO revenues from capacity tariffs

LNG cargos from LNG Revithoussa to Ukraine

1x (August 2025)	+6,4 MEUR
12x (monthly products)	+98,7 MEUR

- Gas Regulation (Reg. (EU) 2024/1789*)
- CAM NC (Reg. (EU) 2017/459)
- TAR NC (Reg. (EU) 2017/460)

- Include conditional product under national network code
- Each NRA adjusts tariffs via RPM amendment to
 - reflect benchmarking
 - define discounts for conditional products
 - update multipliers and seasonal factors

Coordination capability of regional TSOs & NRAs demonstrated under recent „Route 1 bundle“ proposal!

* Transposition of Reg. (EC) 2009/715 in the case of Energy Community Acquis



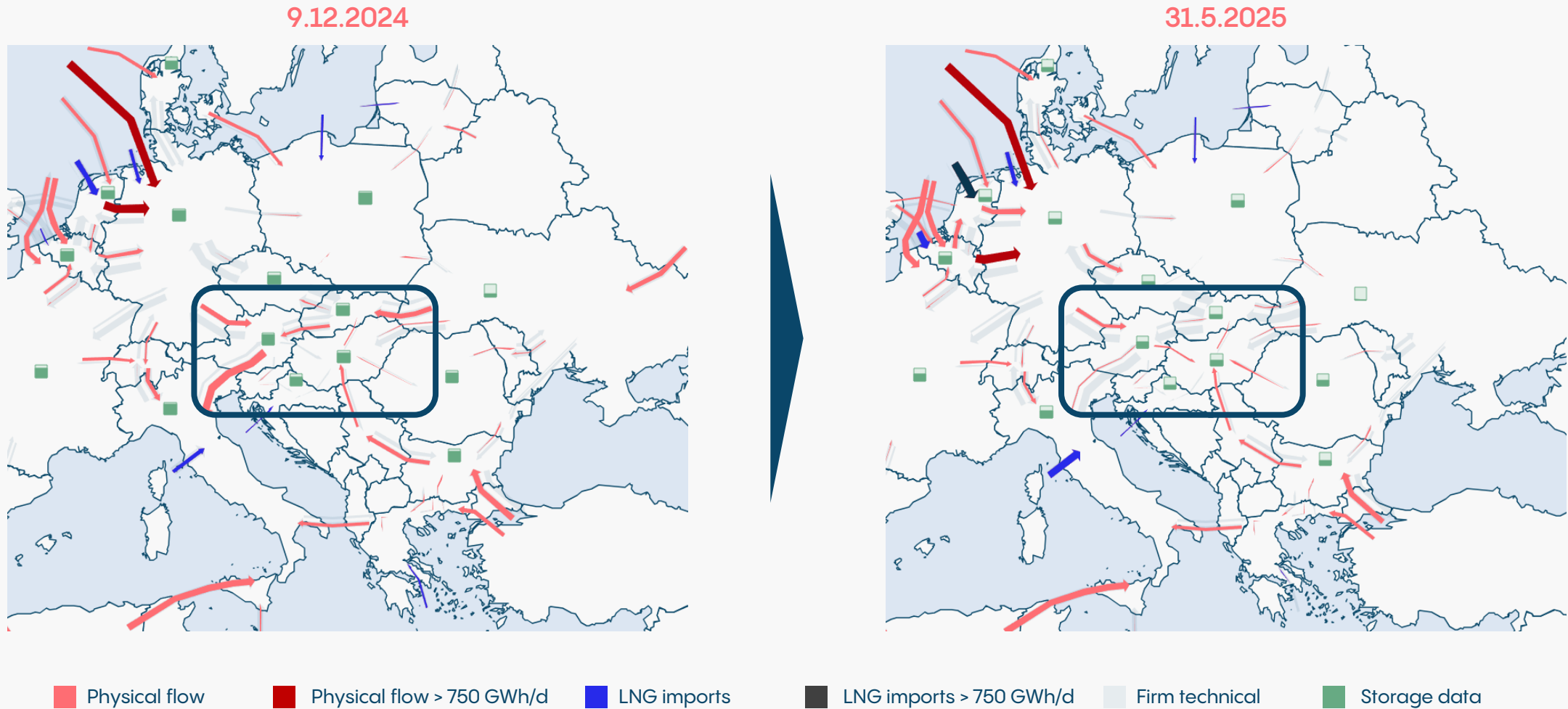
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Gas Flows in Central Europe changed significantly



Source: Inhouse WECOM flow map tool based on ENTSOG Transparency Platform and AGSI+ data