Follow-up study to the LNG and Storage Strategy
- Key findings -

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Stakeholder workshop on the follow-up study to the EU's LNG and storage strategy

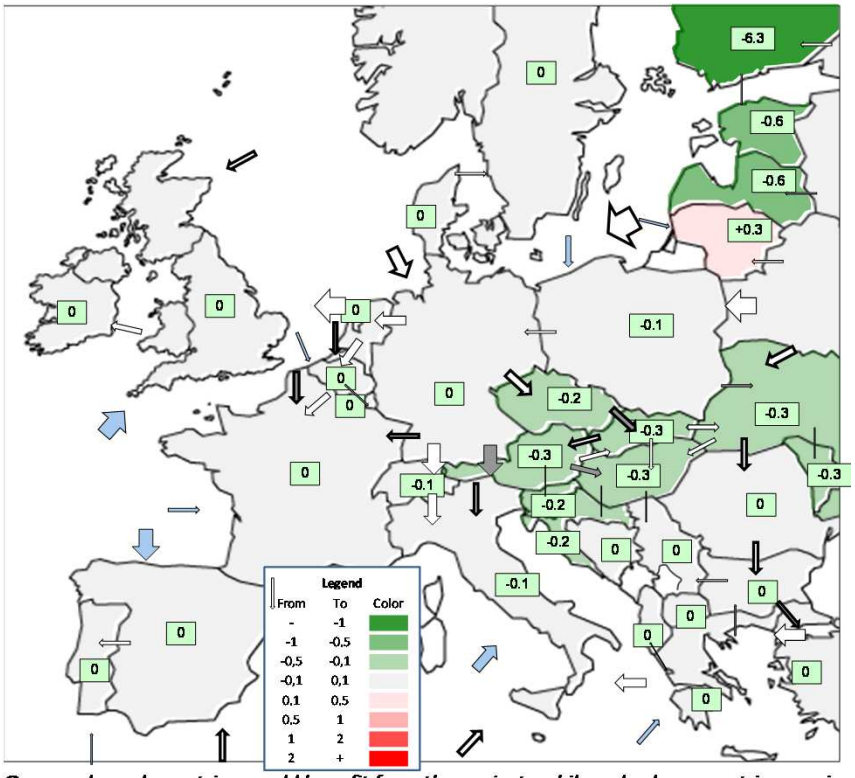
Brussels, 27 September 2017

Tasks

- **Task 1-2: modelling infrastructure**
- Task 3: gas quality
- **Task 4: assess the impact of access, capacity allocation and other regulatory measures on infrastructure use**
- **Task 5: identify potential regional cooperation mechanisms**
- **Task 6: identify the barriers and limitations stemming from the specific storage measures and regimes in Member States**
- Task 7: draw up potential directions for actions and specific actions that could be taken in order to address the barriers identified under tasks 4 and 6
- Task 8: Identify and assess the key issues regarding the liquidity and transparency of the global LNG market and the current level of development
- Taks 9: Identify and describe possible measures and initiatives

Implementing the infrastructure of the Strategy brings price convergence to Europe

Figure 1. Yearly average wholesale price difference caused by LNG storage strategy projects in 2020, €/MWh



Green coloured countries would benefit from the projects while red colour countries receive higher prices.

Name	Maximum flow GWh/d	Comment
HR-LNG	50	~0-30% utilization, tariff issues
RO-HU	126	~18-33% utilization, depends on RO demand
HU-RO (BRUA)	77	
FI-EE (Balticconnector)	79	~32% utilization
EE-FI (Balticconnector)	79	
PL-LT (GIPL)	74	direction of flows depend on global LNG dynamics
LT-PL (GIPL)	51	
LT-LV	52	Low yearly utilization (~7%) , but congested in high demand
EE-LV	105	~85-90% utilization
LV-EE	42	
ES-PT	85	Not in use
PT-ES	70	
ES-FR (MIDCAT)	110	Not in use
FR-ES (MIDCAT)	120	
In reference		
IGB (GR-BG)		~27-35% utilization, used in SOS to 100%
IBS (BG-RS)		~42-85% utilization, can serve in SOS

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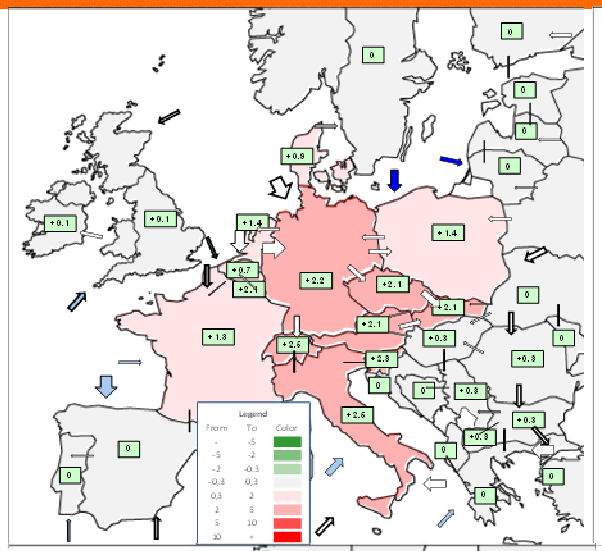
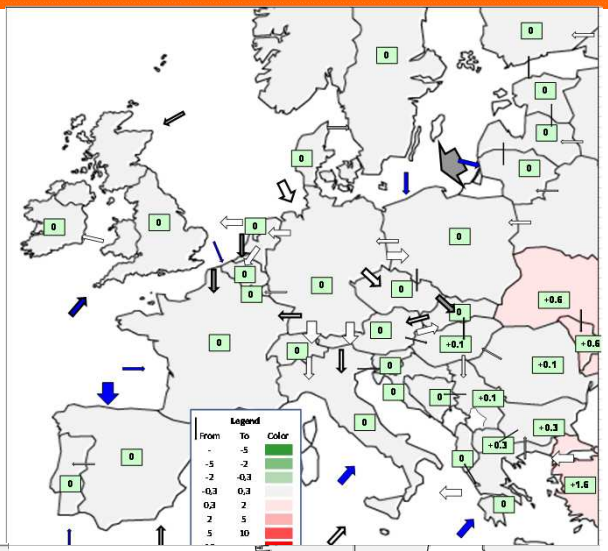
Risk for supply cut shifts to North-West Europe

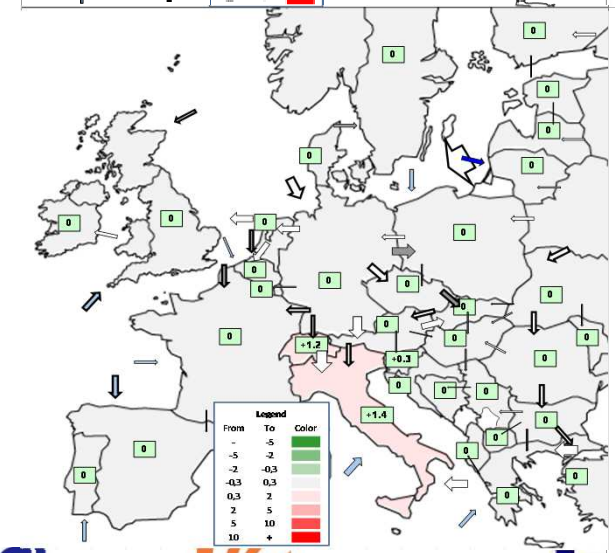
Nord Stream 1-2 route

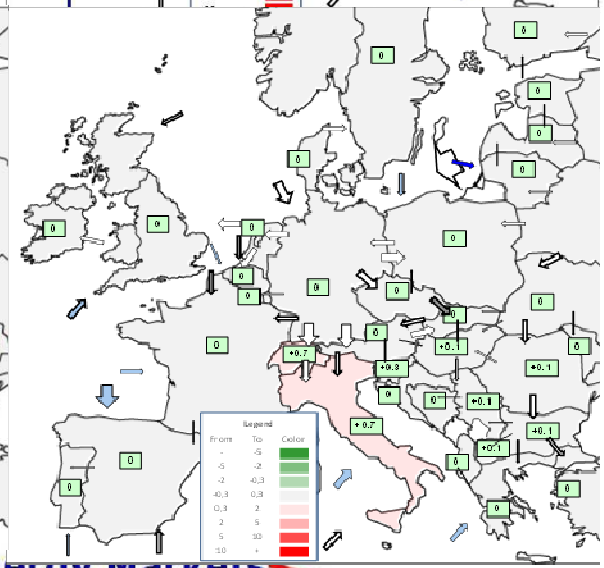




Ukrainian route

Algerian supply





Trans Adriatic route

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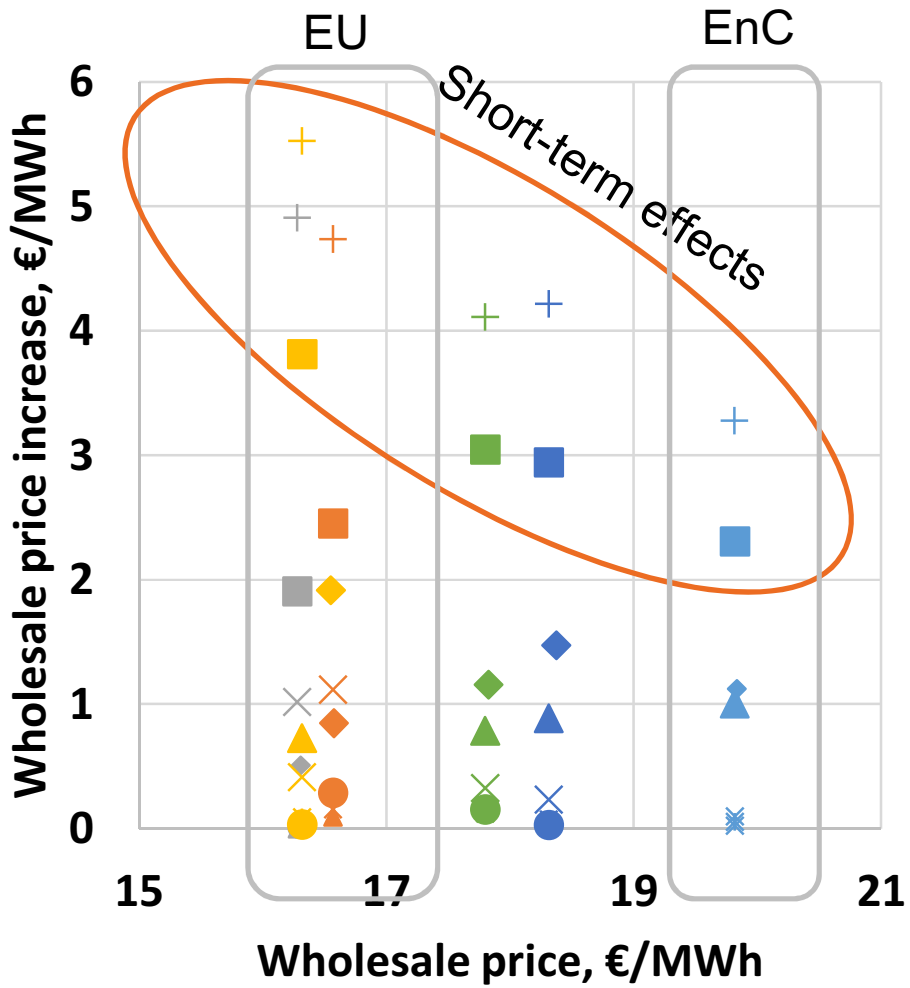
Price difference is not within the EU but between EU-EnC



- Price „hikes" are not extreme in SOS scenarios
- Short term demand shocks are the most relevant
  - LNG flexibility matters
- Combined demand and supply shock is an extreme assumption

EnC EU28 NWE SEE SEE+ SEE+TR

7 day peak
1 month peak
UA cut
Nord Stream 2 cut
North Africa cut
7 day peak + Nord Stream 2 cut
TAP cut

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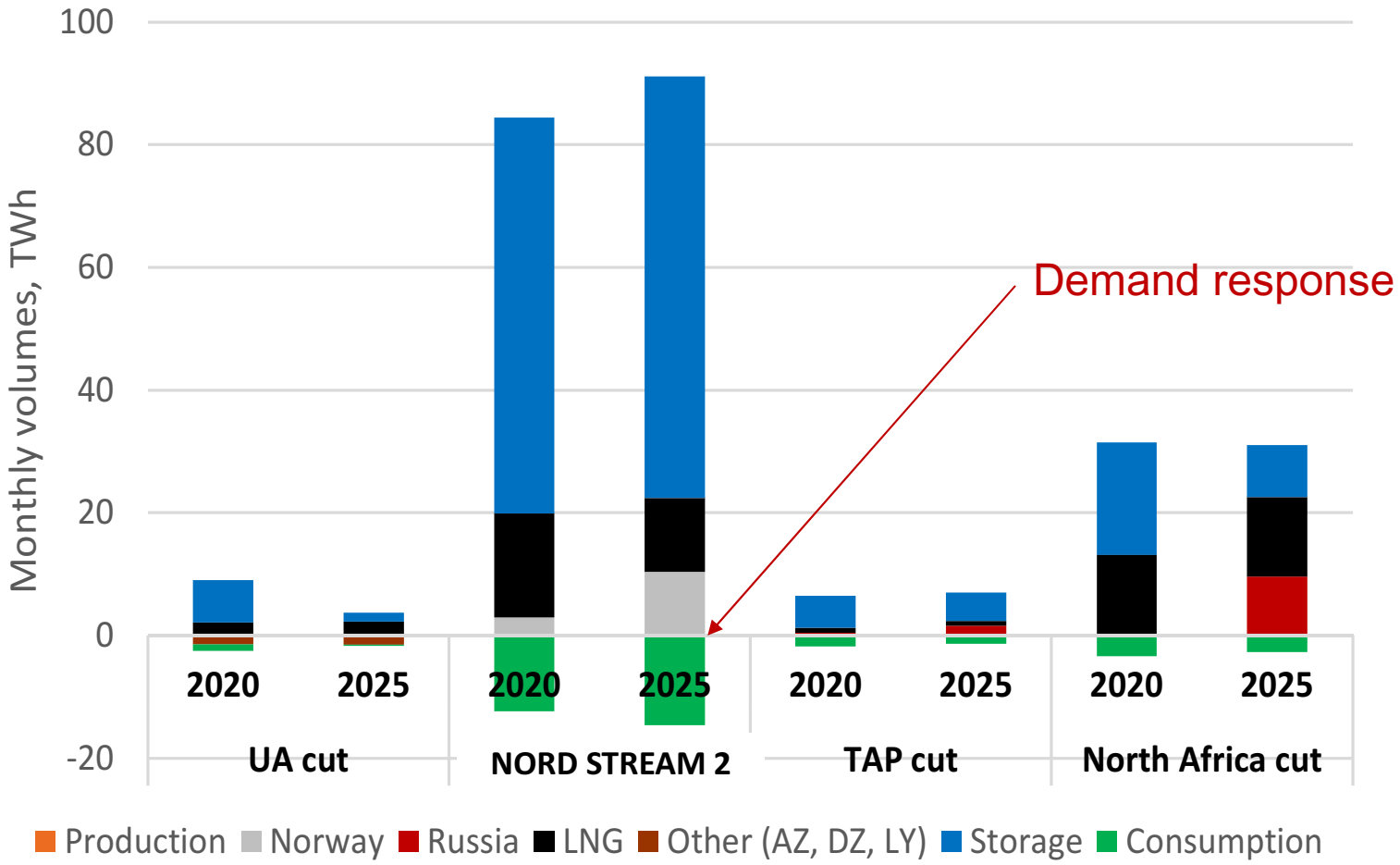
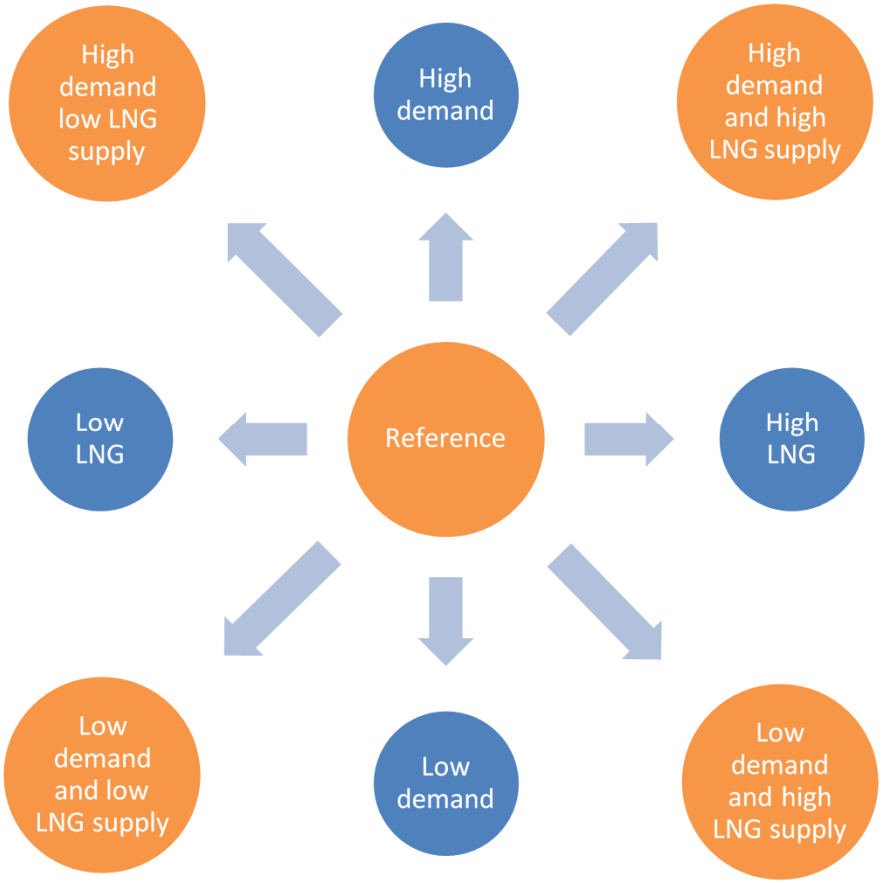
Storage and LNG are the key sources of flexibility



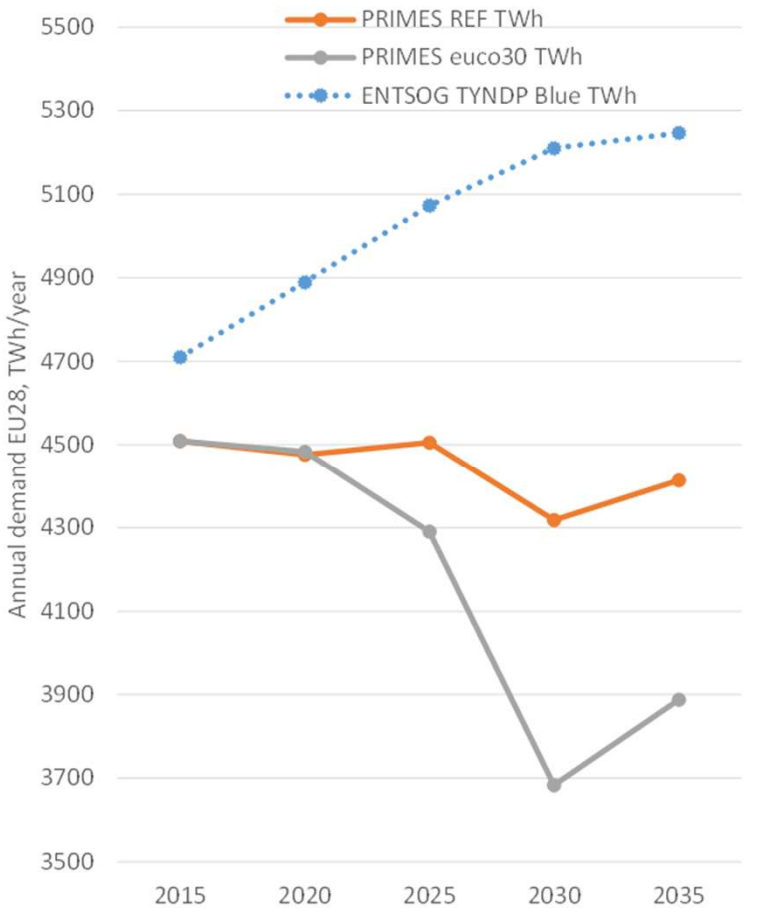
Sensitivity scenarios

Schematic representation of sensitivity runs



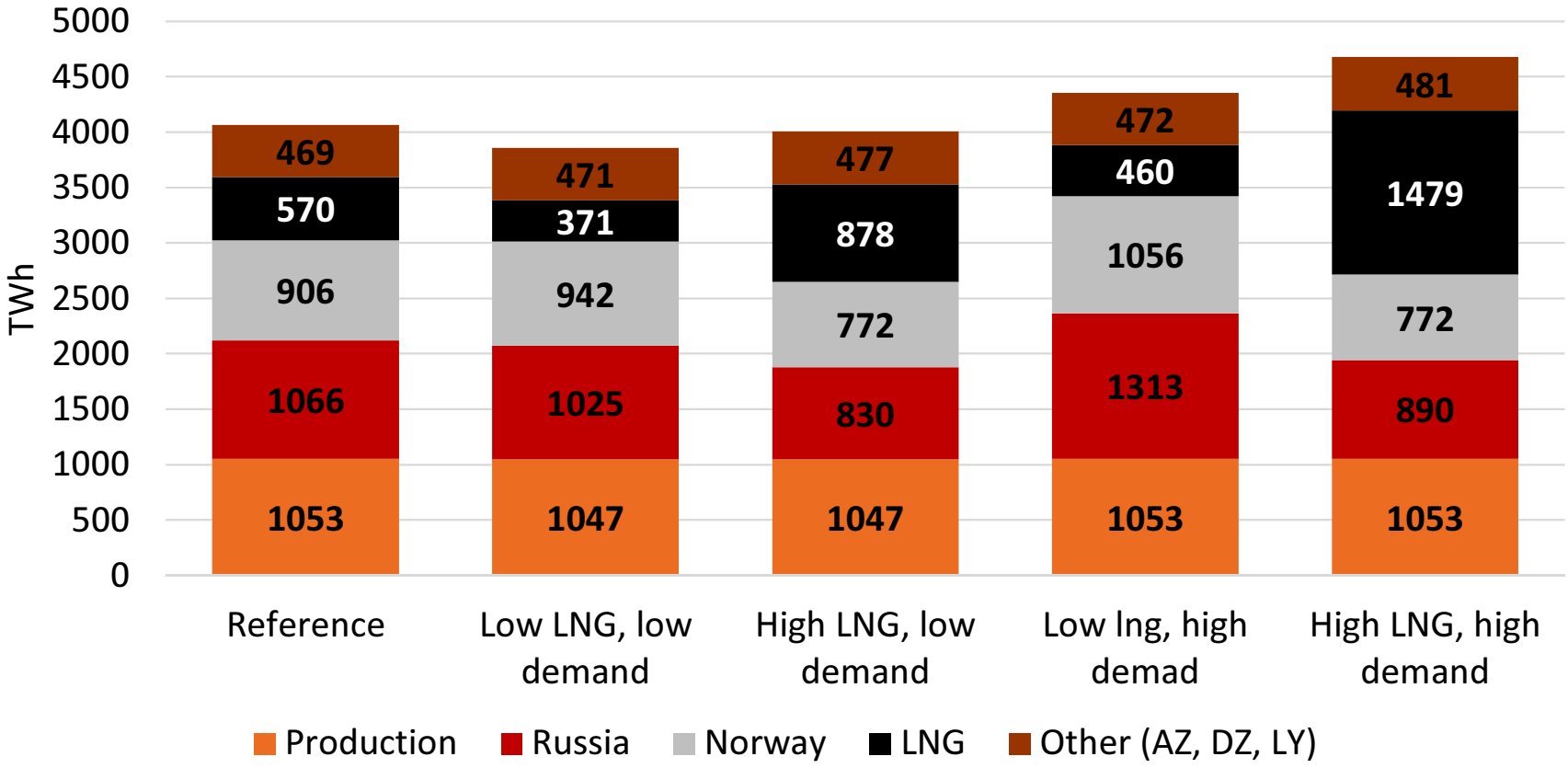
Sensitivities: demand

Figure 1. Demand forecasts for Europe up to 2030 (TWh/yr))



Source: PRIMES, ENTSOG TYNDP and EGMM assumptions

Sensitivities: supply structure



Sensitivities: regional price gap does not widen, prices are up and down in a +/-10% range

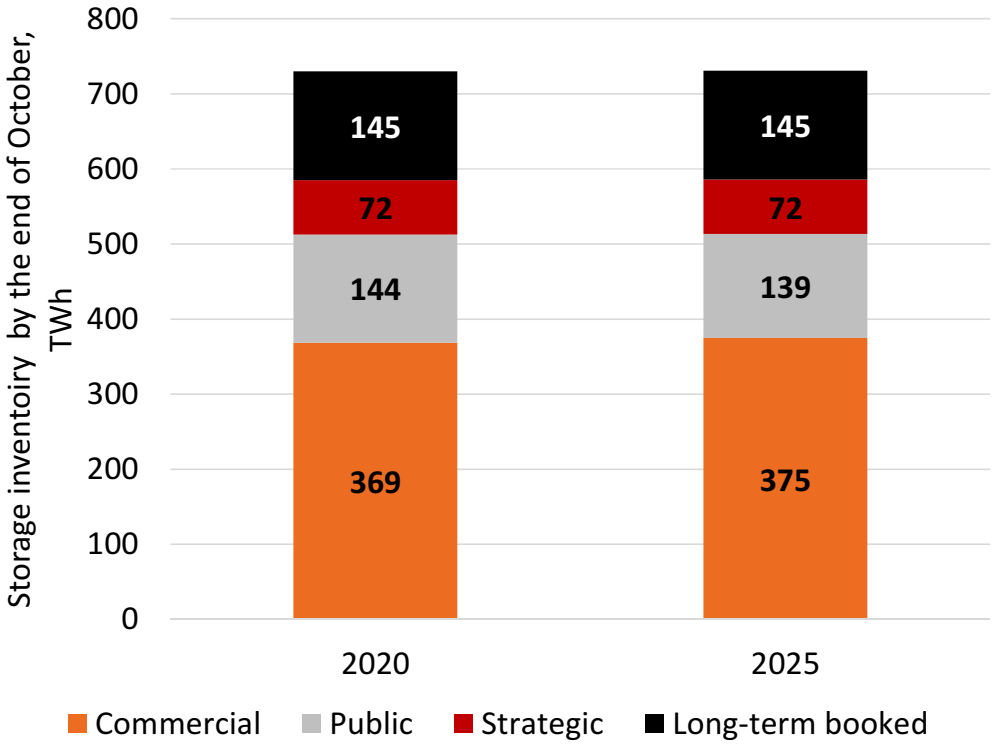
Yearly regional prices in the alternative scenarios (€/MWh)

	ref	low_lng & low_demand	high_lng & low_demnd	low_lng & high_demand	high_lng & high_demand
NWE	17.83	17.95	16.18	18.84	16.61
SEE	18.62	19.36	17.09	21.68	18.78
EU28	18.31	18.45	16.70	20.55	17.39
EnC	22.41	22.43	21.41	23.72	21.81
TR	19.16	24.23	16.54	24.40	16.72

Turkish price is more sensitive for LNG supply +27/-14%

FOCUS ON STORAGE RELATED RESULTS

Results are robust regarding the need for storage: 700-800 TWh on a market basis



Storage inventory in EU28 (TWh/yr)	low LNG	ref LNG	high LNG
high D	801.0	749.4	711.2
ref D	700.0	730.8	705.1
low D	738.8	754.3	708.2

- Modelled yearly storage is ~730TWh.
- Depending on European demand and availability of LNG for Europe storage fill level is between ~700-800 TWh (within a +/-10% range)

More use of available storage withdrawal capacity in SEE than in NWE

Withdrawal utilization is much higher in South East Europe than in North West

Utilization of available withdrawal capacity in ref

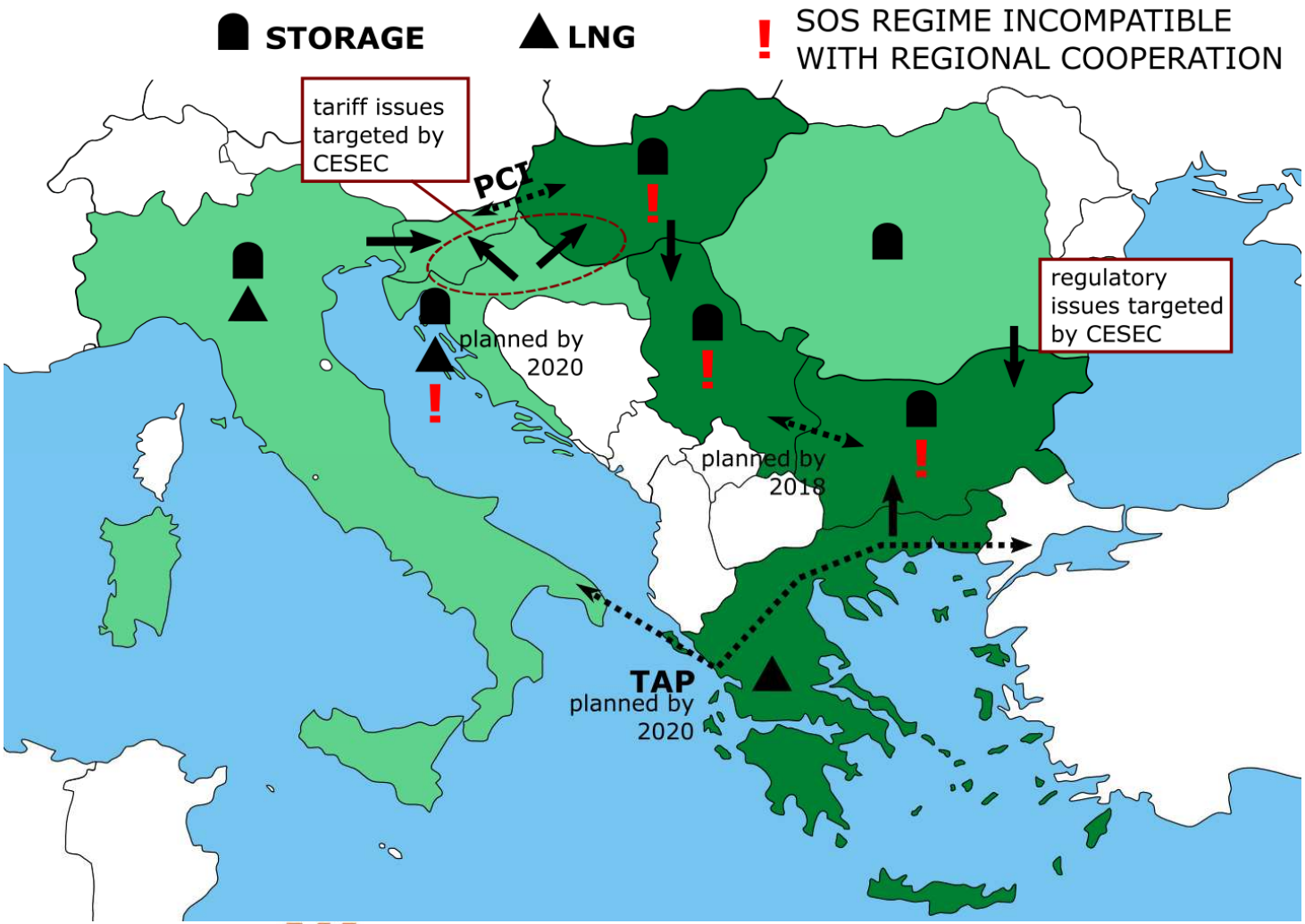
	TWh/Jan	2020	TWh/Jan	2025
SEE	15.9	50%	16	51%
EnC	20.6	40%	22.1	43%
NWE	31.3	12%	29.1	11%
EU28	112.4	22%	112.8	22%

100% used withdrawal capacity modelled

normal FEB	demand shock FEB	normal Jan 2020	normal Jan 2025	demand shock Jan 2025	UA 2025	Nord Stream 2025	TAP 2025	North Africa 2025
-	-	ES	ES	ES	ES	ES	ES	ES
		IE	IE	IE	IE	IE	IE	IE
			BG	BG	BG	BE	BG	BG
				BE				
				HR				

Few storages work critically close to their maximum capacity

More obstacles than opportunities for regional cooperation?



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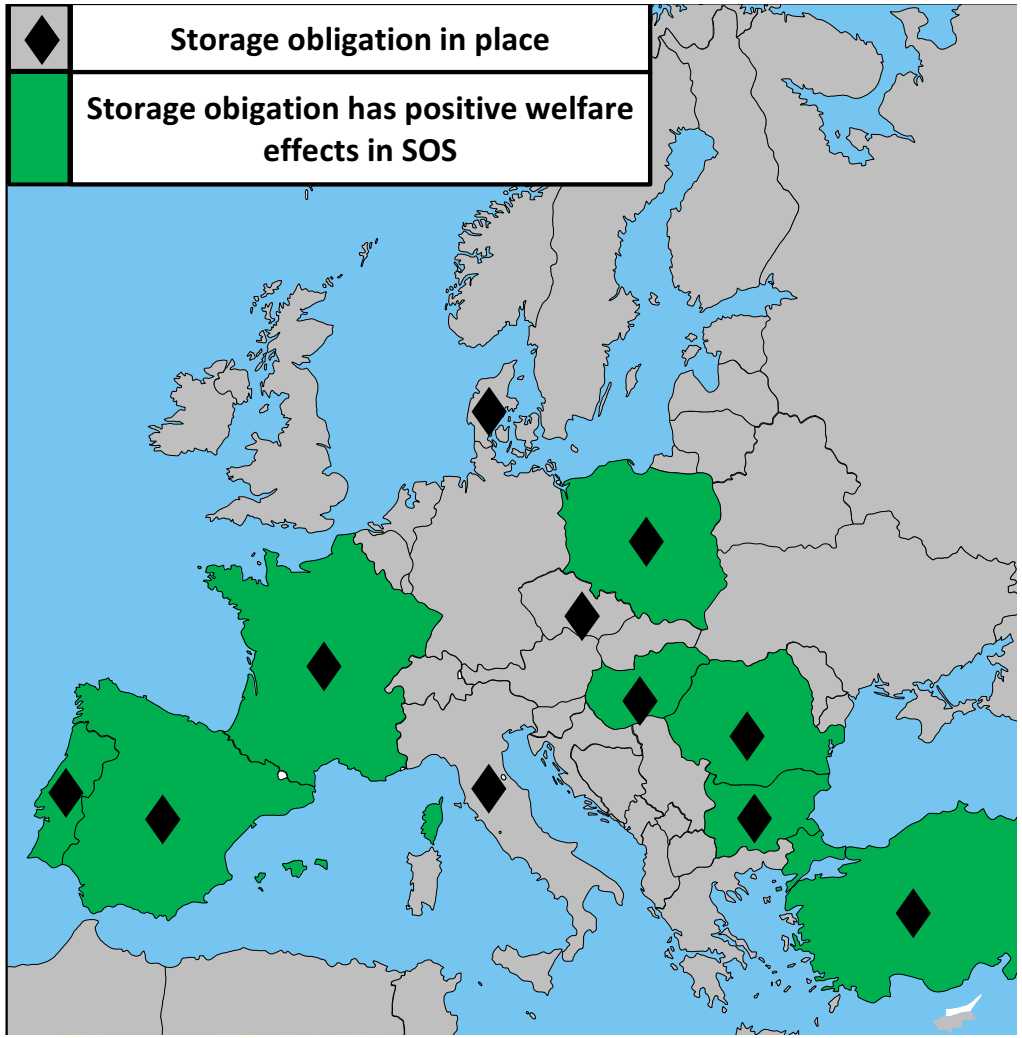
Short- term rationale for storage obligation is confirmed (2020)…

- Modelling confirmed the short-term benefits of storage obligation in certain countries
- Having the stocks in place, consumers are protected from price hikes



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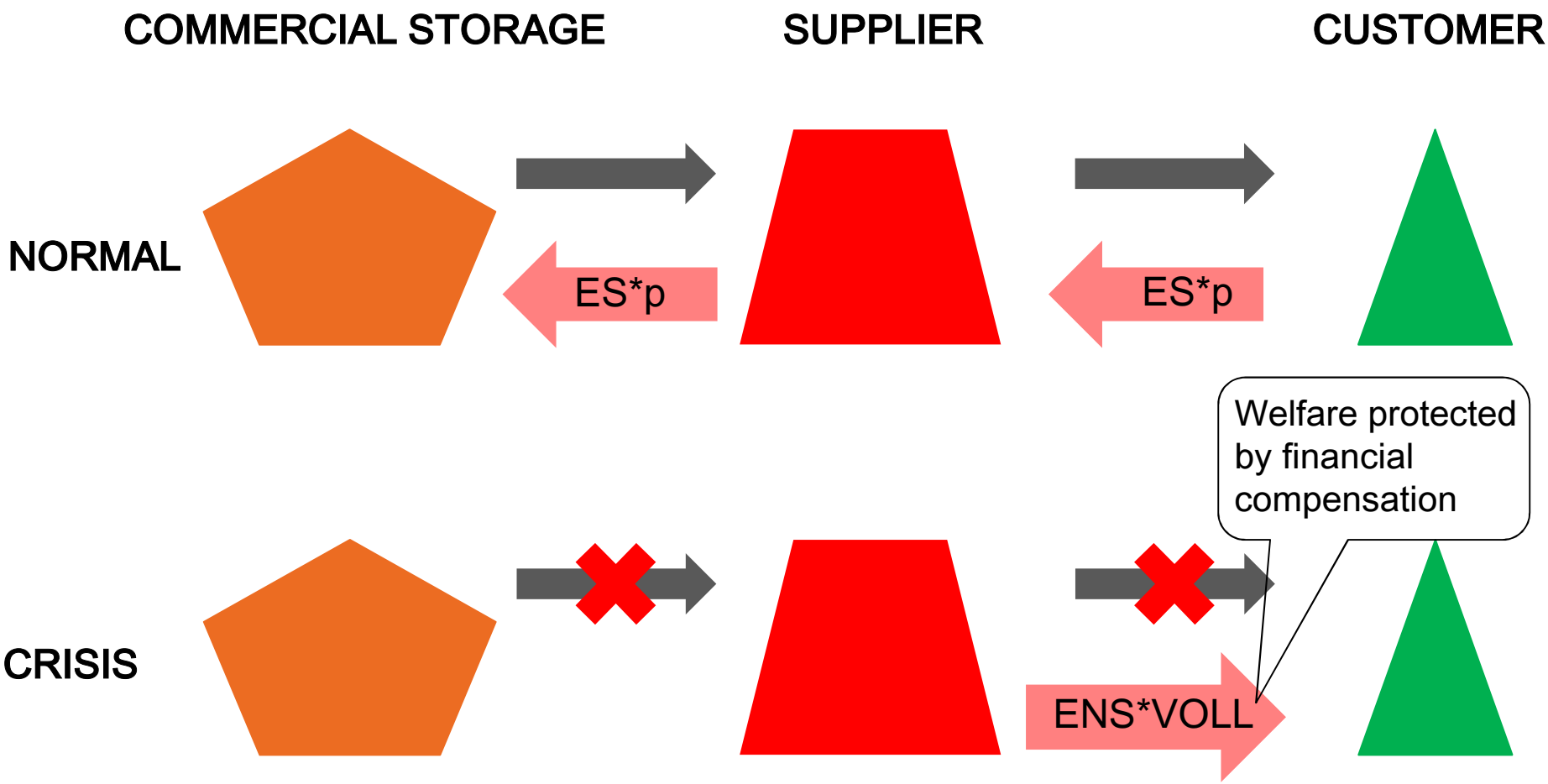
…but also distorts the market

Impact of removing storage obligation results in the reallocation of the same volume of stored gas

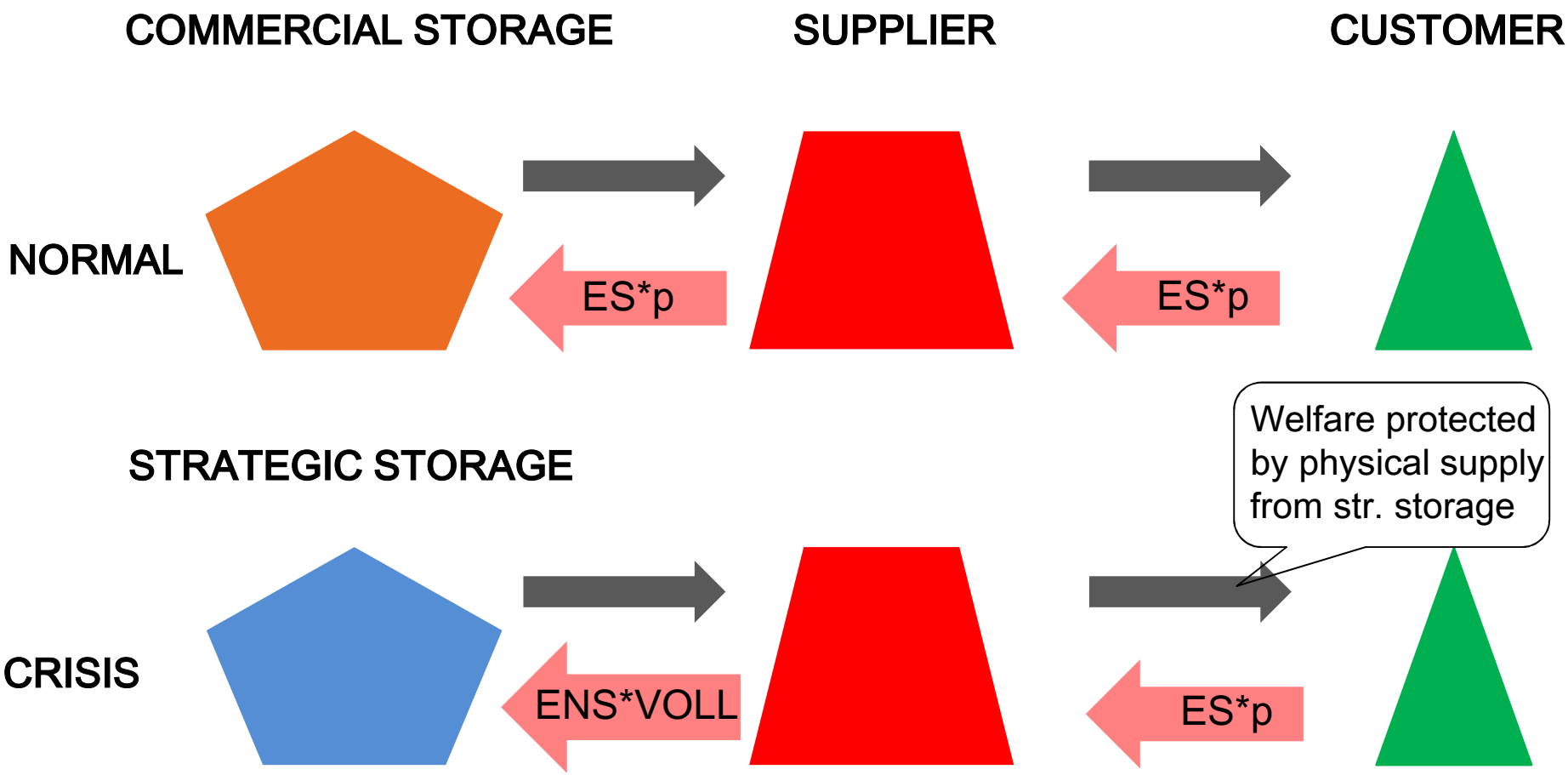
Alternative regulatory scheme

- VOLL-based firm and obligatory financial compensation scheme, which:
  - can ensure that customer welfare is protected even when customer restrictions are unavoidable and implemented;
  - send the proper incentive for suppliers to optimally utilize commercial storage;
  - will contribute to the elimination of legal barriers to cross-border gas trading during gas supply security incidents.
- In each case a supplier can't physically meet its supply contract, it is obliged to pay a firm monetary compensation to its customers that equals the quantity of non-supplied gas times the Value of Lost Load (ENS*VOLL) No *vis major* argument should apply.
- NRAs should produce reliable VOLL estimates for their respective (protected) customers.

Payments and incentives



Payments and incentives



REKK Regional Centre for Energy Policy Research

Thank you for your attention!

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