



# Prospects of LNG markets in Eastern Partner countries

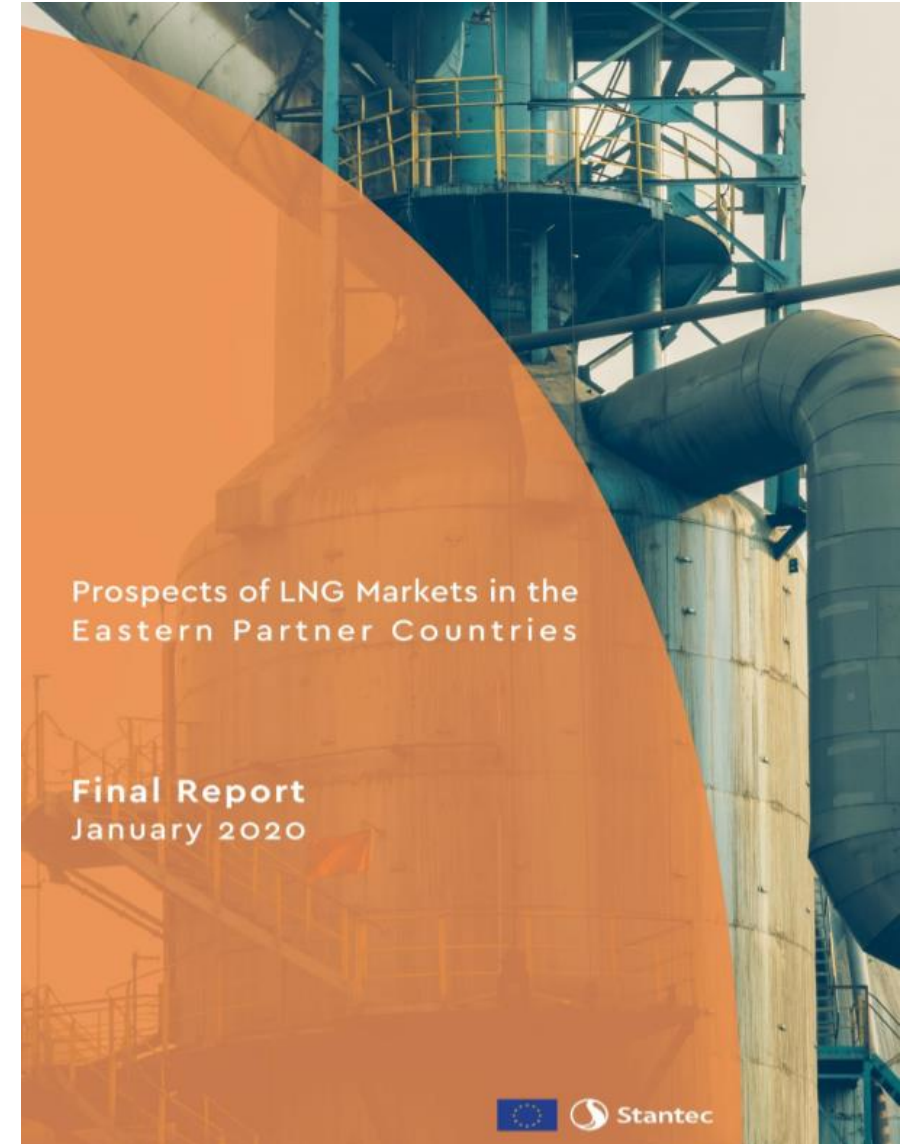
Summary of a study prepared by a consortium  
led by Stantec

*5th Eastern Partnership Energy Panel*

*29 October 2020*

# Purpose

- Identify attractive LNG market development options
- Prepare for establishing these LNG markets
- Identify joint initiatives and actions to facilitate development of LNG markets in the region









# What was assessed?



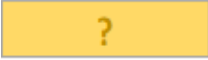
- Price competitiveness of two LNG Market development options
  - Gas-to-Gas Competition
  - Gas-to-Other Fuels Competition

## How?

- Netback Analysis

# Summary of LNG development options

							
<b>Gas-to-Gas Competition</b>	1. Supply of regasified LNG with pipelines					✓	✓
	2. LNG receiving terminal				✓		✓
	3. LNG supply via trucks (or trains)						✓
	5. Swaps				✓		
<b>Gas-to-Other Fuels Competition</b>	1. LNG-fuelled trucks	✓	–	✓	✓		✓
	2. LNG-fuelled ships		?	?			✓
	3. Off-grid consumets (e.g. agriculture, mining)						✓
	4. Off-grid distribution systems		?		–		
	5. Replacement of old distribution pipes with LNG supply						–
	6. Exploitation of remote gas fields						?
	7. Peak shaving LNG storage (e.g. at CHP units)					?	
	8. LNG-fuelled locomotives						?

-  Potentially viable option under current assumptions
-  Not viable option under current assumptions
-  Inconclusive analysis due to lack of data







# Summary of recommendations




## Armenia

### **LNG as engine fuel for trucks**

- 3 potential LNG sources: 1) LNG receiving terminal in Georgia, 2) liquefaction terminal in Georgia, 3) in-country mini liquefaction facility
- Armenia has a sizeable fleet of trucks involved in local, regional and international transport, hence a market for LNG could potentially develop, if LNG is sourced from a Georgian receiving terminal or in-country mini liquefaction facility.

# Summary of LNG development options

							
<b>Gas-to-Gas Competition</b>	1. Supply of regasified LNG with pipelines					✓	✓
	2. LNG receiving terminal				✓		✓
	3. LNG supply via trucks (or trains)						✓
	5. Swaps				✓		
<b>Gas-to-Other Fuels Competition</b>	1. LNG-fuelled trucks	✓	-	✓	✓		✓
	2. LNG-fuelled ships		?	?			✓
	3. Off-grid consumets (e.g. agriculture, mining)						✓
	4. Off-grid distribution systems		?		-		
	5. Replacement of old distribution pipes with LNG supply						-
	6. Exploitation of remote gas fields						?
	7. Peak shaving LNG storage (e.g. at CHP units)					?	
	8. LNG-fuelled locomotives						?

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# Summary of recommendations




## Azerbaijan

### LNG as engine fuel for trucks

- Case of LNG supplies from an in-country mini liquefaction facility:
- Due to low current prices of diesel, switching to LNG cannot be competitive for trucks for the time being.
- Azerbaijan may explore this option for environmental reasons.

# Summary of LNG development options

							
<b>Gas-to-Gas Competition</b>	1. Supply of regasified LNG with pipelines					✓	✓
	2. LNG receiving terminal				✓		✓
	3. LNG supply via trucks (or trains)						✓
	5. Swaps				✓		
<b>Gas-to-Other Fuels Competition</b>	1. LNG-fuelled trucks	✓	-	✓	✓		✓
	2. LNG-fuelled ships		?	?			✓
	3. Off-grid consumets (e.g. agriculture, mining)						✓
	4. Off-grid distribution systems		?		-		
	5. Replacement of old distribution pipes with LNG supply						-
	6. Exploitation of remote gas fields						?
	7. Peak shaving LNG storage (e.g. at CHP units)					?	
	8. LNG-fuelled locomotives						?

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# Summary of recommendations




## Belarus

### LNG as engine fuel for trucks

- LNG sources: 1) LNG terminals in Świnoujście and Klaipeda, or 2) in-country mini liquefaction facility
- LNG supply from close-by Klaipeda terminal can be competitive to diesel (min 200 LNG-fuelled trucks)
- A market could develop for long haulage trucks.
- In case LNG supply prices increase 25% over the base case scenario, the option is non-viable regardless of the source.
- Manufacturing LNG-fuelled trucks locally could lower switching costs, making the market more attractive.

# Summary of LNG development options

							
<b>Gas-to-Gas Competition</b>	1. Supply of regasified LNG with pipelines					✓	✓
	2. LNG receiving terminal				✓		✓
	3. LNG supply via trucks (or trains)						✓
	5. Swaps				✓		
<b>Gas-to-Other Fuels Competition</b>	1. LNG-fuelled trucks	✓	-	✓	✓		✓
	2. LNG-fuelled ships		?	?			✓
	3. Off-grid consumets (e.g. agriculture, mining)						✓
	4. Off-grid distribution systems		?		-		
	5. Replacement of old distribution pipes with LNG supply						-
	6. Exploitation of remote gas fields						?
	7. Peak shaving LNG storage (e.g. at CHP units)					?	
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# Summary of recommendations

## Georgia

### **In-country receiving terminal viability depends on**

- import prices and level of terminal utilization
- future decision on post-2026 import contracts







### **Swaps of LNG with piped gas**




- Requires multilateral agreements in sensitive environment
- LNG price vs contracted gas prices

### **LNG as engine fuel for trucks**

- LNG receiving terminal, liquefaction and export terminal or mini liquefaction facility in the country: viable if supply prices increase and min nr of trucks is ensured
- Sufficient international truck transit could trigger LNG market

# Summary of LNG development options

							
<b>Gas-to-Gas Competition</b>	1. Supply of regasified LNG with pipelines					✓	✓
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	3. LNG supply via trucks (or trains)						✓
	5. Swaps				✓		
<b>Gas-to-Other Fuels Competition</b>	1. LNG-fuelled trucks	✓	-	✓	✓		✓
	2. LNG-fuelled ships		?	?			✓
	3. Off-grid consumets (e.g. agriculture, mining)						✓
	4. Off-grid distribution systems		?		-		
	5. Replacement of old distribution pipes with LNG supply						-
	6. Exploitation of remote gas fields						?
	7. Peak shaving LNG storage (e.g. at CHP units)					?	
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# Summary of recommendations







## Moldova



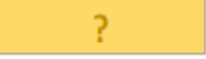
### **Diversification purpose**

- Due to low gas prices, regasified LNG is currently not competitive
- Positive analysis on diversification benefits using LNG in view to enhance the country's gas security of supply

**Gas-to-other fuels competition** could be applicable in Moldova through LNG use for peak shaving

# Summary of LNG development options

							
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	2. LNG receiving terminal				✓		✓
	3. LNG supply via trucks (or trains)						✓
	5. Swaps				✓		
<b>Gas-to-Other Fuels Competition</b>	1. LNG-fuelled trucks	✓	-	✓	✓		✓
	2. LNG-fuelled ships		?	?			✓
	3. Off-grid consumets (e.g. agriculture, mining)						✓
	4. Off-grid distribution systems		?		-		
	5. Replacement of old distribution pipes with LNG supply						-
	6. Exploitation of remote gas fields						?
	7. Peak shaving LNG storage (e.g. at CHP units)					?	
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# Summary of recommendations

## Ukraine

**Gas-to-Gas competition options** depend on gas prices and level of utilisation (regasified LNG with pipelines; LNG receiving terminal)

**LNG as engine fuel for trucks** (LNG terminals in Świnoujście and Klaipeda, UA LNG terminal, or an in-country mini liquefaction facility)

- LNG from neighbouring or in-country receiving terminals can be competitive.
- UA has sizable international long-haul traffic (export/imports and transit).

**LNG supply to off-grid consumers**

- Different types of off-grid consumers with varying characteristics and parameters => the competitiveness of LNG to be examined individually

# Selected proposed regional actions

- Harmonise rules, regulations and standards via technical assistance and coordinate implementation, especially for LNG in transport.
- Share knowledge from EU LNG industry stakeholders, on LNG technologies, markets and development costs.
- Assess potential development for a small-scale liquefaction terminal for regional supply of LNG to trucks.
- Formulate a regional development plan for a network of LNG filling stations in the Eastern Partner countries.



# Thank you

URL to the study publication:

[https://ec.europa.eu/energy/studies/prospects-lng-markets-eastern-partner-countries\\_en](https://ec.europa.eu/energy/studies/prospects-lng-markets-eastern-partner-countries_en)



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Source: Stantec consortium

