

Before going through the content of each specific Project Fiche, please read the introduction document.

Project Group BEMIP_03 - Enhancement of Latvia-Lithuania interconnection + Incukalns UGS

Reasons for grouping [ENTSO G]

The project group aims at enhancing the transmission capacity of the gas systems between Latvia and Lithuania. The group includes the two sides of the investments as well as the enhancer project UGS-F-374.

Objective of the project(s) in the group [Promoter]

The objectives of the projects are to remove bottlenecks in the Baltic gas system and provide positive environment for the development of regional gas market. This is achieved by enhancing the current interconnection capacities at Latvia-Lithuania interconnection and enhancing the Incukalns underground gas storage.



Projects constituting the group

TYNDP Project Code	Project Name	Promoter	Hosting Country	Project Status	4th PCI List Code	First Comm. Year	Last Comm. Year	Compared to TYNP 2018
TRA-A-0342	Enhancement of Latvia-Lithuania interconnection (Lithuania's part)	Amber Grid	LT	Less-Advanced	8.2.1	2023	2023	Rescheduled
TRA-A-0382	Enhancement of Latvia-Lithuania interconnection (Latvian part)	Conexus Baltic Grid	LV	Less-Advanced	8.2.1	2023	2023	Rescheduled
UGS-F-0374	Enhancement of Incukalna UGS	Conexus Baltic Grid	LV	Advanced	8.2.4	2019	2025	Rescheduled

Technical Information

TYNDP Project Code	Diameter [mm]	Length [km]	Compressor Power [MW]
TRA-A-0342*	-	-	-
TRA-A-0382*	-	-	-

* No technical information is displayed as project involve capacity increase at existing IP without investment in new pipeline/CS.

TYNDP Project Code	Injection Capacity Increment [mcm/d]	Withdrawal Capacity Increment [mcm/d]	WGV Increment [mcm]
UGS-F-0374	40	20	0

Capacity Increment

The capacity increment values for each project are provided at all related Interconnection points (IP), both for “exit” and “entry” directions, being indicated the operator of the IP as well as the associated commissioning years of the capacity increments.

This information is presented in the table below and should be read per each line as follows: a certain project, TRA-N-123, can bring at a specific “Point Name” operated by “Operator X” an “exit” capacity increment “From System Y” “To System Z” which has associated an “Increment Commissioning Year”. Equally, for the same “Point Name” and operated by the same “Operator X”, an “entry” (reverse) capacity increment can be available to system “Y” from system “Z” which at its turn has associated an “Increment Commissioning Year”.

TYNDP Project Code	Point Name	Operator	From System	Exit Capacity [GWh/d]	Increment Comm. Year	To System	Entry Capacity [GWh/d]	Increment Comm. Year
TRA-A-342	Kiemenai	AB Amber Grid	Transmission Lithuania	62.87	2023	Transmission Latvia	54.43	2023
TRA-A-382	Kiemenai	Conexus Baltic Grid	Transmission Latvia	54.43	2023	Transmission Lithuania	62.87	2023
UGS-F-374	Incukalna (LV)	Conexus Baltic Grid	Transmission Latvia	8.5	2025	Storage Latvia	-	-
UGS-F-374	Incukalna (LV)	Conexus Baltic Grid	Transmission Latvia	-	-	Storage Latvia	84	2019

B. Project Cost Information

During the TYNDP 2020 Project Data Collection, promoters were asked to indicate whether their costs were confidential or not. The following tables display the costs provided by the promoters (as of June 2019, end of TYNDP 2020 project collection). The amounts provided can differ from the figures used by the project promoters in other contexts, where costs can be updated and/or evaluated using different methodologies or assumptions. For the purposes of this project fiche, in case promoters identified their costs as confidential, alternative costs have been provided by the promoter. The alternative costs are identified with “*”.

	TRA-A-342	TRA-A-382	UGS-F-374	Total Cost
CAPEX [min, EUR]	4.7	5.5	88	98.2
OPEX [min, EUR/y]	0.3	0.04	0.9	1.24
Range CAPEX (%)	10	10	10	-
Range OPEX (%)	10	10	10	-

Description of costs and range [Promoter]

The total cost composes of the following project components:

Enhancement of Latvia-Lithuania interconnection (Lithuania's part)

- Increase of capacity of GMS Kiemenai
- Adjustment of the piping in near Panevezys Compressor Station
- Enhancement of Latvia-Lithuania interconnection (Latvian part)
- Enhancement works of the gas pipelines for increase of maximal operation pressure in transmission system of Latvia up to 50 bar

Enhancement of Incukalna UGS

- Construction and commissioning of the new Gas Collection Point;
- Enhancement of wells;
- Installation of gas compression unit and upgrade of the existing reciprocating gas compression units.

C. Project Benefits

C.1 Summary of project benefits

This section provides a summarised analysis by ENTSG of the main benefits stemming from the realisation of the overall group and according to the guidelines included in the ENTSG 2nd CBA Methodology. More details on the indicators are available in sections D and E.

National Trends

Benefits explained (but Sustainability) [ENTSG]

> Competition:

The project group **slightly improves the diversification of entry points** in Finland, Estonia and Latvia in Advanced infrastructure level. FI-EE-LV is considered in TYNDP 2020 as one single market zone. The commissioning of Paldiski LNG terminal and Tallinn LNG terminal in Estonia included in advanced infrastructure level along with the enhancement of the capacity interconnection between Latvia and Lithuania contribute to the diversification of the whole market area.

Diversification of entry capacities is measured by LNG and Interconnection capacity indicator which is an HHI indicator and ranges from 0 to 10.000 (which represents only one EU entry point) and it does not take into account the import routes. Additionally, the capacity values are constrained by the yearly demand. In this case, the project increases the capacity in the only existing entry point FI-EE-LV market zone; therefore, there is no change in the LICD indicator in Existing or Low infrastructure levels. Likewise, the increment in the entry capacity in Lithuania is higher than its demand, thus there is an impact in LICD indicator neither.

The enhancement of the interconnections in the Baltic countries allows **Lithuania cooperates** with Estonia and Latvia in order to get an **overall decrease of the dependency from Russian gas in the area**. The project also reduces the dependence from Russian gas in Finland in Low infrastructure level thanks to the increase of Baltconnector capacity considered in this level.

> Market integration:

The **bidirectionality between Latvia and Lithuania is slightly improved** at Kiemenai IP (cross-Border Transmission IP within Latvia-Lithuania) achieving 100% with the creation of capacity between these countries.

The project brings benefits in monetised term as a **reduction of the cost of gas supply**. In the reference supply price configuration these can be at around 2 Mln Eur/y (on average) in Existing infrastructure level. Such benefits can be explained by the savings in transportation costs thanks to the utilisation of this new alternative route to provide gas to Estonia and Finland through Latvia.

In case of Russian gas is cheaper than the other sources the benefits are around 3 Mln EUR/y (on average) in Existing infrastructure level and 2 Mln Eur/y (on average) in LOW and Advanced infrastructure levels, thanks to lower transportation costs due to the use of the enhanced Latvia-Lithuania interconnection alternative route.

Distributed Energy

Benefits explained (but Sustainability) [ENTSG]

> Competition:

The project group **slightly improves the diversification of entry points** in Finland, Estonia and Latvia in Advanced infrastructure level. FI-EE-LV is considered in TYNDP 2020 as one single market zone. The commissioning of Paldiski LNG terminal and Tallinn LNG terminal in Estonia included in advanced infrastructure level along with the enhancement of the capacity interconnection between Latvia and Lithuania contribute to the diversification of the whole market area.

Diversification of entry capacities is measured by LNG and Interconnection capacity indicator which is an HHI indicator and ranges from 0 to 10.000 (which represents only one EU entry point) and it does not take into account the import routes. Additionally, the capacity values are constrained by the yearly demand. In this case, the project increases the capacity in the only existing entry point

FI-EE-LV market zone; therefore, there is no change in the LICD indicator in Existing or Low infrastructure levels. Likewise, the increment in the entry capacity in Lithuania is higher than its demand, thus there is an impact in LICD indicator neither.

The enhancement of the interconnections in the Baltic countries allows **Lithuania cooperates** with Estonia and Latvia in order to get an **overall decrease of the dependency from Russian gas in the area**. The project also reduces the dependence from Russian gas in Finland in Low infrastructure level thanks to the increase of Baltconnector capacity considered in this level.

The project **reduces the dependence from Russian gas** in Estonia, Latvia and Lithuania in 2030 in Existing infrastructure level and in 2025 in LOW infrastructure level.

> **Market integration:**

The **bidirectionality between Latvia and Lithuania is slightly improved** at Kiemenai IP (cross-Border Transmission IP within Latvia-Lithuania) achieving 100% with the creation of capacity between these countries.

The project brings benefits in monetised term as a **reduction of the cost of gas supply**. In the reference supply price configuration these can be at almost 1 Mln Eur/y (on average) in Existing infrastructure level. Such benefits can be explained by the savings in transportation costs thanks to the utilisation of this new alternative route to provide gas to Estonia and Finland through Latvia.

The project brings benefits in monetised term as a **reduction of the cost of gas supply** in case of Russian gas is cheaper than the other sources (around 2 Mln Eur/y on average in Existing infrastructure level and 1 Mln Eur/y in LOW and Advanced infrastructure levels) thanks to lower transportation costs due to the use of the enhanced Latvia-Lithuania interconnection alternative route.

Global Ambition

Benefits explained (but Sustainability) [ENTSOG]

> **Security of Supply:**

Regarding the supply import routes disruptions:

In the case of **Baltics-Finland disruption** In Low infrastructure level, the project fully mitigates the risk of demand curtailment in Lithuania in 2040 for Peak day

In the case of **Belarus disruption**, in Low and Advanced infrastructure level, the project fully mitigates the risk of curtailment rate in Low and Advanced infrastructure levels in Lithuania in Peak day. Lithuania does not face any risk of demand curtailment in Existing infrastructure level while in Low and Advanced infrastructure levels some complementary projects allows Lithuania to cooperate with the neighbouring countries.

In case of **SLID-Lithuania**, the project fully mitigates the risk of demand curtailment in Lithuania in Low infrastructure level in 2040. Lithuania is only impacted in Low infrastructure level because in this case the commissioning of GIPL interconnection between Poland and Lithuania allows them to cooperate in order to reduce the overall curtailment in the area.

> **Competition:**

The project group **slightly improves the diversification of entry points** in Finland, Estonia and Latvia in Advanced infrastructure level. FI-EE-LV is considered in TYNDP 2020 as one single market zone. The commissioning of Paldiski LNG terminal and Tallinn LNG terminal in Estonia included in advanced infrastructure level along with the enhancement of the capacity interconnection between Latvia and Lithuania contribute to the diversification of the whole market area.

Diversification of entry capacities is measured by LNG and Interconnection capacity indicator which is an HHI indicator and ranges from 0 to 10.000 (which represents only one EU entry point) and it does not take into account the import routes. Additionally, the capacity values are constrained by the yearly demand. In this case, the project increases the capacity in the only existing entry point FI-EE-LV market zone; therefore, there is no change in the LICD indicator in Existing or Low infrastructure levels. Likewise, the increment in the entry capacity in Lithuania is higher than its demand, thus there is an impact in LICD indicator neither.

The enhancement of the interconnections in the Baltic countries allows **Lithuania cooperates** with Estonia and Latvia in order to get an **overall decrease of the dependency from Russian gas in the area**. The project also reduces the dependence from Russian

gas in in Estonia, Latvia in Existing and Estonia, Latvia and Lithuania in Low infrastructure level thanks to the increase of Baltconnector capacity considered in this level.

> Market integration:

The **bidirectionality between Latvia and Lithuania is slightly improved** at Kiemenai IP (cross-Border Transmission IP within Latvia-Lithuania) achieving 100% with the creation of capacity between these countries.

The project brings benefits in monetised term as a **reduction of the cost of gas supply** in case of Russian gas is cheaper than the other sources (around 1 Mln Eur/y on average in all infrastructure levels) thanks to lower transportation costs due to the use of the enhanced Latvia-Lithuania interconnection alternative route.

Sustainability benefits explained [ENTSOG]

Project groups BEMIP_03 does not show significant benefits from fuel switch under flow-based allocation.

The table below shows the related reduction in terms of CO₂eq/y for each scenario and infrastructure level and over the 25-years assessment period of the project group. The contribution of the project group to the CO₂eq/y emissions (positive number indicate reduction in CO₂eq/y emissions) is also displayed for the three simulation configurations that consider different level of tariffs for the project group.

Sustainability		EXISTING			LOW			ADVANCED		
CO ₂ and Other externalities (KtCO ₂ eq/y)	Reference	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0
	Lower Tariff Sensitivity	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0
	Higher Tariff Sensitivity	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0

The minimum and the maximum values displayed in the table above refer respectively to the CO₂eq/y savings in case emissions from the additional gas demand increase not replacing other more polluting fuels are counted in the overall CO₂eq emissions assessment or they are considered neutral. For more information, please consult the Project Fiche introduction document and the TYNDP 2020 Annex D.










Sustainability benefits explained [Promoter]

No additional benefits were provided by promoters.

C.2 Quantitative benefits [ENTSOG]

The following tables display all the benefits quantified by ENTSOG through specific indicators and stemming from the realisation of the considered project group. Some of those benefits are measured through quantitative indicators (i.e. SLID and Curtailment rate) and monetised ex-post. Their monetised value is displayed in section E. When assessing those type of benefits, it is important to avoid any double counting considering them both in quantitative and monetised terms.

EXISTING Infrastructure Level – National Trends

Sum of Value		Column Labels 											
		 2025						 2030			 2040		
		 CBG			 GBC			 NT			 NT		
Row Labels		 WITHOUT	WITH	DELTA	WITHOUT	WITH	DELTA	WITHOUT	WITH	DELTA	WITHOUT	WITH	DELTA
Competition													
MASD-RU													
	Estonia	45%	34%	-11%	48%	39%	-9%	23%	16%	-7%	19%	14%	-6%
	Latvia	45%	34%	-11%	47%	39%	-8%	23%	16%	-7%	19%	13%	-6%
Market Integration													
Bi-directionality - Point													
	Kiemenai	96%	100%	4%	96%	100%	4%	96%	100%	4%	96%	100%	4%

LOW Infrastructure Level – National Trends

Sum of Value		Column Labels											Y	
		2025						2030			2040			
		CBG			GBC			NT			NT			
Row Labels		WITHOUT	WITH	DELTA	WITHOUT	WITH	DELTA	WITHOUT	WITH	DELTA	WITHOUT	WITH	DELTA	
Competition														
MASD-RU														
	Estonia	42%	30%	-12%	47%	33%	-14%	36%	30%	-6%				
	Finland	42%	30%	-12%	47%	33%	-14%	36%	30%	-6%				
	Latvia	41%	30%	-11%	46%	33%	-13%	35%	30%	-5%				
Market Integration														
Bi-directionality - Point														
	Kiemenai	96%	100%	4%	96%	100%	4%	96%	100%	4%	96%	100%	4%	

ADVANCED Infrastructure Level – National Trends

Sum of Value		Column Labels											
		2025			2030			2040					
		CBG			GBC			NT					
Row Labels		WITHOUT	WITH	DELTA	WITHOUT	WITH	DELTA	WITHOUT	WITH	DELTA	WITHOUT	WITH	DELTA
Competition													
LNG and Interconnection Capacity Diversification (LICD)													
	Estonia	5,401	5,007	-394	5,401	5,007	-394	5,244	5,000	-244	5,121	5,000	-121
	Finland	5,401	5,007	-394	5,401	5,007	-394	5,244	5,000	-244	5,121	5,000	-121
	Latvia	5,401	5,007	-394	5,401	5,007	-394	5,244	5,000	-244	5,121	5,000	-121
Market Integration													
Bi-directionality - Point													
	Kiemenai	96%	100%	4%	96%	100%	4%	96%	100%	4%	96%	100%	4%

EXISTING Infrastructure Level – Distributed Energy

Sum of Value		Column Labels											
		2025			2030			2040					
		CBG			GBC			DE					
Row Labels		WITHOUT	WITH	DELTA	WITHOUT	WITH	DELTA	WITHOUT	WITH	DELTA	WITHOUT	WITH	DELTA
Competition													
MASD-RU													
	Estonia	35%	23%	-12%	37%	26%	-11%	11%	3%	-8%			
	Latvia	35%	23%	-12%	37%	25%	-12%	11%	3%	-8%			
	Lithuania							6%	2%	-4%			
Market Integration													
Bi-directionality - Point													
	Kiemenai	96%	100%	4%	96%	100%	4%	96%	100%	4%	96%	100%	4%

LOW Infrastructure Level – Distributed Energy

Sum of Value		Column Labels											
		2025			2030			2040					
		CBG			GBC			DE					
Row Labels		WITHOUT	WITH	DELTA	WITHOUT	WITH	DELTA	WITHOUT	WITH	DELTA	WITHOUT	WITH	DELTA
Competition													
MASD-RU													
Estonia		48%	35%	-13%	50%	38%	-12%						
Finland		49%	35%	-14%	50%	38%	-12%						
Latvia		48%	35%	-13%	50%	38%	-12%						
Market Integration													
Bi-directionality - Point													
Kiemenai		96%	100%	4%	96%	100%	4%	96%	100%	4%	96%	100%	4%

ADVANCED Infrastructure Level – Distributed Energy

Sum of Value		Column Labels											
		2025						2030			2040		
		CBG			GBC			DE			DE		
Row Labels		WITHOUT	WITH	DELTA	WITHOUT	WITH	DELTA	WITHOUT	WITH	DELTA	WITHOUT	WITH	DELTA
Competition													
LNG and Interconnection Capacity Diversification (LICD)													
	Estonia	5,401	5,007	-394	5,401	5,007	-394	5,744	5,030	-714	5,117	5,000	-117
	Finland	5,401	5,007	-394	5,401	5,007	-394	5,744	5,030	-714	5,117	5,000	-117
	Latvia	5,401	5,007	-394	5,401	5,007	-394	5,744	5,030	-714	5,117	5,000	-117
Market Integration													
Bi-directionality - Point													
	Kiemenai	96%	100%	4%	96%	100%	4%	96%	100%	4%	96%	100%	4%

EXISTING Infrastructure Level – Global Ambition

Sum of Value		Column Labels											
		2025						2030			2040		
		CBG			GBC			GA			GA		
Row Labels		WITHOUT	WITH	DELTA	WITHOUT	WITH	DELTA	WITHOUT	WITH	DELTA	WITHOUT	WITH	DELTA
Competition													
MASD-RU													
	Estonia	35%	23%	-12%	37%	26%	-11%	27%	23%	-4%			
	Latvia	35%	23%	-12%	37%	25%	-12%	27%	23%	-4%			
Market Integration													
Bi-directionality - Point													
	Kiemenai	96%	100%	4%	96%	100%	4%	96%	100%	4%	96%	100%	4%

LOW Infrastructure Level – Global Ambition

Sum of Value		Column Labels											
		2025						2030			2040		
		CBG			GBC			GA			GA		
Row Labels		WITHOUT	WITH	DELTA	WITHOUT	WITH	DELTA	WITHOUT	WITH	DELTA	WITHOUT	WITH	DELTA
Competition													
MASD-RU													
	Estonia	42%	30%	-12%	47%	33%	-14%	39%	34%	-5%			
	Finland	42%	30%	-12%	47%	33%	-14%	40%	34%	-6%			
	Latvia	41%	30%	-11%	46%	33%	-13%	39%	34%	-5%			
Security of Supply													
Baltics Finland Disruption Curtailment Rate Peak Day (%)													
	Lithuania										-9%	0%	9%
Belarus Disruption Curtailment Rate Peak Day (%)													
	Lithuania										-9%	0%	9%
Single Largest Infrastructure Disruption (SLID)-Lithuania													
	Lithuania										9%	0%	-9%
Market Integration													
Bi-directionality - Point													
	Kiemenai	96%	100%	4%	96%	100%	4%	96%	100%	4%	96%	100%	4%

ADVANCED Infrastructure Level – Global Ambition

Sum of Value		Column Labels											
		2025			2030			2040					
		CBG			GBC			GA			GA		
Row Labels		WITHOUT	WITH	DELTA	WITHOUT	WITH	DELTA	WITHOUT	WITH	DELTA	WITHOUT	WITH	DELTA
Competition													
LNG and Interconnection Capacity Diversification (LICD)													
	Estonia	5,362	5,000	-362	5,401	5,004	-397	5,834	5,055	-779	5,510	5,000	-510
	Finland	5362	5000	-362	5401	5004	-397	5834	5055	-779	5510	5000	-510
	Latvia	5,362	5,000	-362	5,401	5,004	-397	5,834	5,055	-779	5,510	5,000	-510
Security of Supply													
Belarus Disruption Curtailment Rate Peak Day (%)													
	Lithuania										-2%	0%	2%
Market Integration													
Bi-directionality - Point													
	Kiemenai	96%	100%	4%	96%	100%	4%	96%	100%	4%	96%	100%	4%

C.3 Monetised benefits [ENTSOG]

This section includes all benefits stemming from the realisation of a project that are quantified and monetised. Some benefits are monetised ex-post while others directly as a result of the simulations and are impacted by the modelling assumptions chosen (e.g. tariffs or supply price assumptions). Monetised benefits are showed at EU level. In order to keep the results in a manageable number, those have been aggregated per Infrastructure Level and Demand Scenarios. In line with the CBA Methodology, promoters could provide additional benefits related to Sustainability or Gasification. In the tables below these benefits are displayed separately from the ones computed directly by ENTSG and are labelled as “(Promoter)”. More information on how to read the data in this section is provided in the Introduction Document.

Benefits (Meur/year)		EXISTING			LOW			ADVANCED		
		NATIONAL TRENDS	DISTRIBUTED ENERGY	GLOBAL AMBITION	NATIONAL TRENDS	DISTRIBUTED ENERGY	GLOBAL AMBITION	NATIONAL TRENDS	DISTRIBUTED ENERGY	GLOBAL AMBITION
EU Bill benefits	Reference Supply	1.7	0.8	0.2	0.0	0.4	0.0	0.3	0.4	0.0
With Tariffs	Supply Maximization	3.1	1.8	1.5	0.9	0.9	1.0	1.1	0.8	1.0
Security of Supply	Design Case	0.0	0.0	0.0	0.0	0.1	0.7	0.0	0.0	0.2
	2-weeks Cold Spell	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2-weeks Cold Spell DF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sustainability	CO2 and Other externalities savings	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
	Additional benefit (Promoter)	0	0	0	0	0	0	0	0	0

Comparison between the assessed SCENARIOS

ENTSOG runs the assessment for 5-year-rounded years (2020, 2025, 2030 and 2040) and interpolates these results to compute the benefits for the 25-years economic lifetime of projects. The following tables show the benefits as computed in the specific assessment years.

Year of assessment		2020									2025								
		EXISTING			LOW			ADVANCED			EXISTING			LOW			ADVANCED		
Benefits (Meur/year)		NT	DE	GA	NT	DE	GA	NT	DE	GA	NT	DE	GA	NT	DE	GA	NT	DE	GA
EU Bill benefits With Tariffs	Reference Supply	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.6	0.6	0.0	0.0	0.0	0.1	0.1	0.1
	Supply Maximization	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.7	1.7	1.7	0.0	0.0	0.0	0.1	0.1	0.1
Security of Supply	Design Case	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2-weeks Cold Spell	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2-weeks Cold Spell DF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sustainability	CO2 and Other externalities savings	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
	Additional benefit (Promoter)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Year of assessment		2030									2040								
		EXISTING			LOW			ADVANCED			EXISTING			LOW			ADVANCED		
Benefits (Meur/year)		NT	DE	GA	NT	DE	GA	NT	DE	GA	NT	DE	GA	NT	DE	GA	NT	DE	GA
EU Bill benefits With Tariffs	Reference Supply	2.4	2.3	0.2	0.0	0.0	0.0	1.0	0.0	0.0	2.6	0.0	0.0	0.0	1.3	0.0	0.0	1.2	0.0
	Supply Maximization	4.3	4.7	3.9	1.1	0.8	0.1	1.7	0.5	0.1	4.3	0.0	0.0	1.8	2.8	2.9	1.8	2.4	2.9
Security of Supply	Design Case	0.0	0.0	0.0	0.0	0.1	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.0	0.4
	2-weeks Cold Spell	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2-weeks Cold Spell DF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sustainability	CO2 and Other externalities savings	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
	Additional benefit (Promoter)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

In line with ENTSG Adapted 2nd CBA Methodology, ENTSG has also run sensitivities on some relevant assumptions such as tariffs, commissioning year and lower supply source price differential. The results included in the tables below have to be compared with the ones included in section C.3. Further information is available in the common introduction (Pages 1-6) to all project fiches. Independently from the source of the input as described in C3 (ENTSG or Promoter), the sensitivity analysis has been carried out by ENTSG and according to the criteria in the approved CBA Methodology.

[illegible]

D. Environmental Impact [Promoter]

Any gas infrastructure has an impact on its surroundings. This impact is of particular relevance when crossing some environmentally sensitive areas. Mitigation measures are taken by the promoters to reduce this impact and comply with the EU and National regulations. The Tables have been filled in by the promoter.

TYNDP Code	Type of infrastructure	Surface of impact	Environmentally sensitive area

Potential impact	Mitigation measures	Related costs included in project CAPEX and OPEX	Additional expected costs

Environmental Impact explained [Promoter]

Environmental impact assessments for the projects have not indicated any substantial and irreversible impacts on the environment. In order to ensure that environmental assessments are correct, environmental monitoring is carried out before, during and after the construction of the infrastructure.

The project of Enhancement of Latvia-Lithuania interconnection related construction and operation activities have been analyzed for eligibility for Environmental Impact Assessment (EIA) or initial screening procedures. The analysis has been based on national regulatory acts in Latvia and Lithuania, which implement the EIA Directive. Given the fact that the Feasibility study provided the technical solution for the implementation of the project, i.e. the reconstruction, readjustment or upgrade of existing pipelines for the transport of gas and related infrastructure, e.g. CS and GMS (and not construction / installation of new infrastructure of such type), the project or intended activity should not be a subject of the EIA or initial screening.

Incukalna UGS enhancement project will decrease the gas used for the compressors running, contribute to improving the overall environmental performance by decreasing hydrocarbons, CO₂ and NO_x emissions to the atmosphere.

E. Other Benefits [Promoter]

Missing benefits are all benefits of a project which may be not captured by the current application in TYNDP 2020 of the 2nd CBA Methodology.

As a necessary condition a missing benefit cannot have discrepancies with the benefits already covered by the assessment run by ENTSOG and this condition needs to be proved and justified.

Other benefits explained

The enhancement of Incukalna UGS project is aimed at the increase of the daily withdrawal capacity from the storage especially in the end of the withdrawal season and increase of flexibility of gas supply. It is essential for securing of the reliable operation of the storage after increase of the max operation pressure in the Latvian transmission system to 50 bar.

The other benefits are:

- Improvement of the regional security of supply by ensuring flexibility in supply and availability of gas.

To ensure the needs of the common gas supply system of the region and to avoid such security problems as peak loads, emergency situations and supply disruption IUGS shall ensure stable and firm supply

- Supporting diversification of gas supply sources in the Baltic States through facilitating efficient use of the storage

Storage effectively functions as additional gas source in region. Seasonal use of storage allows optimising gas deliveries from LNG markets

- Promoting wholesale market development, facilitating price improvements

Increasing liquidity though immediately available gas in storage increases competition between suppliers and results in stabilization of gas price

- Facilitating the development of a regional energy market in the East Baltic region

Stable and firm extraction capacity of IUGS will enable further integration of Baltic energy market to continental Europe and the Nordic zone and assure the increased demand in the region.

F. Useful Links

The project website:

Enhancement of Latvia – Lithuania interconnection (Lithuanian part): www.ambergrid.lt/en/transmission-system/development-of-the-transmission-system/enhancement-Latvia-Lithuania-interconnection

Enhancement of Latvia – Lithuania interconnection (Latvian part): <https://www.conexus.lv/ipgk-modernizacijas-projekti-eng/latvijas-lietuvassarpasvienojuma-uzlabosana>

Enhancement of Incukalna UGS: <https://www.conexus.lv/ipgk-modernizacijas-projekti-eng/pci-projekts-824-kapitalieguldijumu-pieprasijums-incukalna-ugs-attistibai>

Network Development Plan: www.ambergrid.lt/en/transmission-system/development-of-the-transmission-system/gas-transmission-system-development-plan