

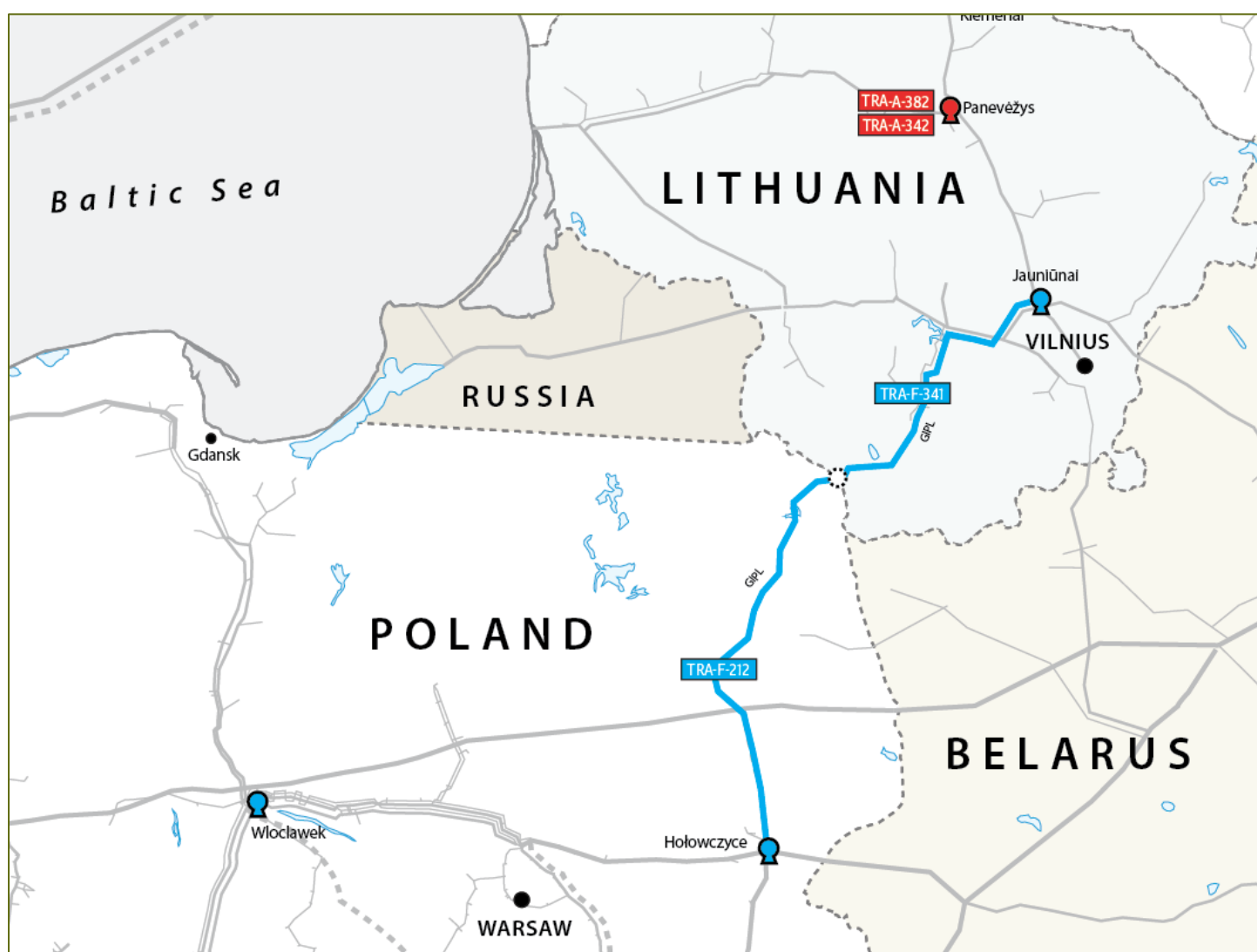
Project Group BEMIP_05B - GIPL + Enhancement of Latvia-Lithuania interconnection

Reasons for grouping [ENTSO G]

Project group is composed of new interconnection between Poland and Lithuania (GIPL) two sides of the investment, together with the enhancer projects of interconnection Latvia-Lithuania.

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

The main purpose of the project group is to integrate gas markets of the Baltic States and Finland into a common EU gas market, thus increasing the security and reliability of gas supply and competition, enabling more flexible and efficient use of LNG terminals, transmission and storage infrastructure, remove bottlenecks in the Baltic gas system. This could be achieved by enhancing the current interconnection capacities at Latvia-Lithuania and building a new interconnection between Poland and Lithuania (GIPL).



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-F-0341	Gas Interconnection Poland-Lithuania (GIPL) (Lithuania's section)	Amber Grid	LT	FID	8.5	2021	2021	On time
TRA-F-0212	Gas Interconnection Poland-Lithuania (GIPL) - PL section	GAZ-SYSTEM	PL	FID	8.5	2021	2021	On time
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

Technical Information

TYNDP Project Code	Diameter [mm]	Length [km]	Compressor Power [MW]
TRA-A-0342	-	-	-
TRA-A-0382	-	-	-
TRA-F-0212	700	343	-
TRA-F-0212	-	-	16
TRA-F-0341	700	165	-

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
TRA-F-212	Interconnector PL-LT	GAZ-SYSTEM S.A.	Transmission Poland (VTP - GAZ-SYSTEM)	73.9	2021	Transmission Lithuania	58.3	2021
TRA-F-341	Interconnector PL-LT	AB Amber Grid	Transmission Lithuania	58.3	2021	Transmission Poland (VTP - GAZ-SYSTEM)	73.9	2021

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	TRA-F-212	TRA-F-341	Total Cost
CAPEX [min, EUR]	4.7	5.5	430*	136	576.2
OPEX [min, EUR/y]	0.3	0.04	11*	1.83	13.17
Range CAPEX (%)	10	10	5	10	-
Range OPEX (%)	10	10	0	14	-

Description of costs and range [Promoter]

The GIPL pipeline will run from Jauniūnai Gas Compressor Station (GCS) in Širvintos district on the Lithuanian side to Hołowczyce GCS on the Polish side. The investments on the territories of Lithuania and Poland will consist of:

- Construction of a new pipeline (Lithuania and Poland)
- New GCS (Gustorzyn) in Poland.

Enhancement of Latvia-Lithuania interconnection consists of two parts:

- Lithuanian part-> Increase of capacity of GMS Kiemenai and readjustment of the piping in territory of Panevezys Compressor Station
- Latvian part – > Enhancement works of the gas pipelines for increase of maximal operation pressure in transmission system of Latvia up to 50 bar.

The investment may range up to 10% due to changes in the supply markets for pipes and services.

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]

> Security of Supply:

In the existing infrastructure level, the project group **provides additional remaining flexibility** to the Polish gas system when facing all climatic stress conditions in 2025 and 2030. However, in 2040 mainly due to the higher demand in Poland related to coal and oil displacements in both heating and power generation sectors, the project group **reduces the risk of demand curtailment** in Poland under peak and 2-week dunkelflaute (DF) climatic stress conditions.

Situation improves in the low and advanced infrastructure levels, where the project group **improves remaining flexibility** in Poland also in 2040 for all climatic stress conditions and even higher levels of remaining flexibility are reached in the advanced infrastructure level.

Regarding the supply import routes disruptions:

In case of **Belarus disruption**, for the existing infrastructure level, the project group **fully mitigates the risk of demand curtailment** in Poland in 2030 for 2-weeks and 2-weeks dunkelflaute climatic cases and also **reduces the risk of demand curtailment** in Poland in 2025 peak and from 2030 for all climatic stress conditions. This situation will also improve in the low and advanced infrastructure levels with the implementation of FID and Advanced projects in Poland and neighbouring countries, leading to full mitigation of the risk of demand curtailment in 2025 and 2030 and significant reduction of curtailment rates in 2040 peak-day and 2-weeks dunkelflaute stress cases in the low infrastructure level and additional remaining flexibility in the advanced infrastructure level.

In case of **Ukrainian disruption**, in the existing infrastructure level, the project group significantly **reduces the risk of demand curtailment** in Poland for 2-week dunkelflaute and peak climatic stress cases in 2040. This situation also improves in the low infrastructure level, reaching even lower curtailment rates in peak case 2040 and full mitigation in the advanced infrastructure level.

For **Single Largest Infrastructure Disruption in Poland** (SLID-PL indicator) the project group **mitigates the risk of demand curtailment** in Poland from 2025 in the existing infrastructure level and only in 2040 in the low infrastructure level, thanks to the implementation of FID projects in Poland, Baltic region and its neighbouring countries.

> Competition:

With the new interconnection between Poland and Lithuania, the project group increases diversification of gas supply sources in the Baltic region. Thanks to the projects group, Estonia, Finland, Latvia, and Lithuania **will have more access to Norwegian gas** from 2025 in all infrastructure levels. The highest access to Norwegian supplies is observed in the advanced infrastructure level, thanks to the implementation of Baltic pipe included in this infrastructure level.

The project group **contributes to the diversification of entry points reducing the LICD** in Lithuania and Poland in all infrastructure levels and also in Estonia, Finland, Latvia in Advanced infrastructure level thanks to the advanced-status project in Estonia (LNG terminal) and the consideration of one market zone (LV-EE-FI).

> Market integration:

The project group brings benefits in monetised term as a **reduction of the cost of gas supply**. In the reference supply price configuration this can be estimated around 27 MEur/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 together with higher LNG supply coming from LNG terminal in Lithuania. Sensitivity analysis on tariffs show in fact lower benefits in case of more expensive tariffs (up to 8 MEUR/y on the reference supply price configuration).

Few additional benefits compared to the reference situation can be observed in the case of expensive Russian or cheap LNG supply price configuration up to 27.3 MEur/y on average in the existing infrastructure level. Such benefits are driven by the fact that the project group allows the Baltic region to rely on alternative sources such as LNG when Russian supplies are expensively priced, allowing Baltic region and Poland to further benefit from a decrease in LNG supply prices thanks to the utilisation of this new alternative route, and therefore reduce Russian supplies flowing through YAMAL and Belarus.

In case of low infrastructure level, the project group brings less benefits compared to existing infrastructure level, this is driven by the lower cost of European supplies which are reduced thanks to the utilization of FID infrastructure. However, in the Advanced infrastructure level benefits are reduced due to the commissioning of advanced projects in Poland (i.e. Baltic Pipe).

The **bidirectionality is improved** with the creation of capacity from Poland to Lithuania achieving 100% (from 0%).

Distributed Energy

Benefits explained (but Sustainability) [PS-CBA Experts/ENTSOG]

> Security of Supply:

In the existing infrastructure level, the project group **reduces the risk of demand curtailment** in Poland from 2030 under all and 2-climatic stress conditions. Additionally, provides some **extra remaining flexibility** to the Polish gas system in 2025. This situation improves in the low infrastructure level, where the project group **improves remaining flexibility** in Poland also in 2030 under 2-week and 2-week dunkelflaute climatic stress cases and reduces even more curtailment rates under peak-day climatic stress case in 2030 and in 2040 for all climatic stress conditions. Additionally, with the implementation of the Advanced projects the project group will be able to improve remaining flexibility in Poland under all climatic stress cases and years.

Curtailment rates under climatic stress conditions and no supply import disruptions for Distributed Energy demand scenario (DE) are considerably higher than for National Trends, this is caused by the increase of Polish gas demand for this demand scenario.

Regarding the supply import routes disruptions:

In case of **Belarus disruption**, in the existing infrastructure level the project group fully mitigates the risk of disruption in Poland for 2-weeks and 2-weeks dunkelflaute stress cases in 2025 and significantly **reduces the risk of demand curtailment** in 2025 peak-day and in 2030 for all climatic stress cases. This situation improves in the low infrastructure level, where project group together with FID projects further reduces curtailment rates from 2030, whereas, in the advanced infrastructure level, the project **improves remaining flexibility** in Poland in 2030 and in 2040 for peak-day case the project group **fully mitigates the risk of demand curtailment** (driven by an increase of Polish peak demand from 2030 to 2040 thanks to displacing higher carbon fuels in the heating sector and for power generation).

In case of **Ukrainian disruption**, the project group **reduces the risk of demand curtailment** in Poland in the existing and low infrastructure levels. In the advanced infrastructure level, it **fully mitigates the risk of demand curtailment** also in 2040 during peak day demand situation and **improve the remaining flexibility** in other cases.

In case of **Single Largest Infrastructure Disruption in Poland** (SLID-PL indicator) the project group **reduces the risk of demand curtailment** in Poland from 2025 in the existing infrastructure level and from 2030 in the low level. This situation improves in the advanced infrastructure level, where the project group **fully mitigates the risk of demand curtailment** in 2025 and 2030 and reduces this same risk in 2040 for the advanced infrastructure level. Lower curtailment rates are shown in the low and advanced infrastructure level, thanks to the implementation of FID projects in Poland and its neighbouring countries.

> Competition:

With the new interconnection between Poland and Lithuania, the project group increases diversification of gas supply sources in the Baltic region. Thanks to the projects group, Estonia, Finland, Latvia and Lithuania **will have more access to Norwegian gas**. However, access to Norwegian gas of Baltic States in Distributed Energy scenario is lower than in National Trends demand scenario due to the increase of gas demand in Poland and consequently, less Norwegian gas will be available to flow into the Baltic region. In the existing infrastructure level, Estonia, Latvia, Lithuania and Finland will have access to Norwegian gas only in 2025. In the low infrastructure level, with the implementation of FID projects in the Baltic region, the access to Norwegian gas will increase, and Baltic states and Finland will have access also in 2040. Highest access to Norwegian supplies is observed in the advanced infrastructure level with the implementation of Baltic pipe project, Baltic states and Finland will have access to Norwegian gas all assessed years.

The project group **slightly decreases dependence from Russian gas and LNG supply sources** in Poland in the existing infrastructure level in 2040. The interconnection allows cooperation between Poland and some of its neighbouring countries (Baltic states and Finland) and therefore less dependence to those sources.

Thanks to the project group Poland **increases the access to national production** in existing infrastructure level in 2030. Thanks to the projects group, Poland have more access to Baltic States and Finland national production foreseen in Distributed Energy scenario.

The project group **contributes to the diversification of entry points** by reducing the LICD in Lithuania and Poland in all infrastructure levels and also in Estonia, Finland, Latvia in the advanced infrastructure level with the implementation of advanced-status project in Estonia (LNG terminal) and the consideration of one market zone (LV-EE-FI).

> **Market integration:**

The project brings benefits in monetised term as a **reduction of the cost of gas supply**. In the reference supply price configuration this can be estimated around 51 MEur/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 together with higher LNG supply, reducing the use of gas coming from Ukraine and YAMAL. Sensitivity analysis on tariffs shows in fact lower benefits in case of more expensive tariffs (up to 33 Mln EUR/y on the reference supply price configuration).

Distributed Energy demand scenario shows higher benefits than in National Trends, this increase is related with the higher gas demand in Poland that will lead to higher flows in the new alternative route.

Additional benefits compared to the reference situation can be observed in the case of Russian expensive supply configuration 60 MEur/y, on average in existing infrastructure level. These benefits are also explained by the savings in transportation costs thanks to the utilisation of this new alternative route and higher LNG supply flows arriving to the Baltic region, which consequently reduces Russian flow through from Ukraine and YAMAL.

In case of low infrastructure level, the project group brings less benefits compared to existing infrastructure level, this is driven by the lower cost of European supplies which are reduced by the utilization of FID infrastructure. However, in the advanced infrastructure level benefits are reduced due to the commissioning of advanced projects in Poland (i.e. Baltic Pipe).

The **bidirectionality is improved** with the creation of capacity from Poland to Lithuania.

Global Ambition

Benefits explained (but Sustainability) [ENTSOG]

> **Security of Supply:**

In the existing infrastructure level, the project group **increases remaining flexibility** in Poland in 2025 under all climatic stress cases (Peak, 2-week and 2-week Dunkelflaute), however, from 2030, due to an increase in the Polish gas demand, the project group reduces **the risk of demand curtailment** in Poland.

Situation improves in the Low infrastructure level, where the project group together with FID projects increase remaining flexibility also in 2030 under 2-weeks and 2-weeks dunkelflaute climatic stress cases and further reduces the risk of demand curtailment in 2030 peak-day and in 2040 for all stress conditions. Additionally, in the advanced infrastructure level, the project group improves remaining flexibility in all years and climatic stress conditions.

Regarding the supply import routes disruptions:

In case of Belarus disruption, for the existing infrastructure level, the project group **reduces the risk of demand curtailment** in Poland under all climatic stress situations from 2025. This situation will also improve in the Low and Advanced infrastructure levels with the implementation of FID and Advanced projects in Poland and neighbouring countries, leading to lower demand curtailment rates in the low infrastructure level and full mitigation in the advanced infrastructure level (except for peak case in 2040 where some disrupted quantities still remain).

In case of Ukrainian disruption, for the existing infrastructure level, the project group **reduces the risk of demand curtailment** in Poland under all climatic stress situations from 2025. This situation will also improve in the Low and Advanced infrastructure levels with the implementation of FID and Advanced projects in Poland and neighbouring countries, leading to mitigation of this risk in 2030 for 2-weeks and 2-weeks dunkelflaute in the low infrastructure level and full mitigation in the advanced infrastructure level (except for peak case in 2040 where some disrupted quantities still remain).

As in the non-disruption case, curtailment rates in this demand scenario are higher than values for National Trends.

For **Single Largest Infrastructure Disruption in Poland** (SLID-PL indicator) the project group **mitigates the risk of demand curtailment** in Poland from 2025 in the existing and from 2030 in the low infrastructure level. Also, it fully mitigates this risk in 2040 in the advanced infrastructure level. Lower curtailment rates are shown in the low and advanced infrastructure level, thanks to the implementation of FID and advanced projects in Poland and its neighbouring countries.

> **Competition:**

With the new interconnection between Poland and Lithuania, the project group increases diversification of gas supply sources in the Baltic region. Thanks to the projects group, Estonia, Finland, Latvia and Lithuania **will have more access to Norwegian gas**. However, access to Norwegian gas of Baltic States in Global Ambition scenario is lower than in National Trends demand scenario due to the increase of gas demand in Poland and consequently, less Norwegian gas will be available to flow into the Baltic region. In the existing infrastructure level, Estonia, Latvia, Lithuania and Finland will have access to Norwegian gas in 2025.

In the low infrastructure level, with the implementation of FID projects in the Baltic region, the access to Norwegian gas will increase, and Baltic states and Finland will have access in 2025 and 2030, and additionally Lithuania will also have access to Norwegian gas supply in 2040. In the advanced infrastructure level, with the implementation of advanced projects in Poland, such as the Baltic Pipe, all Baltic States and Finland will have significant access to Norwegian gas supply from 2025.

The project group **decreases dependence from Russian gas** in Latvia, Estonia and Finland in low infrastructure level driven by the new interconnection Poland-Lithuania and the increase of capacity between Lithuania-Latvia that allow the cooperation between Poland, Baltic states and Finland reducing their dependency of Russian gas.

The project group **contributes to the diversification of entry points** by reducing the LICD in Lithuania and Poland in all infrastructure levels and also in Estonia, Finland, Latvia in the advanced infrastructure level with the implementation of advanced-status project in Estonia (LNG terminal) and the consideration of one market zone (LV-EE-FI).

> **Market integration:**

The project brings benefits in monetised term as a **reduction of the cost of gas supply**. In the reference supply price configuration this can be estimated around 43 MEur/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 and higher LNG supplies arriving to the Baltic region together with LNG supply, reducing the use of gas coming from Ukraine and YAMAL. This can be confirmed with the sensitivity analysis on tariffs which shows in fact lower benefits (up to 25 Mln EUR/y on the reference supply price configuration).

Global Ambition demand scenario shows higher benefits than in National Trends, this increase is related with the higher gas demand in Poland that will lead to higher flows in the new alternative route.

Additional benefits compared to the reference situation are observed in the case of Russian expensive supply configuration 51 MEur/y, on average in the existing infrastructure level. Such benefits are also explained by the savings in transportation costs thanks to the utilisation of this new alternative route together with higher LNG supplies that consequently reduces Russian flow from YAMAL and Ukraine.

In case of low infrastructure level, the project group brings less benefits compared to existing infrastructure level, this is driven by the lower cost of European supplies which are reduced by the utilization of FID infrastructure. However, in the advanced infrastructure level benefits are reduced due to the commissioning of advanced projects in Poland (i.e. Baltic Pipe).

The **bidirectionality is improved** with the creation of capacity from Poland to Lithuania.

Sustainability benefits explained [ENTSOG]

The ENTSG analysis shows that, in the yearly assessment, the projects group realisation enhances the replacement of more polluting fuels with natural gas, which enables fuel switch savings between 1.7-8.3 MEUR/y under existing infrastructure level and between 1.2-6.1 MEUR/y under low infrastructure level. Compared to project group BEMIP_05A, project groups BEMIP_05B do not show significant differences under existing and low infrastructure levels. 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	25 / 38	106 / 129	60 / 87	18 / 28	78 / 96	44 / 65	18 / 20	60 / 68	33 / 43
	Lower Tariff Sensitivity	25 / 38	106 / 129	60 / 87	19 / 28	78 / 96	44 / 65	18 / 23	60 / 64	34 / 40
	Higher Tariff Sensitivity	10 / 19	98 / 119	60 / 86	16 / 25	73 / 89	43 / 62	0 / 0	7 / 7	8 / 10

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.

The savings have been allocated to the project group based on the flows resulting from ENTSG simulations under the reference supply price configurations and according to the methodology described in TYNDP 2020 Annex D. Such methodology is also based on the assumption that the use of the infrastructures already included in the different infrastructure levels (versus which the project group is assessed) is always prioritised, independently from the actual cost of using that infrastructures.

Such conservative approach does not capture the possible additional benefits that would be allocated to BEMIP_05B in the advanced infrastructure level. In fact, by observing its contribution to the cost of gas reduction (section C.3) it can be observed that project group BEMIP_05B brings additional benefit under advanced infrastructure level compared to BEMIP_05A, indicating that the capacity created by the project could be used further in this infrastructure level.

As per BEMIP_5B the highest contribution of the project is observed under the existing infrastructure level, and in Distributed Energy scenario. This scenario is the one characterised by the highest increase in the gas demand in 2030 and 2040 for Poland and Lithuania together (in the power sector and transport). For this reason benefits are higher beyond 2030 even if the project is assessed by ENTSG from its first full year of operation, in this case year 2022.

TYNDP 2020 ENTSG and ENTSG-E scenario storylines have identified for DE and GA scenarios the need for hydrogen imports to satisfy the hydrogen demand that cannot be covered by European production of hydrogen (e.g. through power-to-gas). In the future, hydrogen demand not satisfied by locally produced hydrogen could be covered by directly imported hydrogen through hydrogen-compatible infrastructures and/or by natural gas through natural gas pipelines or LNG terminals. In TYNDP 2020 ENTSG has considered fuel switch benefits from hydrogen import in the form of natural gas import then converted into hydrogen in Europe. For project group BEMIP_05A, such benefits represent, on average, 10% of the benefits from fuel switch in 2030 in both Distributed Energy and Global Ambition scenarios and 80% in 2040.

Observing the evolution of benefits among the assessed years (section C.3), benefits are observed also before 2030. Benefits are similar in the three scenarios since the contribution of hydrogen import is rather limited before 2030 and are fully linked to natural gas replacing coal and oil in final and power sectors.

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		
Row Labels		CBG			GBC			NT			NT		
		WITHOUT	WITH	DELTA	WITHOUT	WITH	DELTA	WITHOUT	WITH	DELTA	WITHOUT	WITH	DELTA
Competition													
Commercial Supply Access (CSA)													
	Estonia	2	3	1	2	3	1	2	3	1	2	3	1
	Finland	2	3	1	2	3	1	2	3	1	2	3	1
	Latvia	2	3	1	2	3	1	2	3	1	2	3	1
	Lithuania	2	3	1	2	3	1	2	3	1	2	3	1
LNG and Interconnection Capacity Diversification (LICD)													
	Lithuania	5,000	3,333	-1,667	5,001	3,333	-1,667	5,000	3,333	-1,667	5,000	3,333	-1,667
	Poland	3,996	3,324	-672	3,996	3,324	-672	3,996	3,324	-672	3,996	3,324	-672
Security of Supply													
Belarus Disruption Curtailment Rate 2-Week Cold Spell (%)													
	Poland	-3%	0%	3%	-3%	0%	3%	-1%	0%	1%	-18%	-13%	4%
Belarus Disruption Curtailment Rate 2-Week Cold Spell (%) --- DF													
	Poland	-4%	0%	4%	-4%	0%	4%	-11%	-6%	5%	-26%	-22%	4%
Belarus Disruption Curtailment Rate Peak Day (%)													
	Poland	-9%	-4%	5%	-9%	-4%	5%	-10%	-6%	5%	-31%	-28%	4%
Curtailment Rate 2-Week Cold Spell (%) --- DF													
	Poland										-8%	-4%	4%
Curtailment Rate Peak Day (%)													
	Poland										-15%	-11%	4%
Remaining Flexibility 2-Week Cold Spell (%)													
	Poland	22%	28%	5%	22%	28%	5%	24%	30%	5%	2%	7%	4%
Remaining Flexibility 2-Week Cold Spell (%) --- DF													
	Poland	21%	27%	5%	21%	27%	5%	11%	16%	5%			
Remaining Flexibility Peak day (%)													
	Poland	14%	19%	5%	14%	19%	5%	11%	16%	5%			
Single Largest Infrastructure Disruption (SLID)-Poland													
	Poland	10%	5%	-5%	10%	5%	-5%	11%	6%	-5%	32%	28%	-4%
Ukraine Disruption Curtailment Rate 2-Week Cold Spell (%) --- DF													
	Poland							-1%	0%	1%	-17%	-13%	4%
Ukraine Disruption Curtailment Rate Peak Day (%)													
	Poland										-23%	-20%	4%
Market Integration													
Bi-directionality - Country													
	LT <=> PL	0%	79%	79%	0%	79%	79%	0%	79%	79%	0%	79%	79%

LOW 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													
Commercial Supply Access (CSA)													
	Estonia	2	3	1	2	3	1	2	3	1	2	3	1
	Finland	2	3	1	2	3	1	2	3	1	2	3	1
	Latvia	2	3	1	2	3	1	2	3	1	2	3	1
	Lithuania	2	3	1	2	3	1	2	3	1	2	3	1
LNG and Interconnection Capacity Diversification (LICD)													
	Lithuania	5,000	3,333	-1,667	5,001	3,333	-1,667	5,000	3,333	-1,667	5,000	3,333	-1,667
	Poland	2,839	2,500	-339	2,839	2,500	-339	2,839	2,500	-339	2,839	2,500	-339
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%			
Security of Supply													
Belarus Disruption Curtailment Rate 2-Week Cold Spell (%) --- DF													
	Poland										-8%	-4%	4%
Belarus Disruption Curtailment Rate Peak Day (%)													
	Poland										-15%	-12%	4%
Remaining Flexibility 2-Week Cold Spell (%)													
	Poland	47%	52%	5%	47%	52%	5%	48%	54%	5%	22%	26%	4%
Remaining Flexibility 2-Week Cold Spell (%) --- DF													
	Poland	46%	51%	5%	46%	51%	5%	33%	37%	5%	10%	14%	4%
Remaining Flexibility Peak day (%)													
	Poland	36%	41%	5%	37%	41%	5%	32%	37%	5%	1%	5%	4%
Single Largest Infrastructure Disruption (SLID)-Poland													
	Poland										16%	12%	-4%
Ukraine Disruption Curtailment Rate Peak Day (%)													
	Poland										-7%	-4%	4%
Market Integration													
Bi-directionality - Country													
	LT <=> PL	0%	79%	79%	0%	79%	79%	0%	79%	79%	0%	79%	79%
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			NT		
Row Labels		WITHOUT	WITH	DELTA	WITHOUT	WITH	DELTA	WITHOUT	WITH	DELTA	WITHOUT	WITH	DELTA
Competition													
Commercial Supply Access (CSA)													
	Estonia	2	3	1	2	3	1	2	3	1	2	3	1
	Finland	2	3	1	2	3	1	2	3	1	2	3	1
	Latvia	2	3	1	2	3	1	2	3	1	2	3	1
	Lithuania	2	3	1	2	3	1	2	3	1	2	3	1
LNG and Interconnection Capacity Diversification (LICD)													
	Estonia	5,362	5,000	-362	5,401	5,004	-397	5,300	5,000	-300	5,196	5,000	-196
	Finland	5,362	5,000	-362	5,401	5,004	-397	5,300	5,000	-300	5,196	5,000	-196
	Latvia	5,362	5,000	-362	5,401	5,004	-397	5,300	5,000	-300	5,196	5,000	-196
	Lithuania	5,000	3,333	-1,667	5,001	3,333	-1,667	5,000	3,333	-1,667	5,000	3,333	-1,667
	Poland	1,925	1,781	-144	1,925	1,781	-144	1,925	1,781	-144	1,925	1,781	-144
Security of Supply													
Remaining Flexibility 2-Week Cold Spell (%)													
	Poland										73%	77%	4%
	Romania										96%	97%	1%
Remaining Flexibility 2-Week Cold Spell (%) --- DF													
	Poland							88%	93%	5%	56%	60%	4%
	Romania										93%	94%	1%
Remaining Flexibility Peak day (%)													
	Germany	47%	48%	1%	38%	39%	1%	46%	47%	1%			
	Poland	94%	99%	5%	94%	99%	5%	87%	92%	5%	43%	47%	4%
Market Integration													
Bi-directionality - Country													
	LT <=> PL	0%	79%	79%	0%	79%	79%	0%	79%	79%	0%	79%	79%
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			DE		
Row Labels		WITHOUT	WITH	DELTA	WITHOUT	WITH	DELTA	WITHOUT	WITH	DELTA	WITHOUT	WITH	DELTA
Competition													
Commercial Supply Access (CSA)													
	Estonia	2	3	1	2	3	1						
	Finland	2	3	1	2	3	1						
	Latvia	2	3	1	2	3	1						
	Lithuania	2	3	1	2	3	1						
	Poland							2	4	2			
LNG and Interconnection Capacity Diversification (LICD)													
	Lithuania	5,000	3,333	-1,667	5,001	3,333	-1,667	5,000	3,333	-1,667	5,000	3,333	-1,667
	Poland	3,996	3,324	-672	3,996	3,324	-672	3,996	3,324	-672	3,996	3,324	-672
MASD-LNGall													
	Poland										4%	1%	-3%
MASD-RU													
	Poland										27%	23%	-5%
Security of Supply													
Belarus Disruption Curtailment Rate 2-Week Cold Spell (%)													
	Poland	-3%	0%	3%	-3%	0%	3%	-29%	-25%	4%	-30%	-27%	3%
Belarus Disruption Curtailment Rate 2-Week Cold Spell (%) --- DF													
	Poland	-4%	0%	4%	-4%	0%	4%	-30%	-26%	4%	-33%	-30%	3%
Belarus Disruption Curtailment Rate Peak Day (%)													
	Poland	-9%	-4%	5%	-9%	-4%	5%	-39%	-36%	3%	-44%	-42%	3%
Curtailment Rate 2-Week Cold Spell (%)													
	Poland							-12%	-9%	4%	-15%	-12%	3%
Curtailment Rate 2-Week Cold Spell (%) --- DF													
	Poland							-13%	-9%	4%	-19%	-15%	3%
Curtailment Rate Peak Day (%)													
	Poland							-25%	-22%	3%	-32%	-30%	3%
Remaining Flexibility 2-Week Cold Spell (%)													
	Poland	22%	28%	5%	22%	28%	5%						
Remaining Flexibility 2-Week Cold Spell (%) --- DF													
	Poland	21%	27%	5%	21%	27%	5%						
Remaining Flexibility Peak day (%)													
	Poland	14%	19%	5%	14%	19%	5%						
Single Largest Infrastructure Disruption (SLID)-Poland													
	Poland	10%	5%	-5%	10%	5%	-5%	39%	36%	-3%	45%	42%	-3%
Ukraine Disruption Curtailment Rate 2-Week Cold Spell (%)													
	Poland							-21%	-17%	4%	-23%	-20%	3%
Ukraine Disruption Curtailment Rate 2-Week Cold Spell (%) --- DF													
	Poland							-21%	-18%	4%	-26%	-23%	3%
Ukraine Disruption Curtailment Rate Peak Day (%)													
	Poland							-32%	-29%	3%	-38%	-36%	3%
Market Integration													
Bi-directionality - Country													
	LT <=> PL	0%	79%	79%	0%	79%	79%	0%	79%	79%	0%	79%	79%
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					
Row Labels		CBG	GBC			DE			DE				
		WITHOUT	WITH	DELTA	WITHOUT	WITH	DELTA	WITHOUT	WITH	DELTA	WITHOUT	WITH	DELTA
Competition													
Commercial Supply Access (CSA)													
	Estonia	2	3	1	2	3	1				3	4	1
	Finland	2	3	1	2	3	1				3	4	1
	Latvia	2	3	1	2	3	1				3	4	1
	Lithuania	2	3	1	2	3	1				3	4	1
LNG and Interconnection Capacity Diversification (LICD)													
	Lithuania	5,000	3,333	-1,667	5,001	3,333	-1,667	5,000	3,333	-1,667	5,000	3,333	-1,667
	Poland	2,839	2,500	-339	2,839	2,500	-339	2,839	2,500	-339	2,839	2,500	-339
MASD-RU													
	Estonia	42%	30%	-12%	47%	33%	-14%						
	Finland	42%	30%	-12%	47%	33%	-14%						
	Latvia	41%	30%	-11%	46%	33%	-13%						
Security of Supply													
Belarus Disruption Curtailment Rate 2-Week Cold Spell (%)													
	Poland							-12%	-9%	4%	-16%	-12%	3%
Belarus Disruption Curtailment Rate 2-Week Cold Spell (%) --- DF													
	Poland							-13%	-10%	4%	-19%	-16%	3%
Belarus Disruption Curtailment Rate Peak Day (%)													
	Poland							-25%	-22%	3%	-33%	-30%	3%
Curtailment Rate 2-Week Cold Spell (%)													
	Poland										-2%	0%	2%
Curtailment Rate 2-Week Cold Spell (%) --- DF													
	Poland										-4%	-1%	3%
Curtailment Rate Peak Day (%)													
	Poland							-11%	-8%	3%	-21%	-18%	3%
Remaining Flexibility 2-Week Cold Spell (%)													
	Poland	47%	52%	5%	47%	52%	5%	4%	8%	4%	0%	3%	2%
Remaining Flexibility 2-Week Cold Spell (%) --- DF													
	Poland	46%	51%	5%	46%	51%	5%	3%	7%	4%			
Remaining Flexibility Peak day (%)													
	Poland	36%	41%	5%	37%	41%	5%						
Single Largest Infrastructure Disruption (SLID)-Poland													
	Poland							26%	23%	-3%	33%	30%	-3%
Ukraine Disruption Curtailment Rate 2-Week Cold Spell (%)													
	Poland							-4%	-1%	3%	-8%	-5%	3%
Ukraine Disruption Curtailment Rate 2-Week Cold Spell (%) --- DF													
	Poland							-5%	-2%	4%	-12%	-8%	3%
Ukraine Disruption Curtailment Rate Peak Day (%)													
	Poland							-18%	-15%	3%	-27%	-24%	3%
Market Integration													
Bi-directionality - Country													
	LT <=> PL	0%	79%	79%	0%	79%	79%	0%	79%	79%	0%	79%	79%
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													
Commercial Supply Access (CSA)													
	Estonia	2	3	1	2	3	1				3	4	1
	Finland	2	3	1	2	3	1				3	4	1
	Latvia	2	3	1	2	3	1				3	4	1
	Lithuania	2	3	1	2	3	1				3	4	1
LNG and Interconnection Capacity Diversification (LICD)													
	Estonia	5,362	5,000	-362	5,401	5,004	-397	5,759	5,034	-725	5,273	5,000	-273
	Finland	5,362	5,000	-362	5,401	5,004	-397	5,759	5,034	-725	5,273	5,000	-273
	Latvia	5,362	5,000	-362	5,401	5,004	-397	5,759	5,034	-725	5,273	5,000	-273
	Lithuania	5,000	3,333	-1,667	5,001	3,333	-1,667	5,000	3,333	-1,667	5,000	3,333	-1,667
	Poland	1,925	1,781	-144	1,925	1,781	-144	1,925	1,781	-144	1,925	1,781	-144
Security of Supply													
Belarus Disruption Curtailment Rate Peak Day (%)													
	Poland										-3%	0%	3%
Remaining Flexibility 2-Week Cold Spell (%)													
	Poland							46%	50%	4%	37%	40%	3%
Remaining Flexibility 2-Week Cold Spell (%) --- DF													
	Poland							45%	49%	4%	34%	37%	3%
Remaining Flexibility Peak day (%)													
	Germany	47%	48%	1%	38%	39%	1%	62%	63%	1%	97%	98%	1%
	Poland	94%	99%	5%	94%	99%	5%	23%	26%	3%	9%	12%	3%
Single Largest Infrastructure Disruption (SLID)-Poland													
	Poland										4%	2%	-3%
Ukraine Disruption Curtailment Rate Peak Day (%)													
	Poland										-4%	-1%	3%
Market Integration													
Bi-directionality - Country													
	LT <=> PL	0%	79%	79%	0%	79%	79%	0%	79%	79%	0%	79%	79%
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													
Commercial Supply Access (CSA)													
	Estonia	2	3	1	2	3	1						
	Finland	2	3	1	2	3	1						
	Latvia	2	3	1	2	3	1						
	Lithuania	2	3	1	2	3	1						
LNG and Interconnection Capacity Diversification (LICD)													
	Lithuania	5,000	3,333	-1,667	5,001	3,333	-1,667	5,000	3,333	-1,667	5,000	3,333	-1,667
	Poland	3,996	3,324	-672	3,996	3,324	-672	3,996	3,324	-672	3,996	3,324	-672
Security of Supply													
Belarus Disruption Curtailment Rate 2-Week Cold Spell (%)													
	Poland	-3%	0%	3%	-3%	0%	3%	-27%	-23%	4%	-34%	-30%	3%
Belarus Disruption Curtailment Rate 2-Week Cold Spell (%) --- DF													
	Poland	-4%	0%	4%	-4%	0%	4%	-27%	-24%	4%	-35%	-32%	3%
Belarus Disruption Curtailment Rate Peak Day (%)													
	Poland	-9%	-4%	5%	-9%	-4%	5%	-38%	-35%	3%	-46%	-44%	3%
Curtailment Rate 2-Week Cold Spell (%)													
	Poland							-9%	-6%	4%	-19%	-16%	3%
Curtailment Rate 2-Week Cold Spell (%) --- DF													
	Poland							-11%	-7%	4%	-20%	-17%	3%
Curtailment Rate Peak Day (%)													
	Poland							-24%	-20%	3%	-34%	-32%	3%
Remaining Flexibility 2-Week Cold Spell (%)													
	Poland	22%	28%	5%	22%	28%	5%						
Remaining Flexibility 2-Week Cold Spell (%) --- DF													
	Poland	21%	27%	5%	21%	27%	5%						
Remaining Flexibility Peak day (%)													
	Poland	14%	19%	5%	14%	19%	5%						
Single Largest Infrastructure Disruption (SLID)-Poland													
	Poland	10%	5%	-5%	10%	5%	-5%	38%	35%	-3%	47%	44%	-3%
Ukraine Disruption Curtailment Rate 2-Week Cold Spell (%)													
	Poland							-18%	-14%	4%	-26%	-23%	3%
Ukraine Disruption Curtailment Rate 2-Week Cold Spell (%) --- DF													
	Poland							-19%	-16%	4%	-27%	-24%	3%
Ukraine Disruption Curtailment Rate Peak Day (%)													
	Poland							-31%	-28%	3%	-40%	-38%	3%
Market Integration													
Bi-directionality - Country													
	LT <=> PL	0%	79%	79%	0%	79%	79%	0%	79%	79%	0%	79%	79%
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													
Commercial Supply Access (CSA)													
	Estonia	2	3	1	2	3	1	2	3	1			
	Finland	2	3	1	2	3	1	2	3	1			
	Latvia	2	3	1	2	3	1	2	3	1			
	Lithuania	2	3	1	2	3	1	2	3	1	3	4	1
LNG and Interconnection Capacity Diversification (LICD)													
	Lithuania	5,000	3,333	-1,667	5,001	3,333	-1,667	5,000	3,333	-1,667	5,000	3,333	-1,667
	Poland	2,839	2,500	-339	2,839	2,500	-339	2,839	2,500	-339	2,839	2,500	-339
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													
Belarus Disruption Curtailment Rate 2-Week Cold Spell (%)													
	Poland							-10%	-6%	4%	-19%	-16%	3%
Belarus Disruption Curtailment Rate 2-Week Cold Spell (%) --- DF													
	Poland							-11%	-7%	4%	-20%	-17%	3%
Belarus Disruption Curtailment Rate Peak Day (%)													
	Poland							-24%	-21%	3%	-35%	-32%	3%
Curtailment Rate 2-Week Cold Spell (%)													
	Poland										-4%	-1%	3%
Curtailment Rate 2-Week Cold Spell (%) --- DF													
	Poland										-5%	-2%	3%
Curtailment Rate Peak Day (%)													
	Poland							-10%	-7%	3%	-23%	-20%	3%
Remaining Flexibility 2-Week Cold Spell (%)													
	Poland	47%	52%	5%	47%	52%	5%	7%	11%	4%			
Remaining Flexibility 2-Week Cold Spell (%) --- DF													
	Poland	46%	51%	5%	46%	51%	5%	6%	10%	4%			
Remaining Flexibility Peak day (%)													
	Poland	36%	41%	5%	37%	41%	5%						
Single Largest Infrastructure Disruption (SLID)-Poland													
	Poland							24%	21%	-3%	35%	32%	-3%
Ukraine Disruption Curtailment Rate 2-Week Cold Spell (%)													
	Poland							-1%	0%	1%	-12%	-9%	3%
Ukraine Disruption Curtailment Rate 2-Week Cold Spell (%) --- DF													
	Poland							-3%	0%	3%	-13%	-10%	3%
Ukraine Disruption Curtailment Rate Peak Day (%)													
	Poland							-17%	-14%	3%	-29%	-26%	3%
Market Integration													
Bi-directionality - Country													
	LT <=> PL	0%	79%	79%	0%	79%	79%	0%	79%	79%	0%	79%	79%
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													
Commercial Supply Access (CSA)													
	Estonia	2	3	1	2	3	1	2	3	1	3	4	1
	Finland	2	3	1	2	3	1	2	3	1	3	4	1
	Latvia	2	3	1	2	3	1	2	3	1	3	4	1
	Lithuania	2	3	1	2	3	1	2	3	1	3	4	1
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	5,362	5,000	-362	5,401	5,004	-397	5,834	5,055	-779	5,510	5,000	-510
	Latvia	5,362	5,000	-362	5,401	5,004	-397	5,834	5,055	-779	5,510	5,000	-510
	Lithuania	5,000	3,333	-1,667	5,001	3,333	-1,667	5,000	3,333	-1,667	5,000	3,333	-1,667
	Poland	1,925	1,781	-144	1,925	1,781	-144	1,925	1,781	-144	1,925	1,781	-144
Security of Supply													
Belarus Disruption Curtailment Rate Peak Day (%)													
	Poland										-5%	-2%	3%
Remaining Flexibility 2-Week Cold Spell (%)													
	Poland							50%	54%	4%	33%	37%	3%
Remaining Flexibility 2-Week Cold Spell (%) --- DF													
	Poland							48%	52%	4%	32%	35%	3%
Remaining Flexibility Peak day (%)													
	Denmark										57%	76%	19%
	Poland	94%	99%	5%	94%	99%	5%	25%	28%	3%	7%	10%	3%
Single Largest Infrastructure Disruption (SLID)-Poland													
	Poland										6%	4%	-3%
Ukraine Disruption Curtailment Rate Peak Day (%)													
	Poland										-6%	-3%	3%
Market Integration													
Bi-directionality - Country													
	LT <=> PL	0%	79%	79%	0%	79%	79%	0%	79%	79%	0%	79%	79%
Bi-directionality - Point													

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 ENTSOG and are labelled as “(Promoter)”. More information on how to read the data in this section is provided in the Introduction Document.

		EXISTING			LOW			ADVANCED		
Benefits (Meur/year)		NATIONAL TRENDS	DISTRIBUTED ENERGY	GLOBAL AMBITION	NATIONAL TRENDS	DISTRIBUTED ENERGY	GLOBAL AMBITION	NATIONAL TRENDS	DISTRIBUTED ENERGY	GLOBAL AMBITION
EU Bill benefits	Reference Supply	26.7	50.8	43.1	19.3	39.0	30.3	2.4	20.5	12.2
	With Tariffs	27.2	60.0	47.2	20.1	46.7	35.5	7.4	27.9	18.8
Security of Supply	Design Case	3.8	3.6	3.6	2.1	2.8	2.8	0.0	2.1	2.1
	2-weeks Cold Spell	15.6	22.9	22.9	0.0	21.8	24.0	0.0	0.0	0.0
	2-weeks Cold Spell DF	26.6	24.1	24.1	14.7	24.0	24.0	0.0	0.0	0.0
Sustainability	CO2 and Other externalities savings	1.7 / 2.3	7 / 8.3	3.2 / 4.5	1.2 / 1.7	5.2 / 6.1	2.4 / 3.4	1 / 1.1	3.8 / 4.3	1.8 / 2.3
	Additional benefit (Promoter)	0	0	0	0	0	0	0	0	0

Comparison between the assessed SCENARIOS

ENTSOE 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	23.1	23.1	23.1	17.3	17.3	17.3	1.0	1.0	1.0
	Supply Maximization	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	23.2	23.2	23.2	17.5	17.5	17.5	5.7	5.7	5.7
Security of Supply	Design Case	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.5	19.2	3.5	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	11.9	11.9	11.9	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	16.2	16.2	16.2	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	0/1	0/1	0/1	0/1	0/1	0/1	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	20.5	40.6	48.2	18.5	22.5	24.0	2.2	7.5	11.7	33.5	76.6	52.7	21.2	65.3	43.6	3.5	42.8	19.9
	Supply Maximization	22.2	48.8	53.8	19.2	25.1	26.9	7.5	12.6	15.8	34.9	99.9	66.1	22.6	82.7	54.9	12.1	54.6	30.1
Security of Supply	Design Case	3.5	3.5	3.5	0.0	3.5	3.5	0.0	0.0	0.0	3.5	19.2	3.5	3.5	5.2	3.5	0.0	3.5	3.5
	2-weeks Cold Spell	6.8	24.5	24.5	0.0	24.5	24.5	0.0	0.0	0.0	24.5	24.5	24.5	0.0	24.5	24.5	0.0	0.0	0.0
	2-weeks Cold Spell DF	24.5	24.5	24.5	0.0	24.5	24.5	0.0	0.0	0.0	24.5	24.5	24.5	24.5	24.5	24.5	0.0	0.0	0.0
Sustainability	CO2 and Other externalities savings	0/0	19/22	6/8	0/0	14/17	5/6	0/0	8/10	3/4	4/5	3/3	4/4	3/3	2/2	3/3	2/2	1/1	2/2
	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

C.4 Sensitivities analysis on monetised benefits [ENTSOG]

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
TRA-F-341	Transmission Infrastructure	165 km, DN 700	Vegetation Wildlife
TRA-F-212	Transmission Infrastructure	357 km, DN 700	<p>The project crosses:</p> <ul style="list-style-type: none"> > Natura 2000 sites (Ostoja Nadbużańska, Czerwony Bór, Ostoja Narwiańska, Dolina Pisy, Dolina Dolnego Bugu, Dolina Dolnej Narwi), > Nature Parks (Równina Kurpiowska, Dolina Dolnej Narwi, Jezior Rajgrodzkich, Dolina Rospudy, Pojezierze Północnej Suwalszczyzny, Pojezierze Sejneńskie, Dolina Bugu), > Landscape Park (Podlaski Przełom Bugu), > groundwater bodies, surface water bodies.

Potential impact	Mitigation measures	Related costs included in project CAPEX and OPEX	Additional expected costs
LT: Forest mint, European pond turtles, European fire-bellied toads, greater spotted eagles, black storks, fishes Destruction of habitats and nests	LT: Time limitation of construction works, restoration of nests, collection of environmentally sensitive plants and species	n.a.	n.a.
PL: Due to type of infrastructure all impacts will occur at the construction stage as a result of: cutting down shrubs and trees, dewatering of trenches, emission of noise, air pollutions, sewages and wastes. Range of impacts will be limited to the construction site. At the stage of use / exploitation impact on the environment could occur only while breakdown of pipeline.	PL: To ensure appropriate protection of environmentally sensitive areas during the construction GAZ-SYSTEM implements following mitigation measures: <ul style="list-style-type: none"> > environmental supervision during pipeline's construction; > crossing selected rivers' valleys with trenchless technologies (e.g. HDD); > crossing selected habitats with trenchless technologies; > technical facilities' and storages' location i.a. out of natural habitats, protected areas, wetlands, min. 100m from surface waters; > narrowed width of construction site in particularly valuable areas; > minimizing the time of maintaining an open trench, minimizing dewatering the trenches or using sheet piling; > transplantation of habitats and its re-transplantation on the surface or sowing of collected seeds after the construction; > cutting down shrubs and trees beyond breeding season; > works in a selected areas carried out during 5am-22pm; > protecting the construction site with a temporary sheet piles in places, where increased amphibians' migration may occur. 	n.a.	n.a.

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

There are no pending issues for compliance with EU and national legislation; the preparation of related documents has been carried out in accordance with the applicable Environmental Laws of Lithuania and Poland, i.e. adopted in accordance with EU legislation. The Environmental Impact Assessment (EIA) for the project's part in the territory of Lithuania and Poland have been conducted. Following EIA, the monitoring plan has been prepared and the experts to implement the monitoring will be outsourced during the construction period.

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 a subject of the EIA or initial screening.

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

GAZ-SYSTEM is currently developing Poland-Lithuania Interconnection (GIPL) and a number of other projects belonging to BEMIP region (extension of LNG terminal in Świnoujście, Baltic Pipe) and NSI EAST region (LNG Gdańsk, Poland-Slovakia Interconnection with North - South Gas Corridor in Eastern Poland, Poland-Czech Republic Interconnection).

Due to the strategic location of the Polish gas grid between the Baltic and CEE regions, the future implementation of these projects will create the synergy effect by interlinking both BEMIP and NSI East gas regions. Implementation of a direct gas connection with deposits on Norwegian Continental Shelf and significant LNG supply options (Świnoujście in PL, LNG Gdańsk in PL, Klaipeda in LT) and the implementation of currently developed cross-border pipeline projects connecting the Polish gas grid with Slovakia, Lithuania (PCI projects) and possibly Czechia and Ukraine, will lay the foundations for the Polish market to become a regional gas distribution centre in the medium term providing the access to reliable sources of gas (NCS, LNG, Western Europe), traded according to price formulas based on the hub rules, for the Baltic and CEE countries, as it is on the mature Western gas markets.

The creation of a regional gas hub with a high level of liquidity and security will allow to materialize the EU concept of creating a single European gas market, ensuring maximum security of supply and fostering price convergence between domestic markets, as well as will contribute to the implementation of the ACER-backed vision of the European gas market, composed of strong and liquid regional hubs.

F. Useful Links

The project website GIPL:

www.ambergrid.lt/en/projects/gas-interconnection-poland-lithuania-gipl

<https://en.gaz-system.pl/nasze-inwestycje/integracja-z-europejski-systemem/polska-litwa/>

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

Latvian part: <https://www.conexus.lv/ipgk-modernizacijas-projekti-eng/latvijas-lietuvu-starpsavienojuma-uzlabosana>

Network Development Plan: www.ambergrid.lt/en/transmission-system/development-of-the-transmission-system/gas-transmission-system-development-plan; <https://www.gaz-system.pl/strefa-klienta/do-pobrania/plan-rozwoju/>