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

Project Group EAST_28 - Interconnection Croatia-Serbia

Reasons for grouping [ENTSOG]

Interconnector HR/RS Croatian side of the investment at the point Slobodnica - Sotin/ Bačko Novo Selo.

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

Covering Croatia and Serbia, connecting the Croatian gas transmission system to the Serbian gas transmission system Slobodnica - Sotin (Croatia) - Bačko Novo Selo (Serbia) will enable diversification of supply in Serbia from Croatian LNG terminal and enable supply of gas from Austria, Slovenia and Italy by the Croatian gas transmission system.

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-0070	Interconnection Croatia/Serbia (Slobdnica-Sotin-Bačko Novo Selo)	Plinacro Ltd	HR	Advanced	-	2023	2027	Rescheduled

Technical Information

TYNDP Project Code	Diameter [mm]	Length [km]	Compressor Power [MW]
TRA-A-0070	800	10	-
TRA-A-0070	800	87	-
TRA-A-0070	500	30	-
TRA-A-0070	800	5	-

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-70	Slobodnica - Sotin (HR) / Bačko Novo Selo (RS)	Plinacro Ltd	Transmission Croatia	42.11	2023	Transmission Serbia	54.34	2023
TRA-A-70	Slobodnica - Sotin (HR) / Bačko Novo Selo (RS)	Plinacro Ltd	Transmission Croatia	197.89	2027	Transmission Serbia	185.66	2027

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-70	Total Cost
CAPEX [min, EUR]	135*	**135**
OPEX [min, EUR/y]	0.18*	**0.18**
Range CAPEX (%)	0	-
Range OPEX (%)	0	-

Description of costs and range [Promoter]

Description of CAPEX: 100% of the CAPEX of the Interconnection Croatia-Serbia refers to the costs of designing and engineering, civil works, assembly and installation works, material and equipment.
Description of OPEX: 100% of the cost refers to the operation and maintenance cost. There are no additional costs of own consumption (fuel gas) and labour cost.
CAPEX and OPEX represent best estimations available to project promoters at the moment of TYNDP 2018 call for projects (start of 2018).

C. Project Benefits

C.1 Summary of project benefits

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

National Trends

Benefits explained (but Sustainability) [ENTSOG]

> Security of Supply:

The project group allows to decrease risk of **demand curtailment** in Bosnia and Herzegovina and in Serbia in Existing infrastructure level in all climatic cases, all years (except for Bosnia and Herzegovina, 2040). The project also increases the **Remaining Flexibility** in Bosnia and Herzegovina and Serbia in 2 Week Cold Spell and 2 week Cold Spell DF in Existing infrastructure level. In addition, the Remaining Flexibility in Croatia is increased as well in LOW and Advanced infrastructure levels, all climatic cases.
In case of **Algerian Pipeline disruption**, the project allows to fully mitigate the risk of Demand Curtailment in Bosnia and Herzegovina and in Serbia in 2025 and in Serbia in 2030 and 2040 in Existing infrastructure level.
This project significantly mitigates risk of demand curtailment in Existing infrastructure level in Bosnia and Herzegovina and Serbia in case of disruption of the **single largest infrastructures in Serbia**. In Low infrastructure level, risk is fully mitigated in Serbia (all years) and Bosnia and Herzegovina in 2025 while in Advanced infrastructure level, risk is fully mitigated in Serbia in 2030 and 2040.

> Competition:

The project group improves the **diversification of entry capacities** (LICD indicator) in Croatia and Serbia in all infrastructure levels.
The project allows to reduce the **dependency on Russian gas** for Croatia and Slovenia in LOW infrastructure level.

> Market integration:

Bidirectionality is established with the creation of capacity between Croatia and Serbia.

Distributed Energy

Benefits explained (but Sustainability) [ENTSOG]

> Security of Supply:

The project group allows to decrease risk of **demand curtailment** in Bosnia and Herzegovina and in Serbia in Existing infrastructure level, all climatic cases, all years (except for Bosnia and Herzegovina, 2040).
In case of **Algerian Pipeline disruption**, the project allows to fully mitigate the risk of Demand Curtailment in and in Serbia (all years) and Bosnia and Herzegovina in 2025, in Existing infrastructure level, Peak Day.
The project also increases the **Remaining Flexibility** in Bosnia and Herzegovina and Serbia in 2 Week Cold Spell and 2 week Cold Spell DF in Existing infrastructure level. In addition, the Remaining Flexibility in Croatia is increased as well in LOW and Advanced infrastructure levels, in 2025, all climatic cases.
This project significantly mitigates risk of demand curtailment in Existing infrastructure level in Bosnia and Herzegovina and Serbia in case of disruption of the **single largest infrastructures in Serbia**. In Low infrastructure level, risk is fully mitigated in Serbia (all years) and Bosnia and Herzegovina in 2025 while in Advanced infrastructure level, risk is fully mitigated in Serbia in 2030 and 2040.

> **Competition:**

The project improves the **diversification of entry capacities** (LICD indicator) in Croatia and Serbia in all infrastructure levels.
The project allows to reduce the **dependency on Russian gas** for Croatia and Slovenia in LOW infrastructure level, 2025.

> **Market integration:**

Bidirectionality is established with the creation of capacity between Croatia and Serbia.

The project brings monetised benefits in Low (around 5 Mln Eur/y on average) and Advanced infrastructure level (around 7 Mln Eur/y on average) in case of expensive Russian gas thanks to tariff savings but for that project requires the interconnection between Serbia and Bulgaria which is in Low and Advanced infrastructure level.

Global Ambition

Benefits explained (but Sustainability) [ENTSOG]

> **Security of Supply:**

The realisation of the project allows to decrease risk of **demand curtailment** in Bosnia and Herzegovina and in Serbia in Existing infrastructure level in all climatic cases, all years (except for Bosnia and Herzegovina, 2040).
In case of **Algerian Pipeline disruption**, the project allows to fully mitigate the risk of Demand Curtailment in and in Serbia (all years) and Bosnia and Herzegovina in 2025, in Existing infrastructure level, Peak Day.
This project significantly mitigates risk of demand curtailment in Existing infrastructure level in Bosnia and Herzegovina and Serbia in case of disruption of the **single largest infrastructures in Serbia**. In Low infrastructure level, risk is fully mitigated in Serbia (all years) and Bosnia and Herzegovina in 2025 while in Advanced infrastructure level, risk is fully mitigated in Serbia in 2030 and 2040.

> **Competition:**

The project improves the **diversification of entry capacities** (LICD indicator) in Croatia and Serbia in all infrastructure levels.
The project allows to reduce the **dependency on Russian gas** for Croatia and Slovenia in LOW infrastructure level.

> **Market integration:**

Bidirectionality is established with the creation of capacity between Croatia and Serbia.

The project brings monetised benefits in Low (0.5 Mln Eur/y on average) and Advanced infrastructure level (4 Mln Eur/y on average) in case of cheap Russian gas thanks to tariff savings but for that project requires the interconnection between Serbia and Bulgaria which is in Low and Advanced infrastructure level.

Sustainability benefits explained [ENTSOG]

Project groups EAST_28 does not show significant benefits from fuel switch under flow-based allocation.

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												
LNG and Interconnection Capacity Diversification (LICD)												
Croatia	5,174	3,447	-1,727	5,174	3,447	-1,727	5,137	3,406	-1,731	5,110	3,393	-1,718
Serbia	10,000	5,546	-4,454	10,000	5,552	-4,448	10,000	5,000	-5,000	10,000	5,000	-5,000
Security of Supply												
Algeria Pipe Disruption Curtailment Rate Peak Day (%)												
Bosnia Herzegovina	-18%	0%	18%	-18%	0%	18%	-36%	-27%	9%			
Serbia	-17%	0%	17%	-17%	0%	17%	-34%	0%	34%	-36%	0%	36%
Curtailment Rate 2-Week Cold Spell (%)												
Bosnia Herzegovina	-8%	0%	8%	-8%	-2%	6%	-18%	-2%	16%	-14%	0%	14%
Serbia	-7%	0%	7%	-7%	-1%	6%	-18%	-1%	17%	-13%	0%	13%
Curtailment Rate 2-Week Cold Spell (%) --- DF												
Bosnia Herzegovina	-8%	-1%	7%	-8%	-3%	5%	-18%	-5%	13%	-14%	-1%	13%
Serbia	-7%	-1%	7%	-7%	-3%	5%	-18%	-4%	14%	-13%	0%	13%
Curtailment Rate Peak Day (%)												
Bosnia Herzegovina	-18%	-8%	10%	-18%	-10%	8%	-36%	-27%	9%			
Serbia	-17%	-8%	9%	-17%	-10%	7%	-34%	-16%	18%	-36%	-16%	20%
Remaining Flexibility 2-Week Cold Spell (%)												
Bosnia Herzegovina	0%	71%	71%							0%	42%	42%
Serbia	0%	3%	3%							0%	3%	3%
Remaining Flexibility 2-Week Cold Spell (%) --- DF												
Bosnia Herzegovina	0%	28%	28%							0%	17%	17%
Serbia	0%	1%	1%							0%	1%	1%
Single Largest Infrastructure Disruption (SLID)-Serbia												
Bosnia Herzegovina	86%	66%	-20%	86%	66%	-20%	90%	36%	-54%	90%	41%	-49%
Serbia	84%	64%	-20%	84%	64%	-20%	88%	34%	-54%	89%	36%	-53%
Market Integration												
Bi-directionality - Country												
HR <=> RS	0%	77%	77%	0%	77%	77%	0%	100%	100%	0%	100%	100%

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												
LNG and Interconnection Capacity Diversification (LICD)												
Croatia	3,425	2,584	-840	3,435	2,594	-841	3,406	2,544	-862	3,393	2,536	-857
Serbia	6,949	4,344	-2,605	6,956	4,350	-2,606	7,294	4,238	-3,056	7,306	4,242	-3,064
MASD-RU												
Croatia	28%	24%	-5%	32%	28%	-4%	29%	22%	-7%	29%	25%	-4%
Slovenia				33%	29%	-4%	29%	26%	-3%	29%	27%	-2%
Security of Supply												
Remaining Flexibility 2-Week Cold Spell (%)												
Croatia	53%	82%	30%	46%	76%	30%	73%	100%	27%	72%	100%	28%
Remaining Flexibility 2-Week Cold Spell (%) --- DF												
Croatia	49%	78%	29%	43%	73%	29%	63%	100%	37%	68%	100%	32%
Remaining Flexibility Peak day (%)												
Croatia	42%	69%	27%	37%	64%	28%	55%	100%	45%	62%	100%	38%
Single Largest Infrastructure Disruption (SLID)-Serbia												
Bosnia Herzegovina	8%	0%	-8%	8%	0%	-8%						
Serbia	8%	0%	-8%	8%	0%	-8%	27%	0%	-27%	28%	0%	-28%
Market Integration												
Bi-directionality - Country												
HR <=> RS	0%	77%	77%	0%	77%	77%	0%	100%	100%	0%	100%	100%

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												
LNG and Interconnection Capacity Diversification (LICD)												
Croatia	3,425	2,584	-840	3,435	2,594	-841	3,406	2,544	-862	3,393	2,536	-857
Serbia	4,270	3,082	-1,188	4,276	3,086	-1,189	4,574	3,197	-1,377	4,586	3,202	-1,383
Security of Supply												
Remaining Flexibility 2-Week Cold Spell (%)												
Croatia	53%	84%	31%	46%	76%	30%	74%	100%	26%	75%	100%	25%
Remaining Flexibility 2-Week Cold Spell (%) --- DF												
Croatia	49%	79%	30%	43%	72%	29%	63%	100%	37%	71%	100%	29%
Remaining Flexibility Peak day (%)												
Croatia	42%	70%	28%	37%	64%	27%	56%	100%	44%	65%	100%	35%
Single Largest Infrastructure Disruption (SLID)-Serbia												
Serbia							7%	0%	-7%	8%	0%	-8%
Market Integration												
Bi-directionality - Country												
HR <=> RS	0%	77%	77%	0%	77%	77%	0%	100%	100%	0%	100%	100%

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												
LNG and Interconnection Capacity Diversification (LICD)												
Croatia	5,174	3,447	-1,727	5,174	3,447	-1,727	5,002	3,334	-1,667	5,000	3,333	-1,667
Serbia	10,000	5,546	-4,454	10,000	5,552	-4,448	10,000	5,000	-5,000	10,000	5,000	-5,000
Security of Supply												
Algeria Pipe Disruption Curtailment Rate Peak Day (%)												
Bosnia Herzegovina	-18%	0%	18%	-18%	0%	18%	-36%	-27%	9%			
Serbia	-17%	0%	17%	-17%	0%	17%	-34%	0%	34%	-36%	0%	36%
Curtailment Rate 2-Week Cold Spell (%)												
Bosnia Herzegovina	-8%	0%	8%	-8%	-2%	6%	-18%	0%	18%	-20%	0%	20%
Serbia	-7%	0%	7%	-7%	-1%	6%	-17%	0%	17%	-19%	0%	19%
Curtailment Rate 2-Week Cold Spell (%) --- DF												
Bosnia Herzegovina	-8%	-1%	7%	-8%	-3%	5%	-18%	0%	18%	-20%	0%	20%
Serbia	-7%	-1%	7%	-7%	-3%	5%	-17%	0%	17%	-19%	0%	19%
Curtailment Rate Peak Day (%)												
Bosnia Herzegovina	-18%	-8%	10%	-18%	-10%	8%	-36%	-27%	9%			
Serbia	-17%	-8%	9%	-17%	-10%	7%	-34%	-4%	30%	-36%	0%	36%
Remaining Flexibility 2-Week Cold Spell (%)												
Bosnia Herzegovina	0%	71%	71%				0%	100%	100%	0%	54%	54%
Serbia	0%	3%	3%				0%	22%	22%	0%	33%	33%
Remaining Flexibility 2-Week Cold Spell (%) --- DF												
Bosnia Herzegovina	0%	28%	28%				0%	100%	100%	0%	47%	47%
Serbia	0%	1%	1%				0%	17%	17%	0%	22%	22%
Remaining Flexibility Peak day (%)												
Serbia										0%	7%	7%
Single Largest Infrastructure Disruption (SLID)-Serbia												
Bosnia Herzegovina	86%	66%	-20%	86%	66%	-20%	90%	36%	-54%	90%	41%	-49%
Serbia	84%	64%	-20%	84%	64%	-20%	88%	34%	-54%	89%	36%	-53%
Market Integration												
Bi-directionality - Country												
HR <=> RS	0%	77%	77%	0%	77%	77%	0%	100%	100%	0%	100%	100%

LOW 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)												
Croatia	3,425	2,584	-840	3,435	2,594	-841	3,334	2,501	-834	3,333	2,500	-833
Serbia	6,949	4,344	-2,605	6,956	4,350	-2,606	7,294	4,238	-3,056	7,306	4,242	-3,064
MASD-RU												
Croatia	28%	24%	-5%	32%	28%	-4%						
Slovenia				33%	29%	-4%						
Security of Supply												
Remaining Flexibility 2-Week Cold Spell (%)												
Croatia	53%	82%	30%	46%	76%	30%						
Remaining Flexibility 2-Week Cold Spell (%) --- DF												
Croatia	49%	78%	29%	43%	73%	29%						
Remaining Flexibility Peak day (%)												
Croatia	42%	69%	27%	37%	64%	28%						
Single Largest Infrastructure Disruption (SLID)-Serbia												
Bosnia Herzegovina	8%	0%	-8%	8%	0%	-8%						
Serbia	8%	0%	-8%	8%	0%	-8%	27%	0%	-27%	28%	0%	-28%
Market Integration												
Bi-directionality - Country												
HR <=> RS	0%	77%	77%	0%	77%	77%	0%	100%	100%	0%	100%	100%

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)												
Croatia	3,425	2,584	-840	3,435	2,594	-841	3,334	2,501	-834	3,333	2,500	-833
Serbia	4,270	3,082	-1,188	4,276	3,086	-1,189	4,574	3,197	-1,377	4,586	3,202	-1,383
Security of Supply												
Remaining Flexibility 2-Week Cold Spell (%)												
Croatia	53%	84%	31%	46%	76%	30%						
Remaining Flexibility 2-Week Cold Spell (%) --- DF												
Croatia	49%	79%	30%	43%	72%	29%						
Remaining Flexibility Peak day (%)												
Croatia	42%	70%	28%	37%	64%	27%						
Single Largest Infrastructure Disruption (SLID)-Serbia												
Serbia							7%	0%	-7%	8%	0%	-8%
Market Integration												
Bi-directionality - Country												
HR <=> RS	0%	77%	77%	0%	77%	77%	0%	100%	100%	0%	100%	100%

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												
LNG and Interconnection Capacity Diversification (LICD)												
Croatia	5,174	3,447	-1,727	5,174	3,447	-1,727	5,005	3,336	-1,669	5,000	3,334	-1,667
Serbia	10,000	5,546	-4,454	10,000	5,552	-4,448	10,000	5,000	-5,000	10,000	5,000	-5,000
Security of Supply												
Algeria Pipe Disruption Curtailment Rate Peak Day (%)												
Bosnia Herzegovina	-18%	0%	18%	-18%	0%	18%	-36%	-27%	9%			
Serbia	-17%	0%	17%	-17%	0%	17%	-34%	0%	34%	-36%	0%	36%
Curtailment Rate 2-Week Cold Spell (%)												
Bosnia Herzegovina	-8%	0%	8%	-8%	-2%	6%	-24%	0%	24%	-26%	0%	26%
Serbia	-7%	0%	7%	-7%	-1%	6%	-23%	0%	23%	-25%	0%	25%
Curtailment Rate 2-Week Cold Spell (%) --- DF												
Bosnia Herzegovina	-8%	-1%	7%	-8%	-3%	5%	-24%	0%	24%	-26%	0%	26%
Serbia	-7%	-1%	7%	-7%	-3%	5%	-23%	0%	23%	-25%	0%	25%
Curtailment Rate Peak Day (%)												
Bosnia Herzegovina	-18%	-8%	10%	-18%	-10%	8%	-36%	-27%	9%			
Serbia	-17%	-8%	9%	-17%	-10%	7%	-34%	-8%	26%	-36%	-5%	31%
Remaining Flexibility 2-Week Cold Spell (%)												
Bosnia Herzegovina	0%	71%	71%				0%	100%	100%	0%	54%	54%
Serbia	0%	3%	3%				0%	10%	10%	0%	11%	11%
Remaining Flexibility 2-Week Cold Spell (%) --- DF												
Bosnia Herzegovina	0%	28%	28%				0%	83%	83%	0%	47%	47%
Serbia	0%	1%	1%				0%	4%	4%	0%	7%	7%
Single Largest Infrastructure Disruption (SLID)-Serbia												
Bosnia Herzegovina	86%	66%	-20%	86%	66%	-20%	90%	36%	-54%	90%	41%	-49%
Serbia	84%	64%	-20%	84%	64%	-20%	88%	34%	-54%	89%	36%	-53%
Market Integration												
Bi-directionality - Country												
HR <=> RS	0%	77%	77%	0%	77%	77%	0%	100%	100%	0%	100%	100%

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												
LNG and Interconnection Capacity Diversification (LICD)												
Croatia	3,425	2,584	-840	3,435	2,594	-841	3,336	2,502	-835	3,334	2,500	-833
Serbia	6,949	4,344	-2,605	6,956	4,350	-2,606	7,294	4,238	-3,056	7,306	4,242	-3,064
MASD-RU												
Croatia	28%	24%	-5%	32%	28%	-4%	30%	27%	-3%	23%	7%	-16%
Slovenia				33%	29%	-4%				23%	15%	-9%
Security of Supply												
Remaining Flexibility 2-Week Cold Spell (%)												
Croatia	53%	82%	30%	46%	76%	30%						
Remaining Flexibility 2-Week Cold Spell (%) --- DF												
Croatia	49%	78%	29%	43%	73%	29%						
Remaining Flexibility Peak day (%)												
Croatia	42%	69%	27%	37%	64%	28%	97%	100%	3%			
Single Largest Infrastructure Disruption (SLID)-Serbia												
Bosnia Herzegovina	8%	0%	-8%	8%	0%	-8%						
Serbia	8%	0%	-8%	8%	0%	-8%	27%	0%	-27%	28%	0%	-28%
Market Integration												
Bi-directionality - Country												
HR <=> RS	0%	77%	77%	0%	77%	77%	0%	100%	100%	0%	100%	100%

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)												
Croatia	3,425	2,584	-840	3,435	2,594	-841	3,336	2,502	-835	3,334	2,500	-833
Serbia	4,270	3,082	-1,188	4,276	3,086	-1,189	4,574	3,197	-1,377	4,586	3,202	-1,383
Security of Supply												
Remaining Flexibility 2-Week Cold Spell (%)												
Croatia	53%	84%	31%	46%	76%	30%						
Remaining Flexibility 2-Week Cold Spell (%) --- DF												
Croatia	49%	79%	30%	43%	72%	29%						
Remaining Flexibility Peak day (%)												
Croatia	42%	70%	28%	37%	64%	27%	97%	100%	3%			
Single Largest Infrastructure Disruption (SLID)-Serbia												
Serbia							7%	0%	-7%	8%	0%	-8%
Market Integration												
Bi-directionality - Country												
HR <=> RS	0%	77%	77%	0%	77%	77%	0%	100%	100%	0%	100%	100%

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 With Tariffs	Reference Supply	0.0	0.0	0.0	0.0	0.5	0.1	0.2	3.9	1.7
	Supply Maximization	0.0	0.0	0.0	0.0	4.8	0.5	0.3	6.7	3.6
Security of Supply	Design Case	4.3	5.8	5.4	1.7	1.7	1.7	0.5	0.5	0.5
	2-weeks Cold Spell	10.6	13.7	19.0	0.0	0.0	0.0	0.0	0.0	0.0
	2-weeks Cold Spell DF	8.9	13.6	18.8	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Supply Maximization	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
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	0.5	0.5	0.5	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	4.4	4.4	4.4	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	2.8	5.4	2.8	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	0.0	0.0	0.0	0.0	0.0	0.0	0.4	3.2	1.5	0.0	0.0	0.0	0.0	1.0	0.2	0.0	5.4	2.3
	Supply Maximization	0.0	0.0	0.0	0.0	3.9	1.6	0.6	6.5	5.3	0.0	0.0	0.0	0.0	7.2	0.2	0.1	8.7	3.2
Security of Supply	Design Case	4.8	6.3	5.9	1.9	1.9	2.3	0.5	0.5	0.5	5.0	30.0	6.4	2.0	2.0	2.0	0.6	0.6	0.6
	2-weeks Cold Spell	14.1	14.4	21.2	0.0	0.0	0.0	0.0	0.0	0.0	10.9	17.1	23.5	0.0	0.0	0.0	0.0	0.0	0.0
	2-weeks Cold Spell DF	9.9	14.5	21.3	0.0	0.0	0.0	0.0	0.0	0.0	10.8	17.3	23.8	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

C.4 Sensitivities analysis on monetised benefits [ENTSOG]

In line with ENTSOG Adapted 2nd CBA Methodology, ENTSOG 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 (ENTSOG or Promoter), the sensitivity analysis has been caried out by ENTSOG and according to the criteria in the approved CBA Methodology.

EXISTING Infrastructure Level

Benefits (Meur/year)		Commissioning Year Sensitivity			Lower Tariff Sensitivity			Higher Tariff Sensitivity			Cost of Disruption Sensitivity		
		NATIONAL TRENDS	DISTRIBUTED ENERGY	GLOBAL AMBITION	NATIONAL TRENDS	DISTRIBUTED ENERGY	GLOBAL AMBITION	NATIONAL TRENDS	DISTRIBUTED ENERGY	GLOBAL AMBITION	NATIONAL TRENDS	DISTRIBUTED ENERGY	GLOBAL AMBITION
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	0.0	0.0	0.0
	Supply Maximization	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Security of Supply	Design Case	4.3	4.3	4.3	4.3	5.8	5.4	4.3	5.8	5.4	1.1	4.3	3.5
	2-weeks Cold Spell	236.9	16.2	22.7	10.6	13.7	19.0	10.6	13.7	19.0	22.3	29.0	40.1
	2-weeks Cold Spell DF	10.5	16.4	22.9	8.9	13.6	18.8	8.9	13.6	18.8	18.8	28.6	39.7
Sustainability	CO2 and Other externalities savings (MEUR)	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

LOW Infrastructure Level

Benefits (Meur/year)		Commissioning Year Sensitivity			Lower Tariff Sensitivity			Higher Tariff Sensitivity			Cost of Disruption Sensitivity		
		NATIONAL TRENDS	DISTRIBUTED ENERGY	GLOBAL AMBITION	NATIONAL TRENDS	DISTRIBUTED ENERGY	GLOBAL AMBITION	NATIONAL TRENDS	DISTRIBUTED ENERGY	GLOBAL AMBITION	NATIONAL TRENDS	DISTRIBUTED ENERGY	GLOBAL AMBITION
EU Bill benefits With Tariffs	Reference Supply	0.0	0.7	0.1	0.5	8.7	5.4	0.0	0.0	0.0	0.0	0.5	0.1
	Supply Maximization	0.0	6.1	0.6	3.3	13.9	6.4	0.0	0.0	0.0	0.0	4.8	0.5
Security of Supply	Design Case	2.0	2.0	2.0	1.7	1.7	1.7	1.7	1.7	1.7	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
	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
Sustainability	CO2 and Other externalities savings (MEUR)	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

ADVANCED Infrastructure Level

Benefits (Meur/year)		Commissioning Year Sensitivity			Lower Tariff Sensitivity			Higher Tariff Sensitivity			Cost of Disruption Sensitivity		
		NATIONAL TRENDS	DISTRIBUTED ENERGY	GLOBAL AMBITION	NATIONAL TRENDS	DISTRIBUTED ENERGY	GLOBAL AMBITION	NATIONAL TRENDS	DISTRIBUTED ENERGY	GLOBAL AMBITION	NATIONAL TRENDS	DISTRIBUTED ENERGY	GLOBAL AMBITION
EU Bill benefits With Tariffs	Reference Supply	0.2	3.9	1.7	1.4	6.9	7.5	0.0	0.0	0.0	0.2	3.9	1.7
	Supply Maximization	0.3	6.7	3.6	2.2	11.5	9.6	0.0	0.0	0.0	0.3	6.7	3.6
Security of Supply	Design Case	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	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
	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
Sustainability	CO2 and Other externalities savings (MEUR)	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

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-A-70	Transmission gas pipeline	DN800, length 105 km and DN 500, length 30 km	NO

Potential impact	Mitigation measures	Related costs included in project CAPEX and OPEX	Additional expected costs
Major potentially environmental impact of the project occurs during the construction period (disturbance, impacts due to the dust, noise from transport and machineries).	For the Slobodnica-Bačko Novo Selo, EIA procedure has been carried out and a Decision on acceptability has been issued by the Croatian line Ministry. The Decision on acceptability issued by the Ministry includes prescribed relevant environmental protection measures for reducing the potential impacts to the lowest level. EIA procedures were carried out in accordance with the Croatian national legislation, that is, they have been aligned with the EU requirements. EIA procedure for Osijek-Vukovar pipeline will be carried out in accordance with the Croatian national legislation, that is, they have been aligned with the EU requirements.	Included in project CAPEX	Not expected

Environmental Impact explained [Promoter]

Major influences of the project on the economic and environmental dimensions are to be felt during the construction period (disturbance, traffic disturbance where secondary roads are cut, and impacts due to the dust, noise, transport machinery, and other machineries). The impacts on the environment are likely to appear in the following areas: air quality, noise, geomorphology, habitats, flora and fauna, cultural heritage, occupational health, waste and accidents. The proposed environmental protection measures include measures prescribed by national law and other regulations, protection measures in accidental situations, plans and technical solutions for environmental protection as well as other protective measures. Protection measures for reducing the possible impacts to the lowest possible level are proposed in the EIA procedures.

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 implementation of the projects within this Group will have positive impact on the integration of the Croatian and Serbian gas markets. The construction of the pipelines from this Group will enhance security of supply for both Serbia and Croatia and provide additional volumes of gas available to the market. In addition to providing transport of significant gas volumes towards and from Serbia, the construction of these gas pipelines increases internal security of supply of eastern Slavonia by creating a 50-bar loop Donji Miholjac - Vukovar - Slavonski Brod - Donji Miholjac. In addition to the planned connection with Serbia, it will be supplied from the 75-bar system from MRN Donji Miholjac and GN Slobodnica.

F. Useful Links

The project website: www.plinacro.hr

Network Development Plan:
https://www.plinacro.hr/UserDocsImages/dokumenti/Desetogodi%C5%A1nji%20plan%20razvoja%20PTS%202018-2027.pdf