
Results of the PEI/PMI 2018 Assessment

Gas and Oil Infrastructure Projects

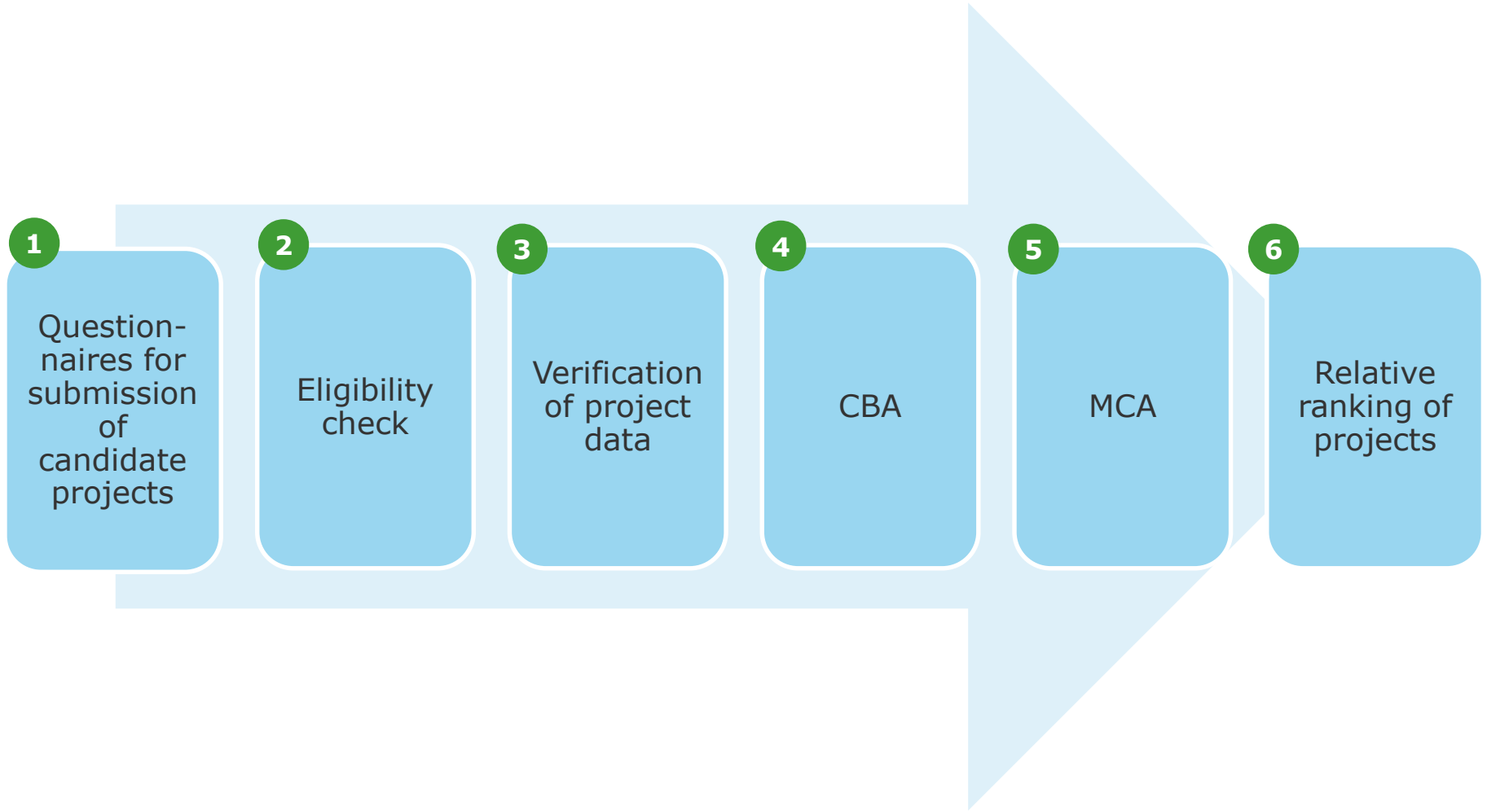
4th PEI/PMI Gas-Oil Group meeting, Vienna

23.05.2018

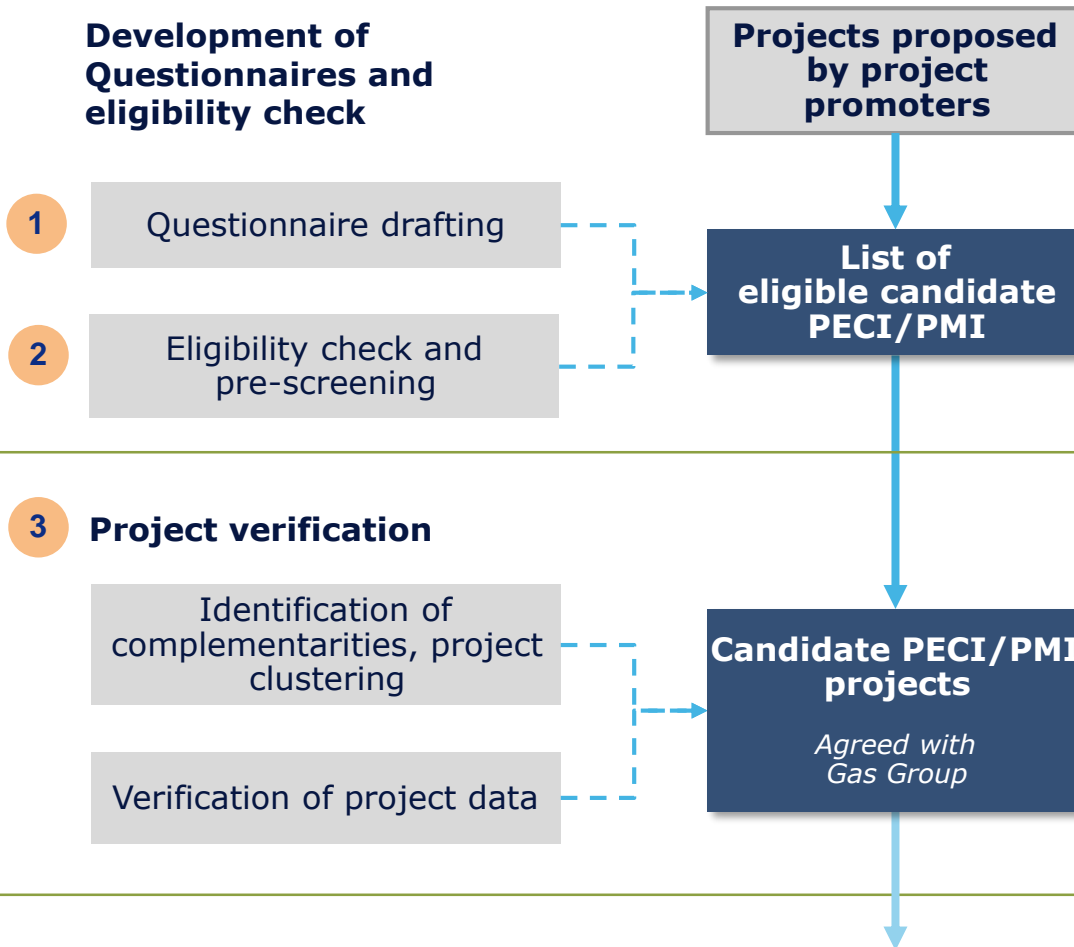
Agenda

1. Overview of Assessment Methodology
2. Reference scenario for CBA modelling
3. Results of cost-benefit analysis and sensitivities
4. Results of multicriteria assessment and relative ranking
5. Individual project results

Steps of the Project Assessment

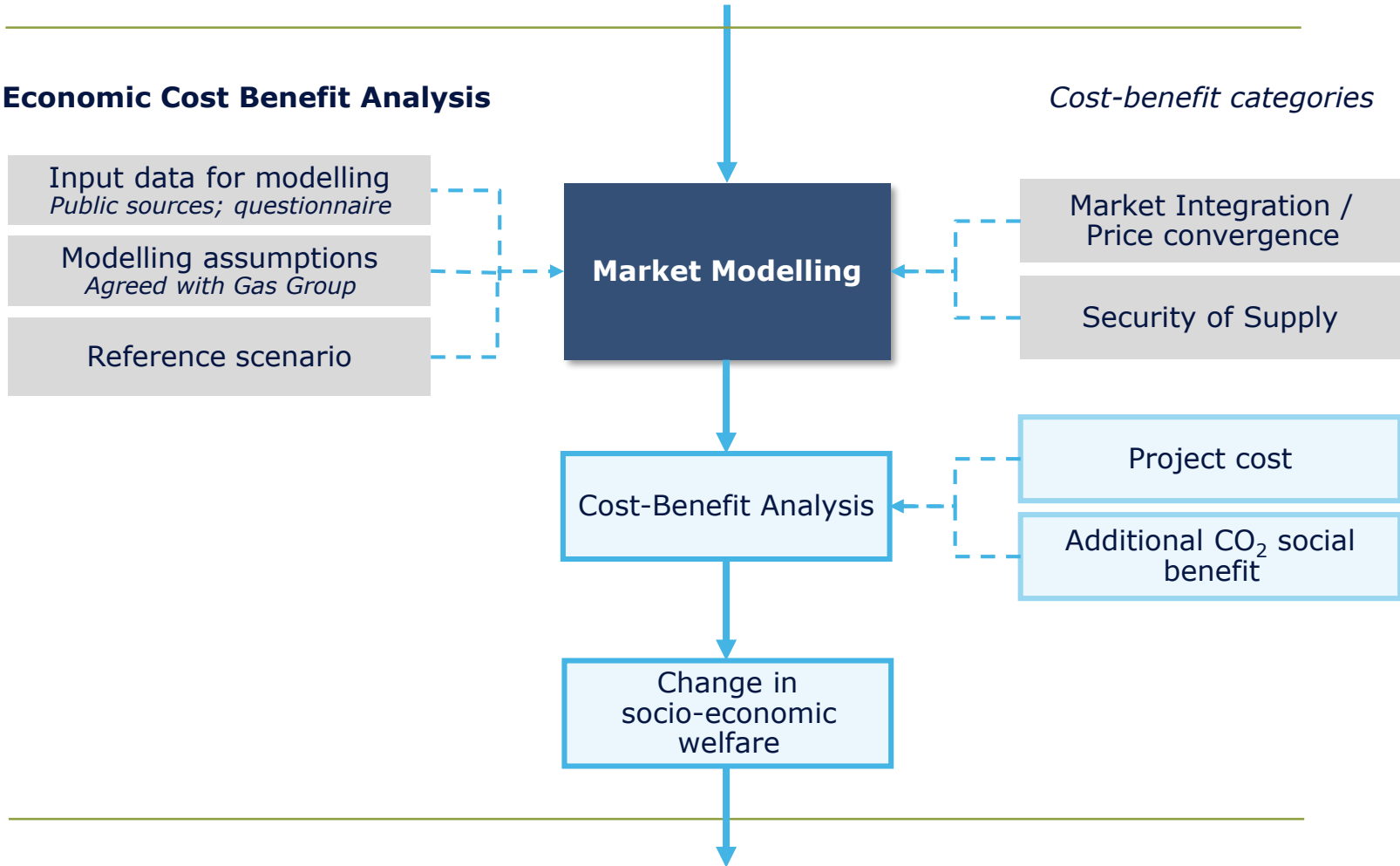


Call for projects and Pre-screening – Interim Report



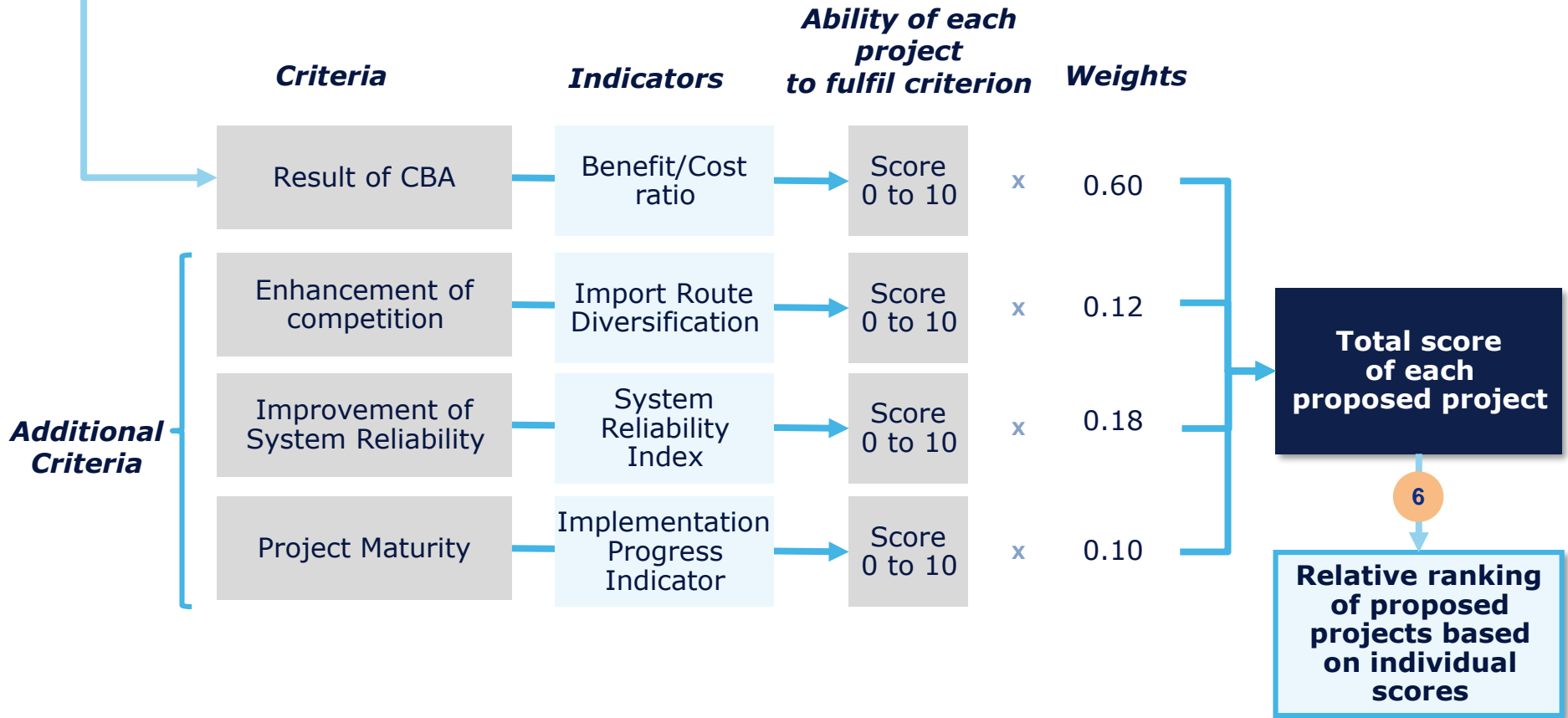
Cost Benefit analysis – Market modelling with EGMM

4 Economic Cost Benefit Analysis



Multi-criteria assessment and ranking

5 Multi-Criteria Assessment



Summary of submitted infrastructure projects

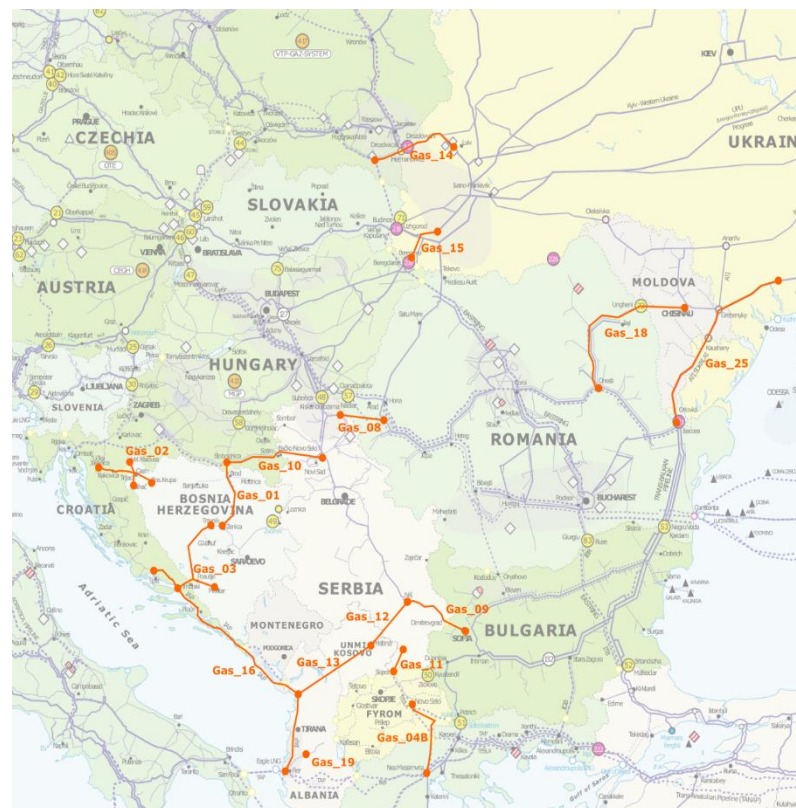
	Electricity transmission	Electricity storage	Gas transmission	Gas storage	LNG	Smart grid	Oil	Total
Submitted projects (#)	11*	0	20	1	1	0	2	35
Submitted investment cost (million €)	963	0	19 351	69-74	6 294	0	381	c.a 27 061
Future investment need (million €)**	758	0	7 907	69-74	6 294	0	381	c.a. 15 412

**The different parts of Transbalkan electricity corridor are considered as one project.*

***Investment cost of projects already under construction is excluded.*

Summary of eligible gas projects (I)

Project code (Country A-B)	Total cost (M€)	Commission date	Capacity from A to B (GWh/day)	Capacity from B to A (GWh/day)	
GAS_01 (HR-BH)	94	2023	44	44	
GAS_02 (HR-BH)	49	2026	0	73	
GAS_03 (HR-BH)	116	2023	38	75	
GAS_04B (GR-FYROM)	120	2020	76	76	
GAS_08 (RS-RO)	9.5	2019	35	35	
GAS_09 (BG-RS)	119	2022	39	39	
GAS_10 (RS-HR)	147	2026	33	33	
GAS_11 (RS- FYROM)	8.5	2012	10	10	
GAS_12 (RS-KO*)	160	2016	26	26	
GAS_13 (KO*-AL)	200	2022	53	53	
GAS_14 (PL- UA)	241	2020	153	2015	
GAS_15 (HU-UA)	40.5	2023	180	0 (existing)	
GAS_16 (IAP) (AL-MO)	583	2023	120	120	
GAS_16 (IAP) (MO-HR)			110	110	
Project	Total cost (M€)	Commission date	Working gas (TWh)	Withdrawal capacity (GWh/day)	Injection capacity (GWh/d)
GAS_19 UGS AL-1	69	2024	3	15	7.5
GAS_19A UGS AL-2	74	2024	11	70	49



Summary of eligible gas projects (II) – Black Sea region

Project code (Country A-B)	Total cost (M€)	Commission date	Capacity from A to B (GWh/day)
GAS_20 (SCP-X and fX) (AZ-GE)	4205 and 830	2019 2022	855 +150
GAS_21 (TANAP) (GE-TR)	4195	2018	485
GAS_21 (TANAP) (TR-GR)			317
GAS_22 (TCP)	730 (P1)	2020 (P1)	490 (P1)
GAS_23 (Whitestream) (GE-RO)	4105	2022	490
GAS_25 (Trans Balkan rf) (UA-MD)	14 (P1)	2019 (P1) 2021 (P2) 2024 (P3)	43 (P1) 143 (P2) 574 (P3)



Project	Total cost (M€)	Commission date	Maximum annual capacity (TWh/year)	Maximum sendout capacity (GWh/day)	Storage capacity (GWh)
GAS_24 AGRI LNG	6 294	2030	88	240	3500

Summary of eligible oil projects



Name of the project	Project promoter	Type of infrastructure
OIL_01	Brody- Adamovo oil pipeline project	MPR Sarmatia Sp. z o.o. and PSC Ukrtransnafta
OIL_02	Transportation of different crudes of oil via Southern Druzhba pipeline	PJSC Ukrtransnafta (Ukraine), in cooperation with SOCAR (Republic of Azerbaijan) and GOGC (Georgia)

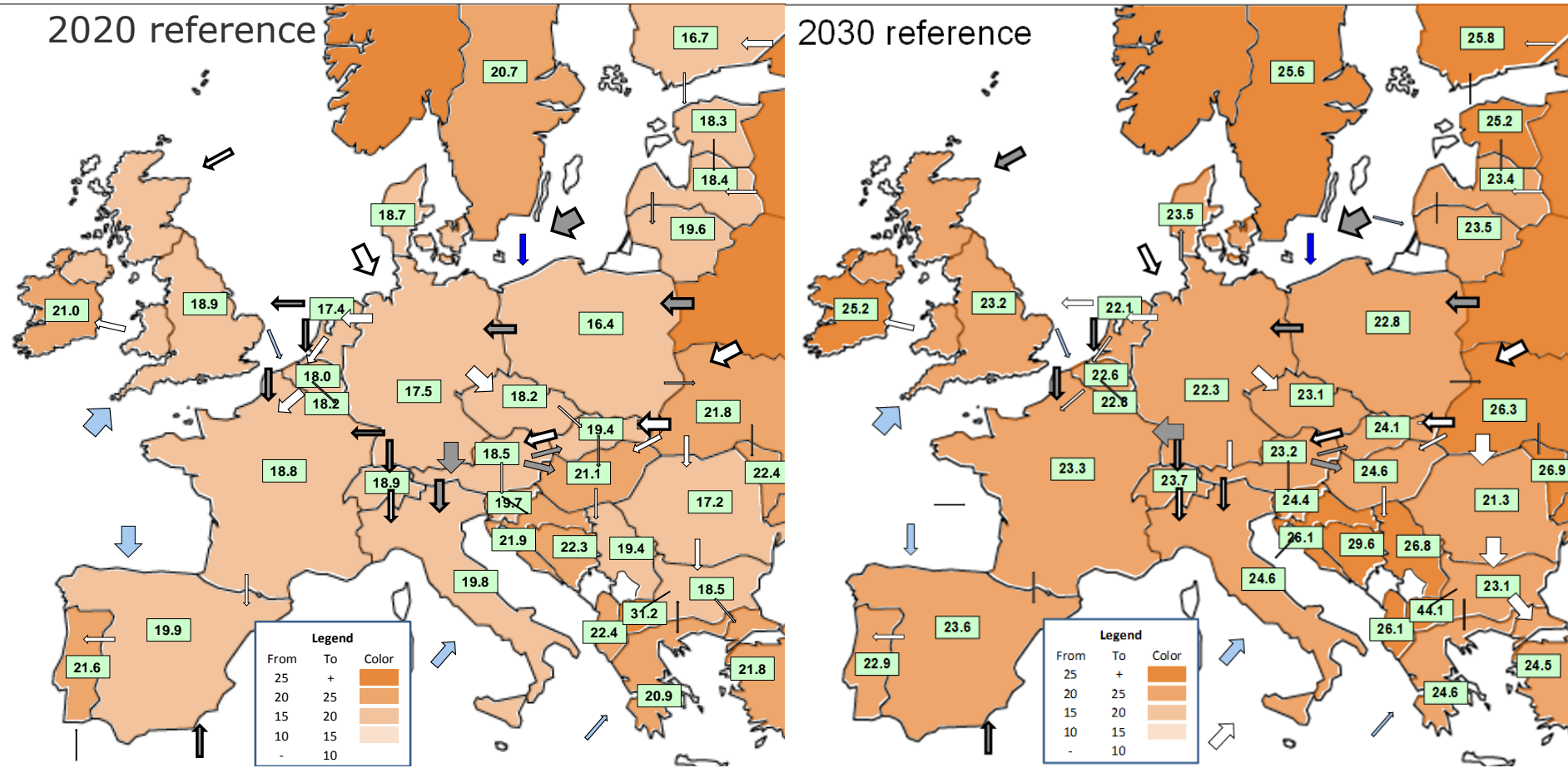
Clustering of gas infrastructure projects

- Modelling assumptions for the southern route:
 - GAS_22 (Trans-Caspian Pipeline String)
 - SCP-(f)X is in place
 - Capacity and cost data for SCP-(f)X not reported in questionnaire by promoter
 - Capacity figures of 5 bcm/yr submitted for the TYNDP 2018 process used as proxy
 - Costs estimated based on SCP-X
 - Capacity on SCP-(f)X available for third parties
 - GAS_23 (White Stream)
 - Clustered with GAS_22 (Trans-Caspian Pipeline) + GAS 21 (SCP-(f)X)
 - GAS 24 (AGRI_LNG)
 - Clustered with GAS_22 (Trans-Caspian Pipeline) + GAS 21 (SCP-(f)X)
 - TANAP and SCP-X are part of the reference, hence they were clustered and analysed by taking them out of the reference (TOOT)
- Reverse flow on Trans-Balkan modelled allowing reverse flow between TR-BG and BG-RO

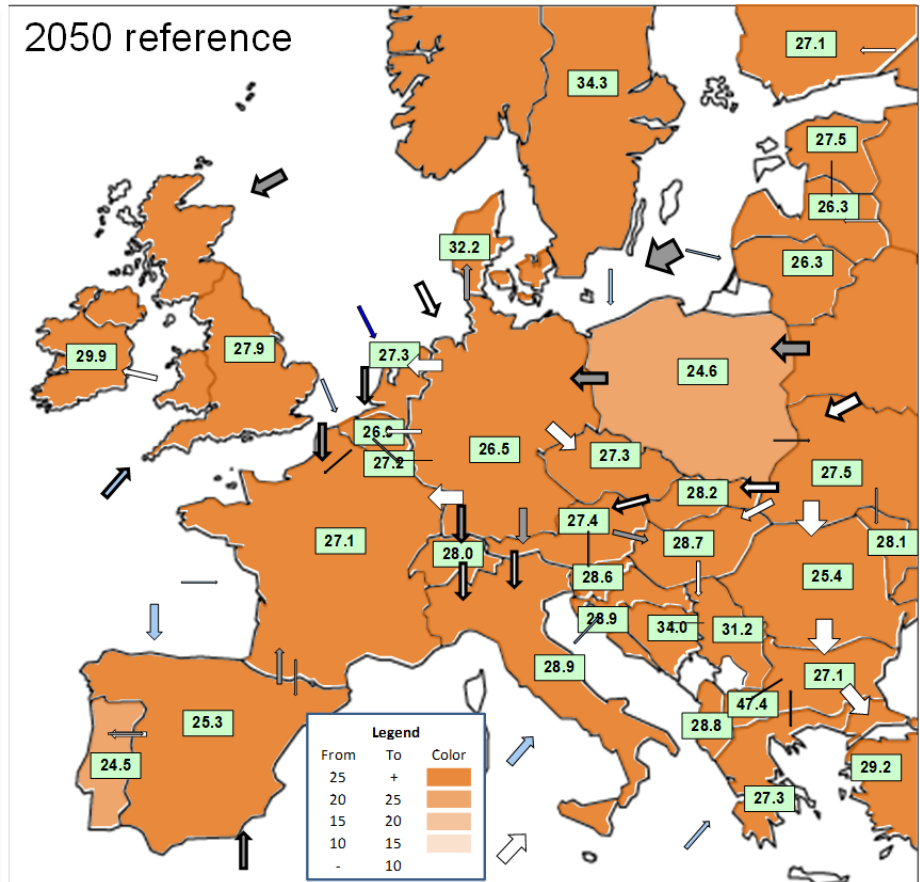
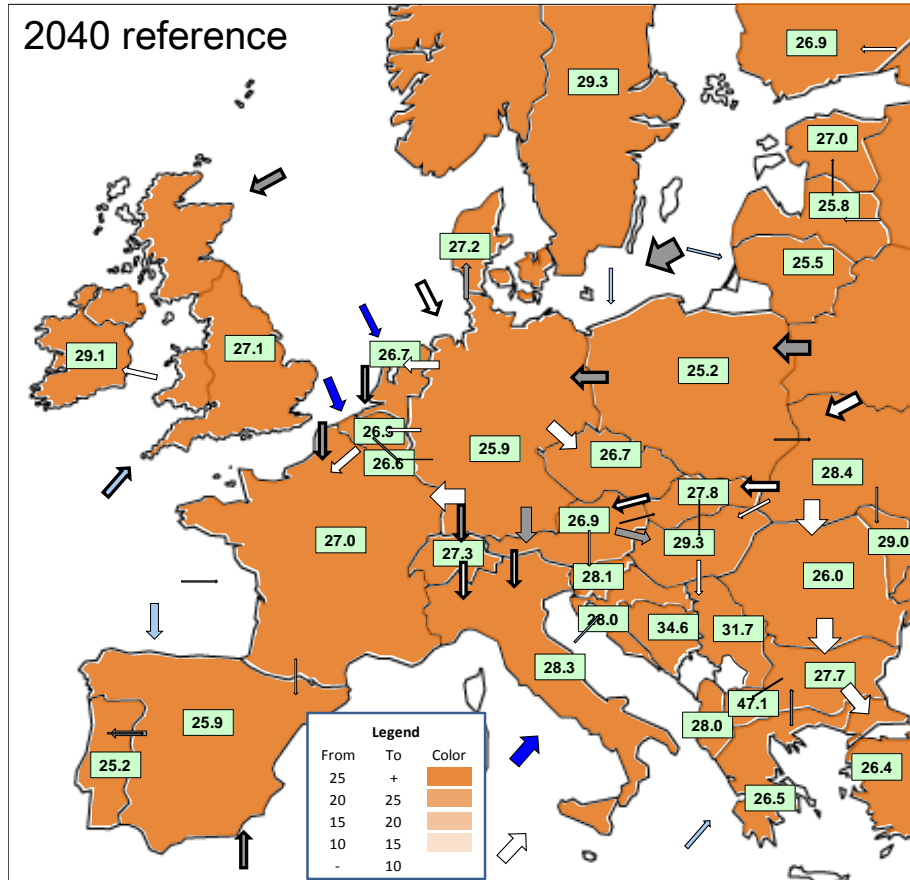
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Reference for 2020, 2030 (modelled wholesale gas prices, €/MWh)

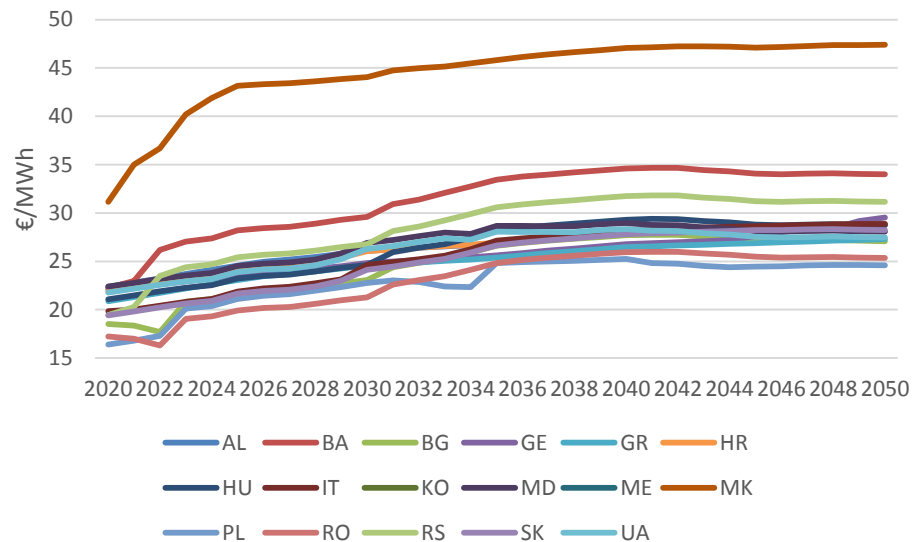


Reference for 2040, 2050 (modelled wholesale gas prices, €/MWh)



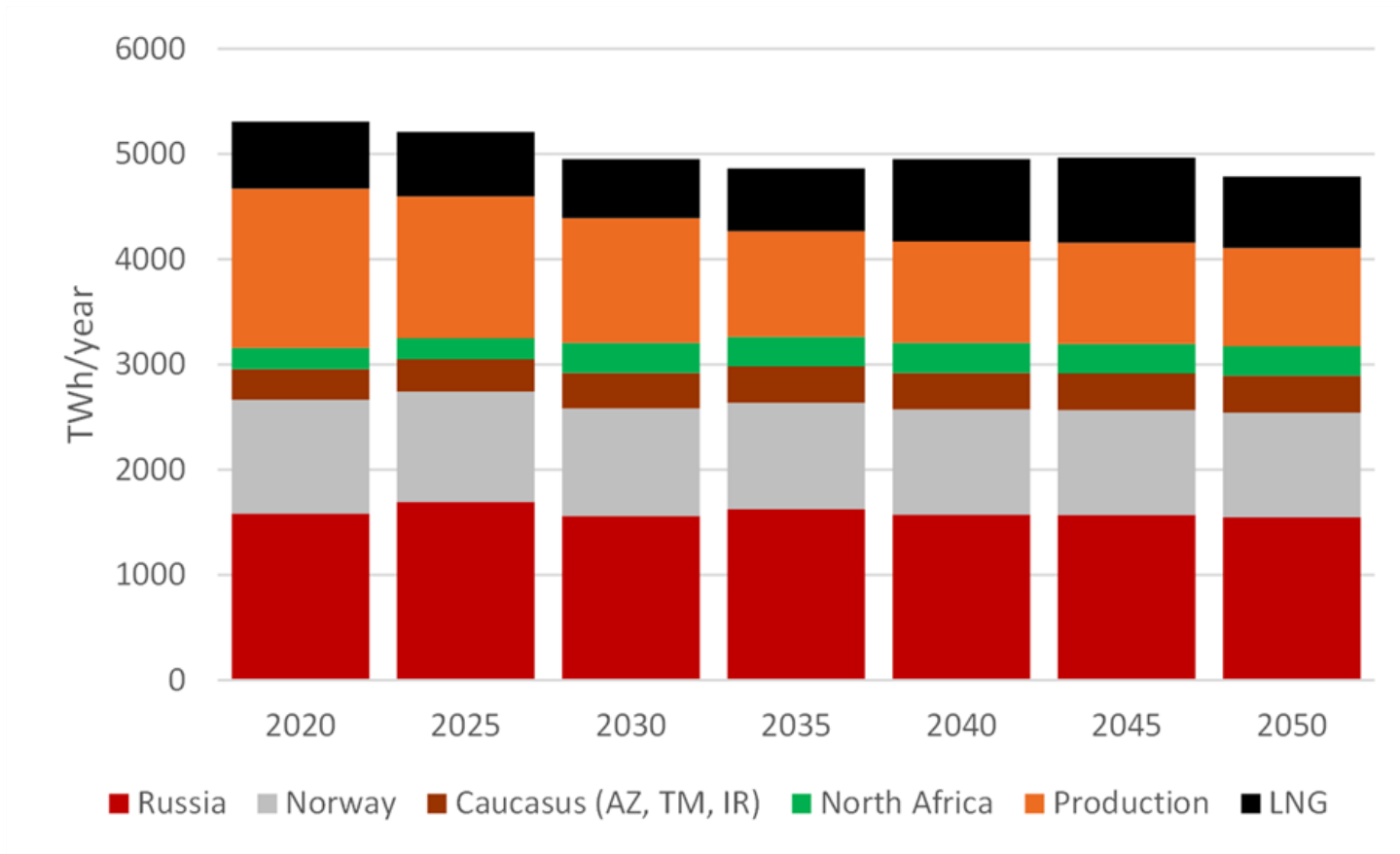
Introduction of the reference scenario

Figure 1. Yearly average wholesale price in the EnC CPs and the neighboring EU MSs 2020-2050 (€/MWh)



- Based on the input data provided the natural gas wholesale prices in the region are increasing between 2020-2050 from about 19-25 €/MWh to 20-35 €/MWh.
- The price in the FYR of Macedonia is clearly an outlier, due to the forecasted demand growth. The same is true on a lower level for the second most expensive country, that is Bosnia and Herzegovina.

Supply structure in the reference (2020-2050)



Source: REKK, EGMM

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Gas CBA Results (region, ref)

		Cons.	Prod.	Infra OP	Infra AUC	Trader	Total Wf	CO2	Inv	NPV	B/C	Can be ranked ?	Comment
GAS_01	HR-BiH North	828	-169	-15	-10	-106	527	146	94	579	7.17	YES	Project specific demand is assumed
GAS_02	HR-BiH West	532	-201	-54	-11	-113	153	79	49	183	4.75	YES	Project specific demand is assumed
GAS_03	HR-BiH South	828	-169	-15	-10	-106	527	146	163	511	4.14	YES	Project specific demand is assumed
GAS_04B	GR-FYROM	3546	-621	109	-1293	-283	1459	563	120	1902	16.92	YES	Project specific demand should have been assumed?
GAS_08	RS--RO	-51	630	-483	239	-391	-56	26	55	-85	-0.56	YES	ENDIG ISOLATION, HU TSO loss
GAS_09	IBS	176	223	-254	159	-283	21	23	151	-108	0.29	YES	ENDIG ISOLATION, HU TSO loss
GAS_10	HR-RS	1103	-710	-38	84	-254	186	139	147	178	2.21	YES	
GAS_11	RS-FYROM	164	189	139	-75	106	523	95	23	596	27.48	YES	
GAS_12	RS-KO*	449	294	180	17	111	1050	326	60	1317	22.94	NO	NEWLY GASIFIED –overestimated
GAS_13	KO*-AL	990	1	131	2	4	1127	338	200	1265	7.32	NO	NEWLY GASIFIED –overestimated
GAS_14	PL-UA	1000	-807	21	-58	349	505	13	241	277	2.15	YES	
GAS_15	HU-UA	-69	40	7	7	18	2	-5	41	-43	-0.06	YES	Costs doubled since 2016 – Difficult to capture „firm”
GAS_16	IAP	3807	37	450	12	48	4354	827	583	4598	8.89	NO	NEWLY GASIFIED –overestimated
GAS_18	RO-MD	-56	245	-323	-74	210	3	52	242	-187	0.23	YES	ENDIG ISOLATION, HU TSO loss
GAS_19	AL storage V1	6	1	25	0	8	41	0	69	-28	0.59	NO	Storage well utilized
GAS_19A	AL storage V2	30	3	-18	4	2	21	2	74	-51	0.31	NO	Storage well utilized
Cluster													
GAS20_21	TANAP, SCP-X	-17783	3744	-36	1952	7794	-4329	-748	0	-5077	n.a.	NO	TOOT, sunk cost assumed
GAS_22	TCP	209	-13	-186	2076	-131	1955	28	830	1152	2.39	YES	Congestion on SCPfX limits the benefits
GAS_23	White Stream	209	-13	-186	2076	-131	1955	28	4935	-2952	0.40	YES	HIGH COST - congestion on SCPfX
GAS_24	AGRI LNG	306	-18	268	1634	-291	1899	60	7124	-5166	0.27	YES	HIGH COST - congestion on SCPfX
GAS_25	Trans Balkan	-504	440	-384	204	248	4	50	44	9	1.21	YES	Costs might be underestimated

Gas CBA Sensitivity Results on demand and infrastructure

Peci Code		Reference	+10% EU demand	-10% EU demand	-25% EnC demand	-50% EnC demand	No HR LNG	High LNG supply	Low LNG supply	TOOT	Deep iteration
GAS_01	HR-BiH North	579	626	454	365	177	483	655	488	684	161
GAS_02	HR-BiH West	183	154	99	68	5	75	227	105	163	-214
GAS_03	HR-BiH South	511	557	385	296	108	414	587	420	753	92
GAS_04B	GR-FYROM	1902	2212	1418	976	164	1858	2051	1437	-989	322
GAS_08	RS--RO	-85	34	-382	-392	-519	-103	-227	-149	-538	4
GAS_09	IBS	-108	-58	-204	-167	-266	-141	170	-184	-331	-26
GAS_10	HR-RS	178	5	-67	-39	-68	-182	501	-156	-40	-31
GAS_11	RS-FYROM	596	618	561	473	289	556	591	599	-10	270
GAS_12	RS-KO*	1317	1549	1294	1021	735	1338	1418	1371	n.a.	1386
GAS_13	KO*-AL	1265	1422	1094	897	513	1241	1287	1051	n.a.	1234
GAS_14	PL-UA	277	120	6	-142	-240	199	807	194	-217	-74
GAS_15	HU-UA	-43	-26	-34	-41	-39	-78	-34	-70	40	-54
GAS_16	IAP	4598	5069	4087	3272	2040	4536	5131	4170	n.a.	1808
GAS_18	RO-MD	-187	-269	-146	-287	-250	-218	-154	-236	-428	-194
GAS_19	AL storage V1	-28	-31	-62	-46	-53	-59	-64	-55	69	4
GAS_19A	AL storage V2	-51	-23	-59	-51	-56	-60	-64	-63	n.a.	18
GAS_22	TCP	1152	1159	1311	1139	1097	1156	376	2438	800	1235
GAS_23	White Stream	-2952	-2946	-2793	-2966	-3008	-2950	-3728	-1667	4592	-2870
GAS_24	AGRI LNG	-5166	-5104	-5121	-5197	-5216	-5175	-5934	-3858	5990	-5117
GAS_25	Trans Balkan	9	-115	83	-3	-60	-54	118	-15	-923	271

Gas CBA Sensitivity Results on Region Definition

Project Code	Project name	Year	NPV (Region =EnC+neighb EU MS)	NPV (EnC CPs)	NPV (hosting countries)
GAS_01	HR-BiH North	2023	579	523	684
GAS_02	HR-BiH West	2026	183	157	272
GAS_03	HR-BiH South	2023	511	508	616
GAS_04B	GR-FYROM	2020	1902	2375	2528
GAS_08	RS--RO	2020	-85	300	350
GAS_09	IRS	2022	-108	130	232
GAS_10	HR-RS	2026	178	126	252
GAS_11	RS-FYROM	2021	596	744	748
GAS_12	RS-KO*	2026	1317	1251	1290
GAS_13	KO*-AL	2023	1265	1211	1207
GAS_14	PL-UA	2020	277	304	490
GAS_15	HU-UA	2023	-43	-1	-47
GAS_16	IAP	2023	4598	4574	4567
GAS_18	RO-MD	2019	-187	239	180
GAS_19	AL storage V1	2024	-28	-38	-47
GAS_19A	AL storage V2	2024	-51	-49	-46
GAS_22	TCP	2022	1152	1423	1709
GAS_23	White Stream	2022	-2952	-2681	-2641
GAS_24	AGRI LNG	2030	-5166	-2036	-5180
GAS_25	Trans Balkan	2019	9	241	327

Notes on Gas CBA Results

- All projects have a cross border impact (even storage) – general criterion is met
- Those projects that end isolation, do by definition hurt the (maybe extra) profit of the TSOs on the former monopoly route. These TSOs are generally not in the EnC CPs. This phenomenon decreases the NPV of the projects when EnC and EU neighbours are considered (IBS, RO-MD); whereas these projects are beneficiary for EnC region.
- Newly gasified countries have no gas demand in the reference, hence for them the total consumer benefit will be assigned to the project – they are therefore not comparable to projects in existing gas markets and for that reason not shown in a joint ranking with all other projects
- TANAP and SCP-X are included in the reference, hence they could only been assessed by taking them out of the reference (TOOT). Their result can be not compared with any other project in the assessment.

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Gas MCA Results – Developed Gas Markets


Project Code	Countries	Change in Indicator due to Project				Scores of Indicators [Scale 1 (min) to 10 (max)]				Weighted Scores of Indicators				Total Score
		Benefit-Cost Ratio (B/C ratio)	System Reliability Index (SRI)	Import Route Diversification (IRD)	Implementation Progress Indicator (IPI)	B/C ratio	SRI	IRD	IPI	B/C ratio (60%)	SRI (18%)	IRD (12%)	IPI (10%)	
GAS_01	HR-BiH North	7.17	1.08	0.37	2.00	3.04	7.59	7.20	2.00	1.82	1.37	0.86	0.20	4.25
GAS_02	HR-BiH West	4.75	1.08	0.27	2.00	2.21	7.59	5.42	2.00	1.33	1.37	0.65	0.20	3.54
GAS_03	HR-BiH South	4.14	1.08	0.27	2.00	2.00	7.59	5.33	2.00	1.20	1.37	0.64	0.20	3.41
GAS_04B	GR-FYROM	16.92	1.45	0.11	3.00	6.38	10.00	2.48	3.00	3.83	1.80	0.30	0.30	6.23
GAS_08	RS--RO	-0.56	0.26	0.37	2.00	0.00	2.29	7.33	2.00	0.00	0.41	0.88	0.20	1.49
GAS_09	IBS	0.29	0.41	0.36	3.00	0.00	3.25	7.10	3.00	0.00	0.58	0.85	0.30	1.74
GAS_10	HR-RS	2.21	0.31	0.34	1.00	1.34	2.61	6.77	1.00	0.80	0.47	0.81	0.10	2.19
GAS_11	RS-FYROM	27.48	0.44	0.52	1.00	10.00	3.45	10.00	1.00	6.00	0.62	1.20	0.10	7.92
GAS_14	PL-UA	2.15	0.07	0.03	4.00	1.32	1.00	1.00	4.00	0.79	0.18	0.12	0.40	1.49
GAS_15	HU-UA	-0.06	0.08	0.04	2.00	0.00	1.08	1.09	2.00	0.00	0.19	0.13	0.20	0.53
GAS_18	RO-MD	0.23	0.52	0.48	4.00	0.00	3.97	9.33	4.00	0.00	0.71	1.12	0.40	2.23
GAS_22	TCP + SCP(f)X [Cluster]	2.39	0.32	0.11	1.00	1.40	2.68	2.46	1.00	0.84	0.48	0.30	0.10	1.72
GAS_23	Whitestream + TCP + SCP(f)X [Cluster]	0.40	0.72	0.37	3.00	0.00	5.28	7.30	3.00	0.00	0.95	0.88	0.30	2.13
GAS_24	AGRI LNG + TCP + SCP(f)X [Cluster]	0.27	0.35	0.27	1.00	0.00	2.86	5.35	1.00	0.00	0.51	0.64	0.10	1.26
GAS_25	Trans Balkan	1.21	0.23	0.11	2.00	1.00	2.10	2.41	2.00	0.60	0.38	0.29	0.20	1.47
GAS_20-21	SCPx + TANAP [Cluster]	-	1.18	0.35	10.00	10.00	8.28	6.90	10.00	6.00	1.49	0.83	1.00	9.32

Gas MCA Results – Projects in Newly Gasified Countries


Project Code	Countries	Change in Indicator due to Project				Scores of Indicators [Scale 1 (min) to 10 (max)]				Weighted Scores of Indicators				Total Score
		Benefit-Cost Ratio (B/C ratio)	System Reliability Index (SRI)	Import Route Diversification (IRD)	Implementation Progress Indicator (IPI)	B/C ratio	SRI	IRD	IPI	B/C ratio (60%)	SRI (18%)	IRD (12%)	IPI (10%)	
GAS_12	RS-KO*	22.94	0.00	0.00	1.00	10.00	1.00	1.00	1.00	6.00	0.15	0.15	0.10	6.40
GAS_13	KO*-AL	7.32	0.00	0.00	2.00	1.00	1.00	1.00	2.00	0.60	0.15	0.15	0.20	1.10
GAS_16	IAP	8.89	0.42	0.06	4.00	1.95	1.86	2.00	4.00	1.14	0.28	1.50	0.40	3.32
GAS_19	AL storage V1	0.59	0.98	0.00	2.00	0.00	3.01	1.00	2.00	0.00	0.45	0.15	0.20	0.80
GAS_19A	AL storage V2	0.31	4.37	0.00	2.00	0.00	10.00	1.00	2.00	0.00	1.50	0.15	0.20	1.85

Relative Ranking of Gas Projects – Developed Gas Markets (I)

Rank	Project Code	Project Name
1	GAS_11	Gas Interconnector Serbia Macedonia
2	GAS_04_B	Gas Interconnection Greece-Former Yugoslav Republic of Macedonia (IGF)
3	GAS_01	Interconnection Pipeline BiH-HR (Slobodnica-Brod-Zenica)
4	GAS_02	Interconnection Pipeline BiH-HR (Licka Jesenica-Trzac-Bosanska Krupa)
5	GAS_03	Interconnector BiH-HR (Ploce-Mostar-Sarajevo Zagvozd-Posusje-Travnik)
6	GAS_18	NTS RO-MD
7	GAS_10	Gas Interconnector Serbia-Croatia
8	GAS_23	Whitestream + TCP + SCP(f)X [Cluster]
9	GAS_09	IBS Bulgarian
10	GAS_22	TCP + SCP(f)X [Cluster]
11	GAS_08	Gas Interconnector Serbia Romania
12	GAS_14	Gas interconnection Poland - Ukraine
13	GAS_25	Trans-Balkan Bi-directional Flow
14	GAS_24	AGRI LNG + TCP + SCP(f)X [Cluster]
15	GAS_15	Firm capacities from HU to UA



Positive NPVs



Negative NPVs

Relative Ranking of Gas Projects – Developed Gas Markets (II) (not considering projects with negative NPVs)

Rank	Project Code	Project Name
1	GAS_11	Gas Interconnector Serbia Macedonia
2	GAS_04_B	Gas Interconnection Greece-Former Yugoslav Republic of Macedonia (IGF)
3	GAS_01	Interconnection Pipeline BiH-HR (Slobodnica-Brod-Zenica)
4	GAS_02	Interconnection Pipeline BiH-HR (Licka Jesenica-Trzac-Bosanska Krupa)
5	GAS_03	Interconnector BiH-HR (Ploce-Mostar-Sarajevo Zagvozd-Posusje-Travnik)
6	GAS_10	Gas Interconnector Serbia-Croatia
7	GAS_22	TCP + SCP(f)X [Cluster]
8	GAS_14	Gas interconnection Poland - Ukraine
9	GAS_25	Trans-Balkan Bi-directional Flow



Positive
NPVs


Project Code	Project Name
GAS_18	NTS RO-MD
GAS_23	Whitestream + TCP + SCP(f)X [Cluster]
GAS_09	IBS Bulgarian
GAS_08	Gas Interconnector Serbia Romania
GAS_24	AGRI LNG + TCP + SCP(f)X [Cluster]
GAS_15	Firm capacities from HU to UA

Negative
NPVs

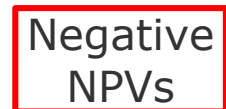
Relative Ranking of Gas Projects – Newly Gasified Countries

Rank	Project Code	Project Name
1	GAS_12	Gas Interconnector Serbia Montenegro (incl. Kosovo*) - Section Niš (Doljevac) - Priština
2	GAS_16	IONIAN ADRIATIC PIPELINE (IAP)
3	GAS_19A	Underground Gas Storage Dumrea - Albania version 2
4	GAS_13	Albania Kosovo* Gas Pipeline (ALKOGAP)
5	GAS_19	Underground Gas Storage Dumrea - Albania

Positive
NPVs



Negative
NPVs



Oil Assessment - Results and Ranking

PECI / PMI Projects

Project Code	Project Name	Countries	Eligibility for PECI or PMI status?	Costs and benefits	Security of supply	Environmental risk mitigation	Interoperability	Project maturity	Rank
OIL_01	Brody – Adamowo oil pipeline	UA, PL	Eligible for PECI status	As the project already holds the status of PCI and PECI it was already shown that benefits outweigh costs	Improved security of supply by diversification of oil supply routes and sources and reverse flow possibilities	Avoiding shipping risks and emissions	High level of interoperability	Mature	1
OIL_02	Transportation of different crudes of oil via Southern Druzhba pipeline	GE, UA, AT, HU, CZ, SK	Eligible for PMI status	Costs indicated in the documentation are very low (€ 21.6 m), compared to this, large benefits are foreseen	Improved security of supply through supply source diversification and increased supply stability	Avoiding shipping risks and emissions	Interoperability is assured	Preparatory	2

Agenda

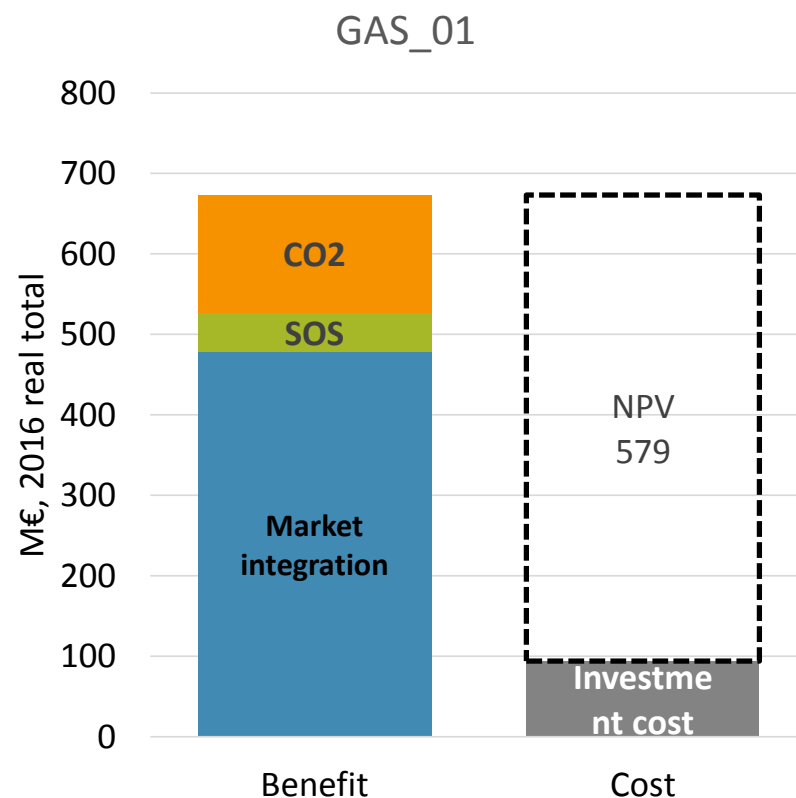
1. Overview of Assessment Methodology
2. Reference scenario for CBA modelling
3. Results of cost-benefit analysis and sensitivities
4. Results of multicriteria assessment and relative ranking
5. Individual project results

Gas_01: Interconnection Pipeline - Slobodnica-Brod-Zenica

	Cons.	Prod.	Infra		Total		CO2	Inv	NPV	B/C
			OP	AUC	Trader	Wf				
AL	0	0	0	0	0	0	0	0	0	0.00
BA	572	0	28	0	-50	549	118	85	582	7.85
BG	13	-1	0	1	-9	3	1	0	4	0.00
GE	-1	0	-1	0	2	0	0	0	0	0.00
GR	-1	0	-1	0	0	-2	0	0	-2	0.00
HR	-5	3	110	2	2	112	0	9	103	12.43
HU	46	-2	-60	-11	-10	-37	4	0	-33	0.00
IT	21	-1	1	0	-14	6	1	0	7	0.00
KO*	0	0	0	0	0	0	0	0	0	0.00
MD	3	0	0	0	0	3	0	0	3	0.00
ME	0	0	0	0	0	0	0	0	0	0.00
MK	1	0	0	1	0	2	0	0	3	0.00
PL	27	-17	-1	-1	-12	-3	4	0	1	0.00
RO	60	-75	-3	0	-3	-21	5	0	-16	0.00
RS	15	-1	-77	0	-9	-71	2	0	-69	0.00
SK	4	0	-7	0	-4	-7	0	0	-7	0.00
UA	74	-75	-3	-1	0	-5	11	0	5	0.00
Region	828	-169	-15	-10	-106	527	146	94	579	7.17
EnC	663	-76	-52	0	-57	478	131	85	523	7.16
Hosting	566	3	137	2	-48	661	117	94	684	8.28

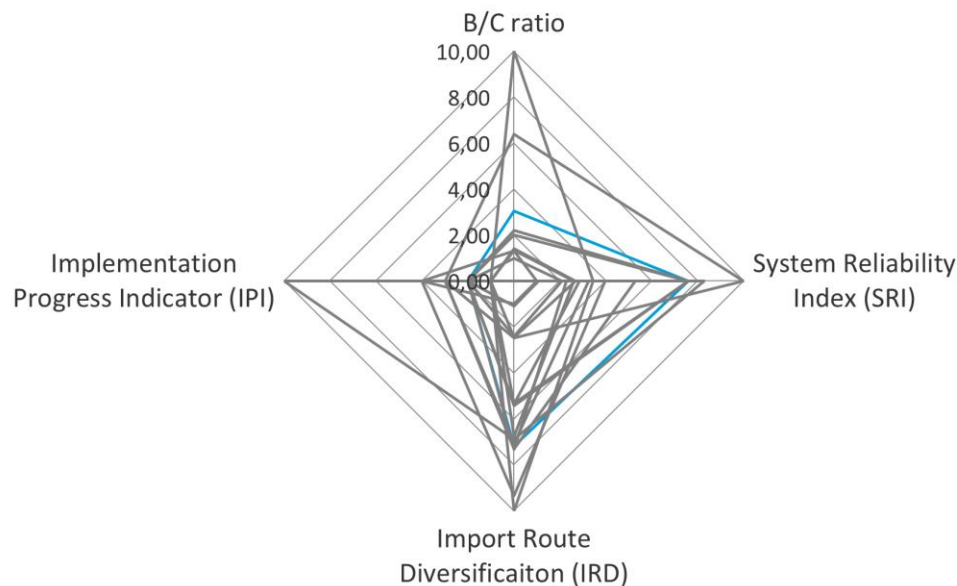
	ref	pl10	mn10	enc25	enc50	nhr	hlng	llng	toot	lter
Region										
EnC										
Hosting										

Project code (Country A-B)	Total cost (M€)	Commission date	Capacity from A to B (GWh/day)	Capacity from B to A (GWh/day)
GAS_01 (HR-BH)	94	2023	44	44



Gas_01: Interconnection Pipeline - Slobodnica-Brod-Zenica

	System Reliability Index (SRI)	Import Route Diversification Index (IRD)	Benefit / Cost Ratio (B/C)	Implementation progress Indicator (IPI)	Total Score	Ranking
Score	7.59	7.20	3.04	2.00	4.25	3
Impact (change of indicator)	1.08	0.37	7.17	2.00		



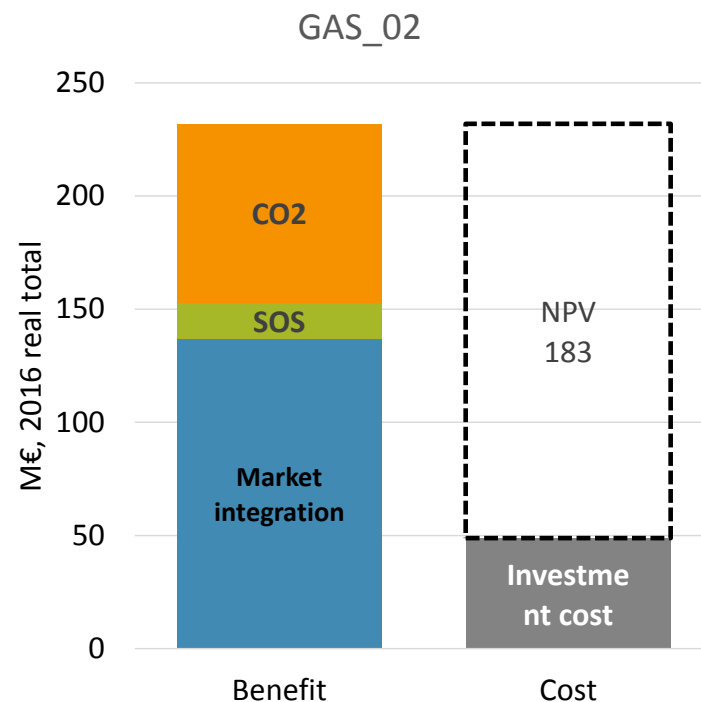
SRI and IRD values shown here represent the impact of a project (i.e. the difference without and with the individual project) in the countries on each end of the interconnection.

Gas_02: Interconnection Pipeline – Licka Jesenica – Trzac-Bosanska Krupa

	Cons.	Prod.	Infra		Total			Inv	NPV	B/C
			OP	AUC	Trader	Wf	CO2			
AL	0	0	0	0	0	0	0	0	0	0.00
BA	227	0	18	0	-45	201	42	33	210	7.36
BG	14	-1	0	1	-10	4	2	0	5	0.00
GE	-2	0	0	0	3	1	0	0	1	0.00
GR	-1	0	-1	0	0	-2	0	0	-2	0.00
HR	-4	2	77	2	2	78	0	16	62	4.91
HU	52	-2	-61	-12	-11	-34	5	0	-29	0.00
IT	29	-2	-1	0	-20	6	3	0	8	0.00
KO*	0	0	0	0	0	0	0	0	0	0.00
MD	3	0	0	0	0	3	0	0	4	0.00
ME	0	0	0	0	0	0	0	0	0	0.00
MK	2	0	0	1	0	3	0	0	3	0.00
PL	28	-17	-1	-1	-12	-4	4	0	0	0.00
RO	67	-83	0	0	-3	-21	6	0	-14	0.00
RS	16	-1	-79	0	-9	-73	2	0	-71	0.00
SK	7	0	-5	0	-7	-5	1	0	-4	0.00
UA	94	-96	0	-1	0	-4	14	0	11	0.00
Region	532	-201	-54	-11	-113	153	79	49	183	4.75
EnC	340	-97	-61	0	-51	131	60	33	157	5.77
Hosting	223	2	95	2	-42	279	42	49	272	6.57

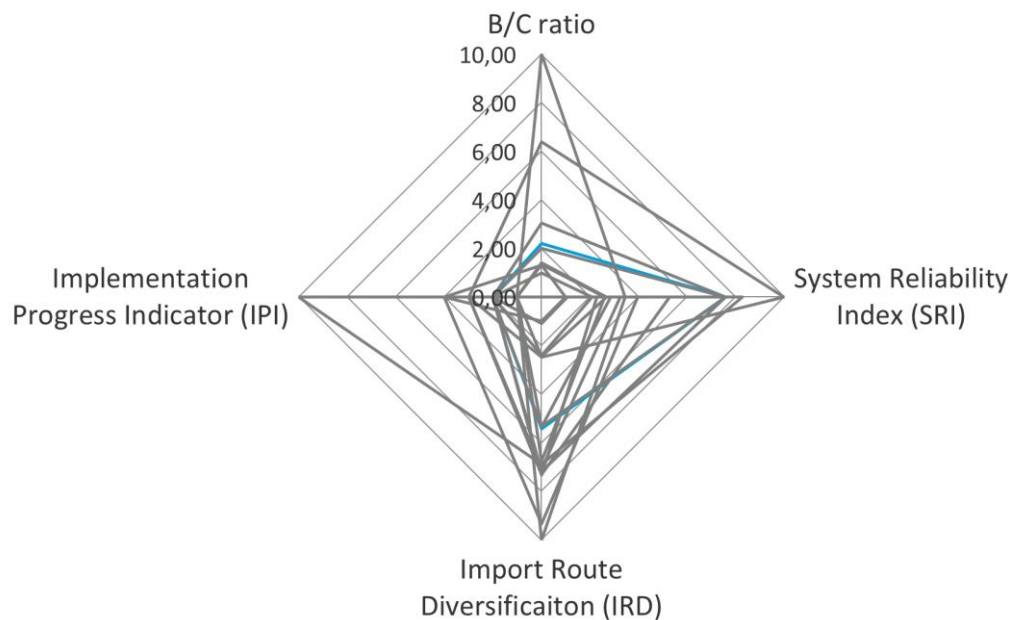
	ref	pl10	mn10	enc25	enc50	nhr	hlng	llng	toot	lter
Region										
EnC										
Hosting										

Project code (Country A-B)	Total cost (M€)	Commission date	Capacity from A to B (GWh/day)	Capacity from B to A (GWh/day)
GAS_02 (HR-BH)	49	2026	0	73



Gas_02: Interconnection Pipeline – Licka Jesenica – Trzac-Bosanska Krupa

	System Reliability Index (SRI)	Import Route Diversification Index (IRD)	Benefit / Cost Ratio (B/C)	Implementation progress Indicator (IPI)	Total Score	Ranking
Score	7.59	5.42	2.21	2.00	3.54	4
Impact (change of indicator)	1.08	0.27	4.75	2.00		



SRI and IRD values shown here represent the impact of a project (i.e. the difference without and with the individual project) in the countries on each end of the interconnection.

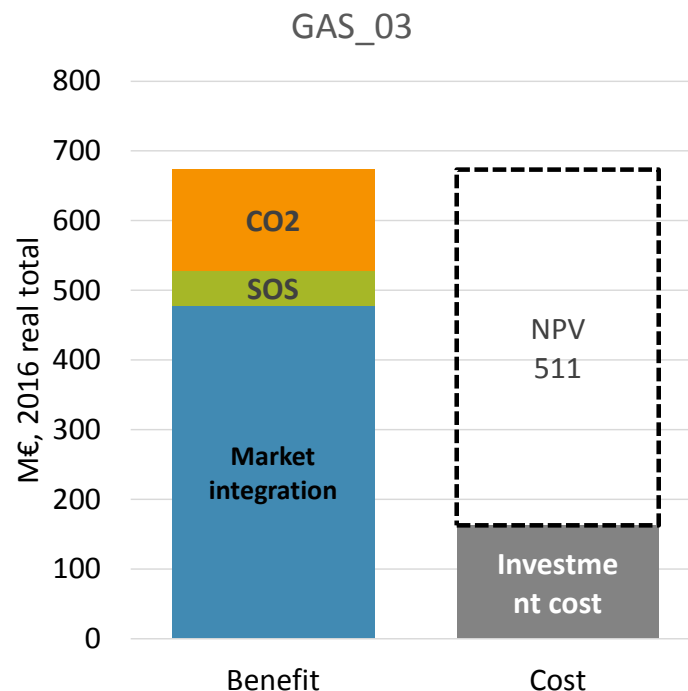
Gas_03: Interconnection Pipeline - Zagvozd-Posusje-Travnik-branch to Mostar

			Infra		Total		CO2	Inv	NPV	B/C
	Cons.	Prod.	Infra OP	AUC	Trader Wf	Wf				
AL	0	0	0	0	0	0	0	0	0	0.00
BA	572	0	28	0	-50	549	118	100	567	6.67
BG	13	-1	0	1	-9	3	1	0	4	0.00
GE	-1	0	-1	0	2	0	0	0	0	0.00
GR	-1	0	-1	0	0	-2	0	0	-2	0.00
HR	-5	3	110	2	2	112	0	63	49	1.78
HU	46	-2	-60	-11	-10	-37	4	0	-33	0.00
IT	21	-1	1	0	-14	6	1	0	7	0.00
KO*	0	0	0	0	0	0	0	0	0	0.00
MD	3	0	0	0	0	3	0	0	3	0.00
ME	0	0	0	0	0	0	0	0	0	0.00
MK	1	0	0	1	0	2	0	0	3	0.00
PL	27	-17	-1	-1	-12	-3	4	0	1	0.00
RO	60	-75	-3	0	-3	-21	5	0	-16	0.00
RS	15	-1	-77	0	-9	-71	2	0	-69	0.00
SK	4	0	-7	0	-4	-7	0	0	-7	0.00
UA	74	-75	-3	-1	0	-5	11	0	5	0.00
Region	828	-169	-15	-10	-106	527	146	163	511	4.14
EnC	663	-76	-52	0	-57	478	131	100	508	6.08
Hosting	566	3	137	2	-48	661	117	163	616	4.78

	ref	pl10	mn10	enc25	enc50	hnr	hlng	llng	toot	lter
Region										
EnC										
Hosting										

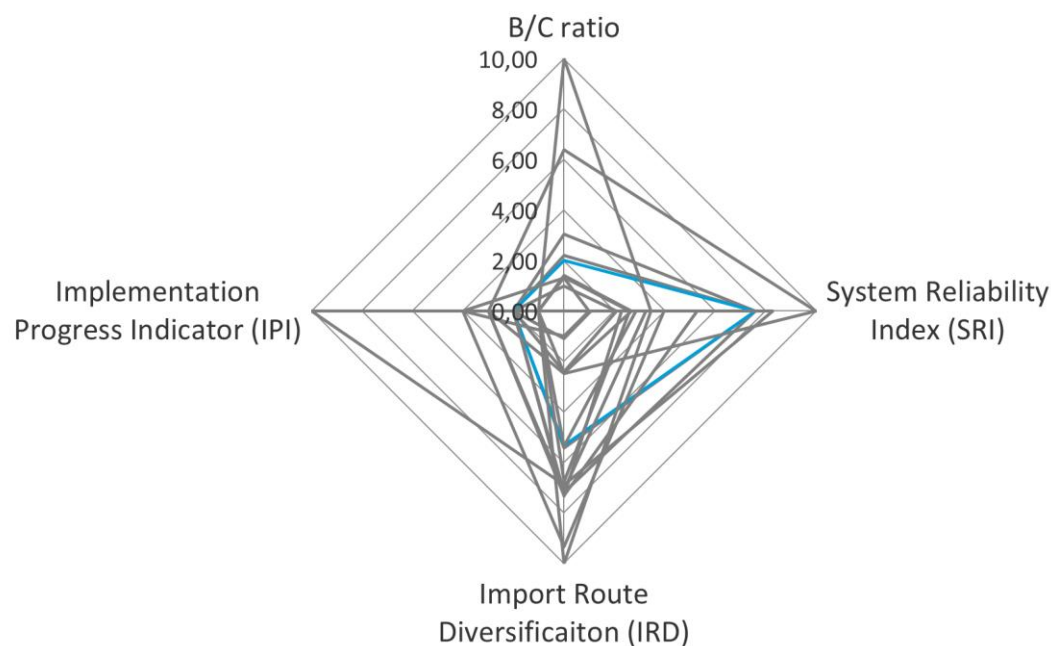
Project code (Country A-B)	Total cost (M€)	Commission date	Capacity from A to B (GWh/day)	Capacity from B to A (GWh/day)
GAS_03 (HR-BH)	116	2023	38	75

Project specific demand is assumed, benefits might be overestimated



Gas_03: Interconnection Pipeline - Zagvozd-Posusje-Travnik-branch to Mostar

	System Reliability Index (SRI)	Import Route Diversification Index (IRD)	Benefit / Cost Ratio (B/C)	Implementation progress Indicator (IPI)	Total Score	Ranking
Score	7.59	5.33	2.00	2.00	3.41	5
Impact (change of indicator)	1.08	0.27	4.14	2.00		



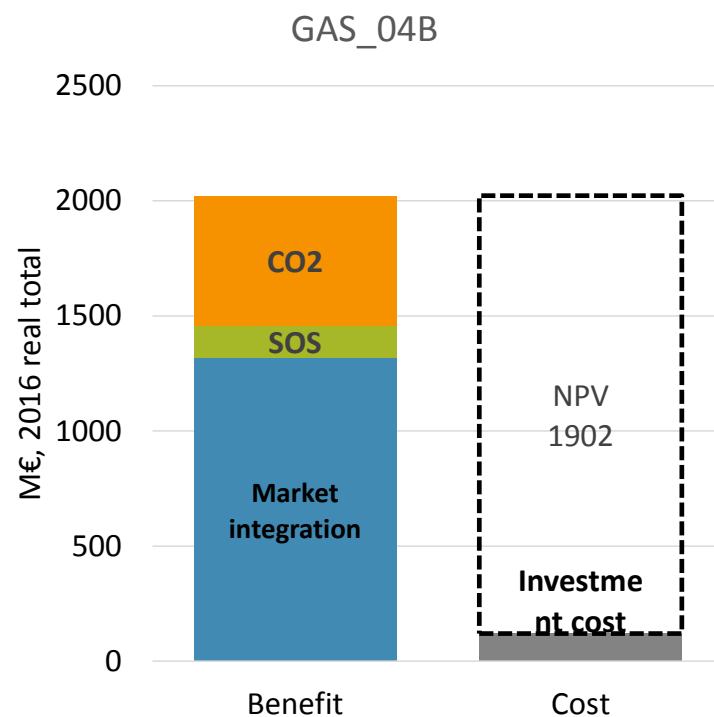
SRI and IRD values shown here represent the impact of a project (i.e. the difference without and with the individual project) in the countries on each end of the interconnection.

Gas_04B: Gas Interconnection Greece - FYROM - IGF

	Cons.	Prod.	Infra		Total		CO2	Inv	NPV	B/C
			OP	AUC	Trader	Wf				
AL	-1	0	0	0	0	-1	0	0	-1	0.00
BA	6	0	0	0	-3	3	1	0	4	0.00
BG	89	-8	-104	-669	-66	-757	8	0	-749	0.00
GE	-3	0	1	0	5	3	0	0	3	0.00
GR	-12	0	203	49	6	246	-1	50	196	4.95
HR	1	0	-1	0	0	0	0	0	0	0.00
HU	164	-9	49	-38	-32	135	11	0	145	0.00
IT	85	-7	0	0	-62	16	5	0	21	0.00
KO*	0	0	0	0	0	0	0	0	0	0.00
MD	6	0	0	0	0	6	1	0	6	0.00
ME	0	0	0	0	0	0	0	0	0	0.00
MK	2576	0	5	-632	-30	1919	484	70	2333	34.32
PL	59	-32	-4	-1	-29	-7	7	0	-1	0.00
RO	342	-402	-3	0	-14	-77	24	0	-53	0.00
RS	51	-4	2	0	-34	15	6	0	21	0.00
SK	19	0	-28	0	-23	-33	1	0	-32	0.00
UA	163	-158	-12	-2	0	-9	19	0	10	0.00
Region	3546	-621	109	-1293	-283	1459	563	120	1902	16.92
EnC	2798	-162	-3	-634	-63	1937	509	70	2375	34.94
Hosting	2564	0	208	-583	-24	2165	483	120	2528	22.16

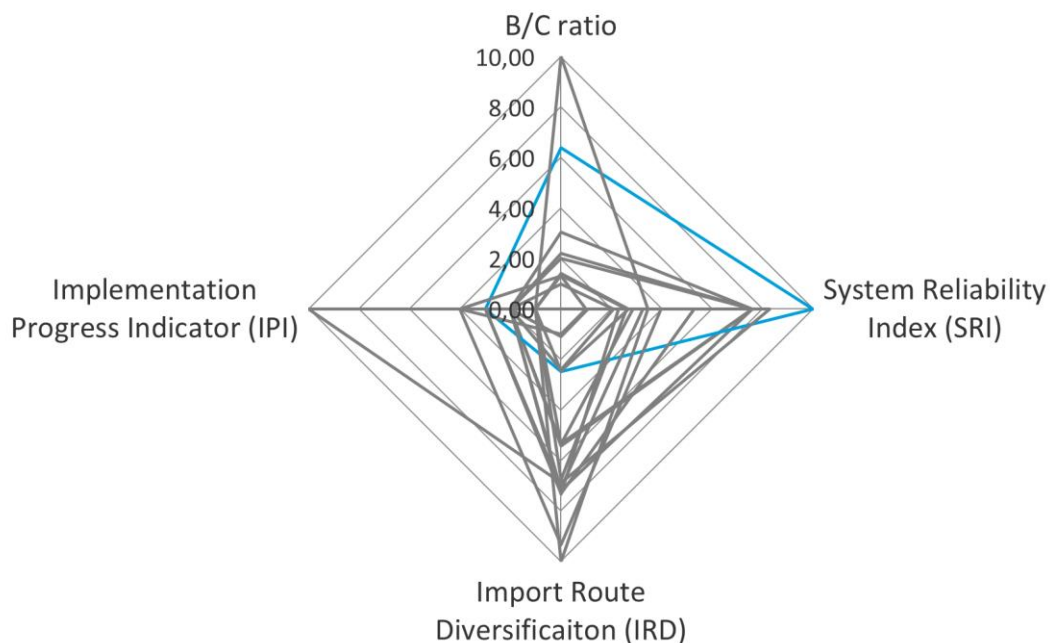
Project code (Country A-B)	Total cost (M€)	Commission date	Capacity from A to B (GWh/day)	Capacity from B to A (GWh/day)
GAS_04B (GR-FYROM)	120	2020	76	76

	ref	pl10	mn10	enc25	enc50	nh	hng	lng	toot	lter
Region										
EnC										
Hosting										



Gas_04B: Gas Interconnection Greece - FYROM - IGF

	System Reliability Index (SRI)	Import Route Diversification Index (IRD)	Benefit / Cost Ratio (B/C)	Implementation progress Indicator (IPI)	Total Score	Ranking
Score	10.00	2.48	6.38	3.00	6.23	2
Impact (change of indicator)	1.45	0.11	16.92	3.00		



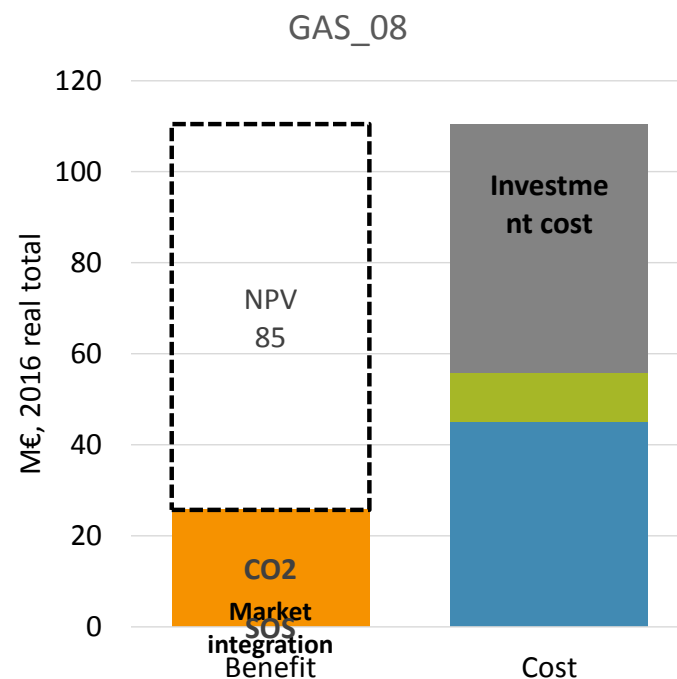
SRI and IRD values shown here represent the impact of a project (i.e. the difference without and with the individual project) in the countries on each end of the interconnection.

Gas_08: Gas Interconnector Romania - Serbia

	Cons.	Prod.	Infra	OP	AUC	Trader	Wf	CO2	Inv	NPV	B/C
AL	0	0	0	0	0	0	0	0	0	0	0.00
BA	78	0	0	0	-44	35	6	0	40	0.00	
BG	-140	10	0	-12	127	-14	-8	0	-22	0.00	
GE	0	0	1	0	0	1	0	0	1	0.00	
GR	0	0	8	0	0	8	0	0	8	0.00	
HR	-1	1	1	0	0	1	0	0	1	0.00	
HU	-20	2	-423	1	4	-435	-1	0	-436	0.00	
IT	-15	1	1	0	12	0	0	0	0	0.00	
KO*	0	0	0	0	0	0	0	0	0	0.00	
MD	0	0	0	0	0	0	0	0	0	0.00	
ME	0	0	0	0	0	0	0	0	0	0.00	
MK	-11	0	-1	-12	4	-21	-1	0	-21	0.00	
PL	2	-3	2	0	1	2	1	0	2	0.00	
RO	-650	705	-77	129	12	119	-28	45	46	2.01	
RS	712	-80	12	132	-518	259	55	10	305	33.08	
SK	-7	0	14	0	10	18	0	0	17	0.00	
UA	2	-7	-22	0	0	-27	3	0	-24	0.00	
Region	-51	630	-483	239	-391	-56	26	55	-85	-0.56	
EnC	781	-87	-9	120	-558	247	63	10	300	32.61	
Hosting	63	625	-65	261	-507	378	27	55	350	7.43	

Project code (Country A-B)	Total cost (M€)	Commission date	Capacity from A to B (GWh/day)	Capacity from B to A (GWh/day)
GAS_08 (RS-RO)	9.5	2019	35	35

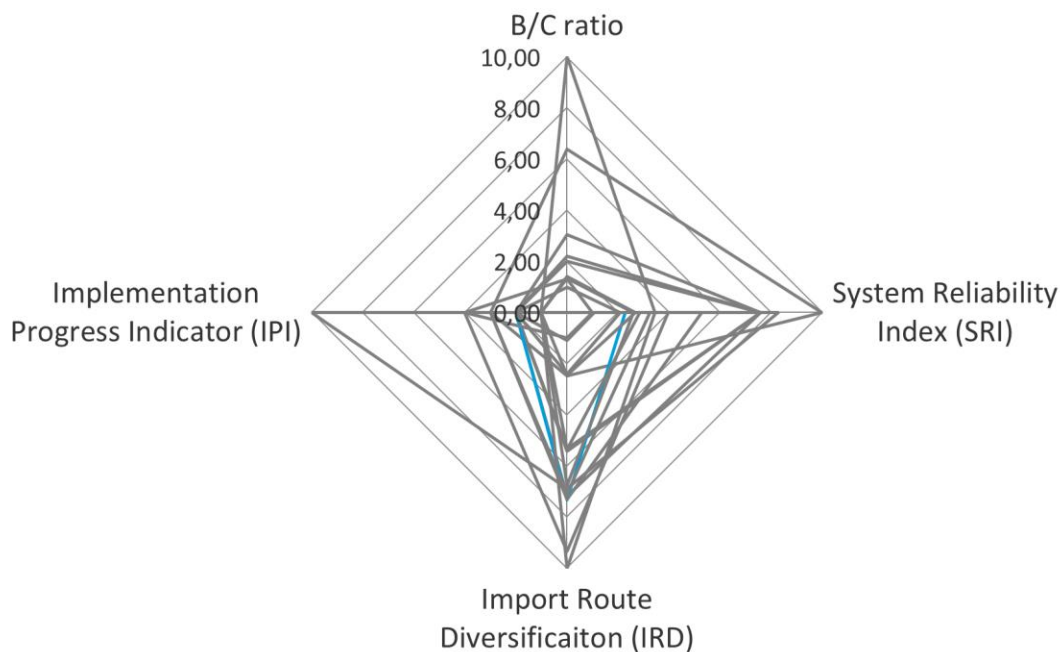
The project is positive on an EnC level, but HU tariff income is reduced by the alternative route



	ref	pl10	mn10	enc25	enc50	nh	hng	lng	toot	lter
Region										
EnC										
Hosting										

Gas_08: Gas Interconnector Romania - Serbia

	System Reliability Index (SRI)	Import Route Diversification Index (IRD)	Benefit / Cost Ratio (B/C)	Implementation progress Indicator (IPI)	Total Score	Ranking
Score	2.29	7.33	0.00	2.00	1.49	11
Impact (change of indicator)	0.26	0.37	-0.56	2.00		



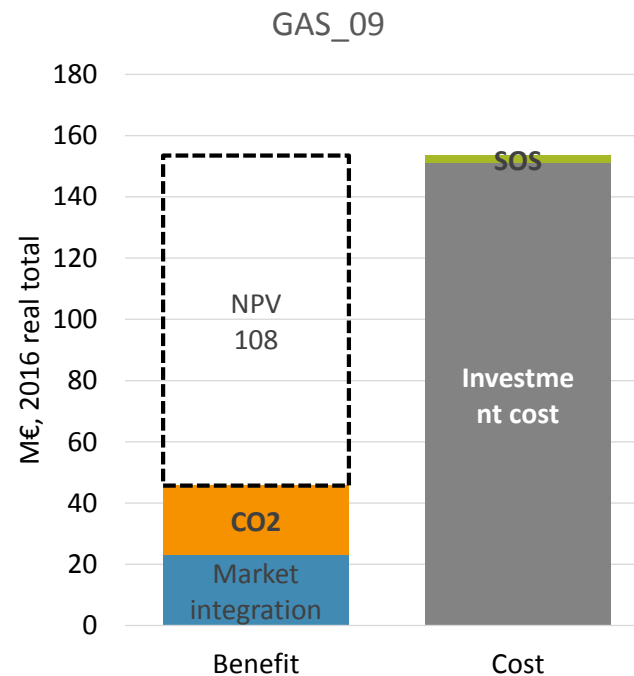
SRI and IRD values shown here represent the impact of a project (i.e. the difference without and with the individual project) in the countries on each end of the interconnection.

Gas_09: Bulgaria - Serbia Interconnector

	Cons.	Prod.	Infra		Total			Inv	NPV	B/C
			OP	AUC	Trader	Wf	CO2			
AL	0	0	0	0	0	0	0	0	0	0.00
BA	49	0	0	0	-28	21	4	0	25	0.00
BG	-71	6	116	81	56	188	-7	66	116	2.78
GE	0	0	1	0	0	1	0	0	1	0.00
GR	0	0	30	1	0	30	0	0	30	0.00
HR	-1	0	1	0	0	1	0	0	1	0.00
HU	-3	1	-399	-2	2	-401	0	0	-400	0.00
IT	-2	0	0	0	2	0	0	0	0	0.00
KO*	0	0	0	0	0	0	0	0	0	0.00
MD	2	0	0	0	0	2	0	0	2	0.00
ME	0	0	0	0	0	0	0	0	0	0.00
MK	-5	0	0	-8	2	-11	-1	0	-12	0.00
PL	19	-13	0	0	-8	-1	3	0	2	0.00
RO	-289	324	1	-1	6	41	-20	0	21	0.00
RS	437	-49	10	89	-322	165	36	86	116	2.35
SK	-3	0	-8	0	5	-6	0	0	-6	0.00
UA	45	-48	-5	0	0	-9	7	0	-2	0.00
Region	176	223	-254	159	-283	21	23	151	-108	0.29
EnC	527	-97	6	80	-347	169	46	86	130	2.52
Hosting	366	-43	127	170	-265	354	29	151	232	2.54

Project code (Country A-B)	Total cost (M€)	Commission date	Capacity from A to B (GWh/day)	Capacity from B to A (GWh/day)
GAS_09 (BG-RS)	119	2022	39	39

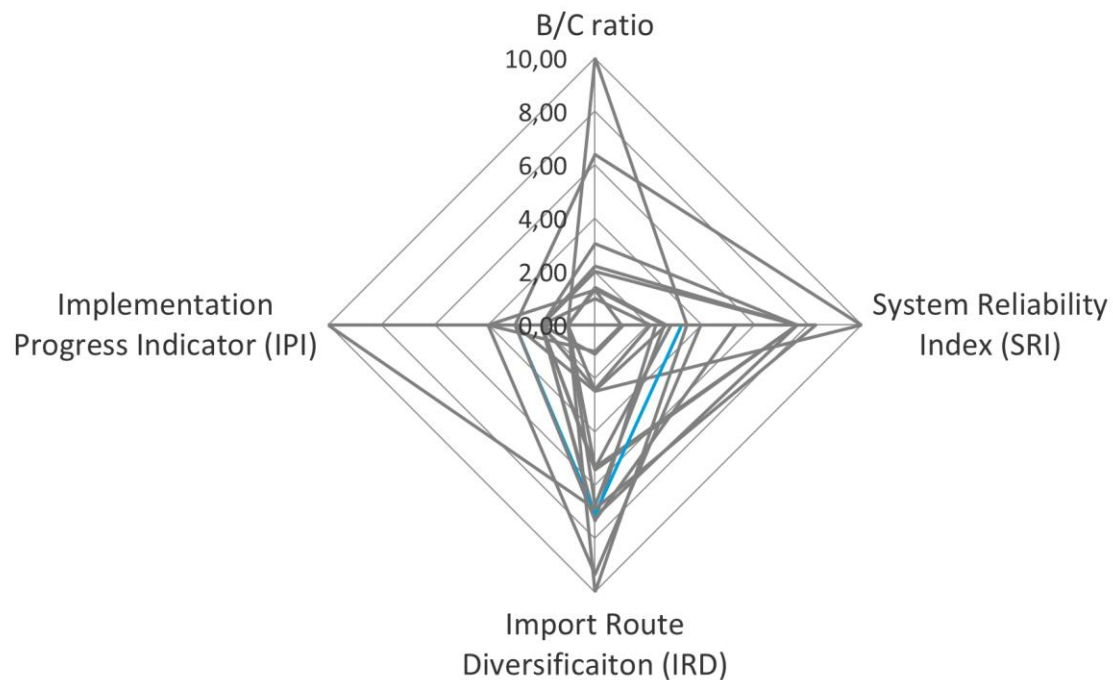
The project is positive on an EnC level, but HU tariff income is reduced by the alternative route



	ref	pl10	mn10	enc25	enc50	nhr	hlng	llng	toot	lter
Region	Red	Red	Red	Red	Red	Red	Green	Red	Green	Red
EnC	Green	Green	Green	Green	Red	Green	Green	Green	Green	Green
Hosting	Green	Green	Green	Green	Red	Green	Green	Green	Green	Green

Gas_09: Bulgaria - Serbia Interconnector

	System Reliability Index (SRI)	Import Route Diversification Index (IRD)	Benefit / Cost Ratio (B/C)	Implementation progress Indicator (IPI)	Total Score	Ranking
Score	3.25	7.10	0	3.00	1.74	9
Impact (change of indicator)	0.41	0.36	0.29	3.00		

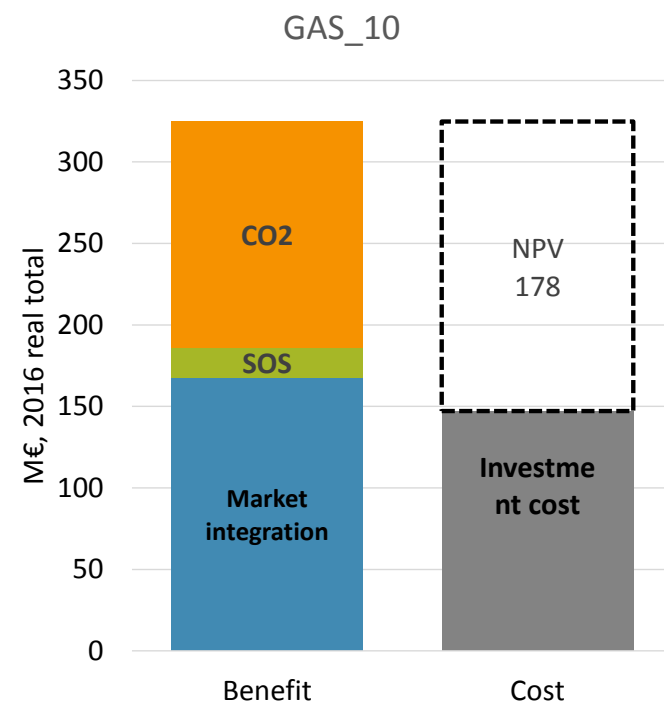


SRI and IRD values shown here represent the impact of a project (i.e. the difference without and with the individual project) in the countries on each end of the interconnection.

Gas_10: Gas Interconnector Croatia - Serbia

	Cons.	Prod.	Infra		Total		Inv	NPV	B/C	
			OP	AUC	Trader	Wf				CO2
AL	0	0	0	0	0	0	0	0	0	0.00
BA	13	0	0	0	-5	8	2	0	10	0.00
BG	47	-4	0	4	-33	14	6	0	21	0.00
GE	-2	0	0	0	4	2	0	0	2	0.00
GR	-3	0	-5	0	1	-7	0	0	-7	0.00
HR	-7	3	231	67	1	296	-1	87	208	3.39
HU	164	-2	-229	-38	-34	-139	17	0	-123	0.00
IT	99	-6	-9	-1	-70	14	8	0	22	0.00
KO*	0	0	0	0	0	0	0	0	0	0.00
MD	13	0	0	0	-1	13	1	0	15	0.00
ME	0	0	0	0	0	0	0	0	0	0.00
MK	5	0	0	4	-1	8	1	0	9	0.00
PL	69	-41	-6	-5	-30	-14	9	0	-5	0.00
RO	213	-273	3	-1	-8	-66	23	0	-43	0.00
RS	90	-2	-5	59	-52	89	15	60	44	1.73
SK	27	-1	-25	0	-26	-25	3	0	-22	0.00
UA	374	-383	5	-5	0	-8	55	0	47	0.00
Region	1103	-710	-38	84	-254	186	139	147	178	2.21
EnC	492	-385	2	58	-54	113	74	60	126	3.10
Hosting	83	1	226	126	-51	386	14	147	252	2.71

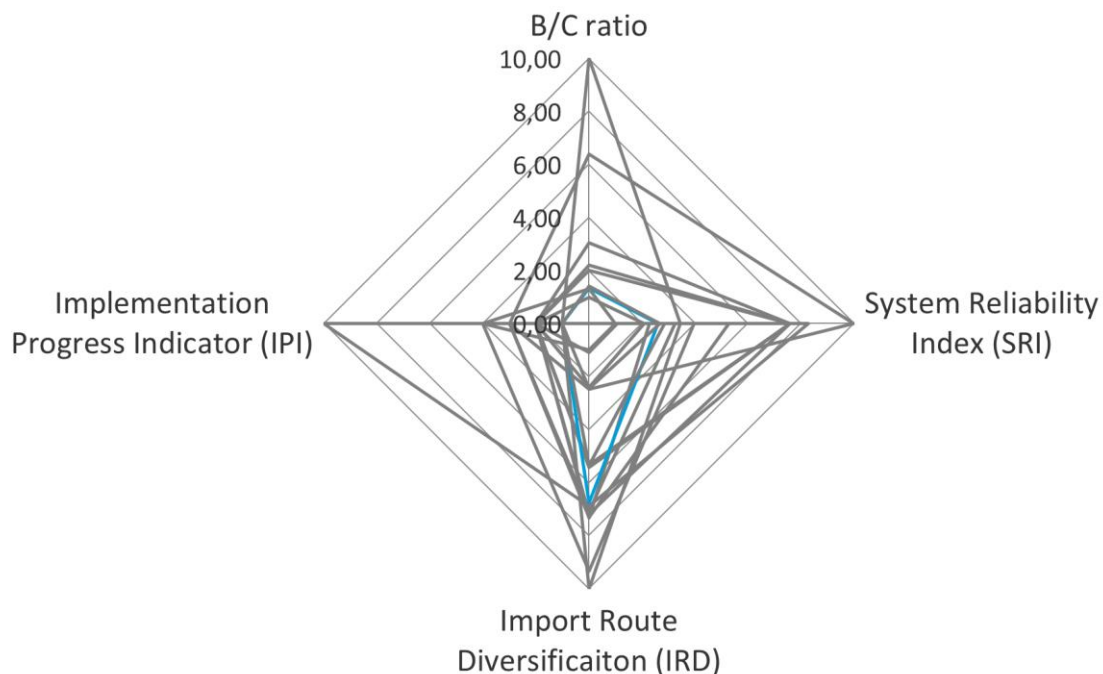
Project code (Country A-B)	Total cost (M€)	Commission date	Capacity from A to B (GWh/day)	Capacity from B to A (GWh/day)
GAS_10 (RS-HR)	147	2026	33	33



	ref	pl10	mn10	enc25	enc50	nhr	hlng	llng	toot	lter
Region										
EnC										
Hosting										

Gas_10: Gas Interconnector Croatia - Serbia

	System Reliability Index (SRI)	Import Route Diversification Index (IRD)	Benefit / Cost Ratio (B/C)	Implementation progress Indicator (IPI)	Total Score	Ranking
Score	2.61	6.77	1.34	1.00	2.19	7
Impact (change of indicator)	0.31	0.34	2.21	1.00		



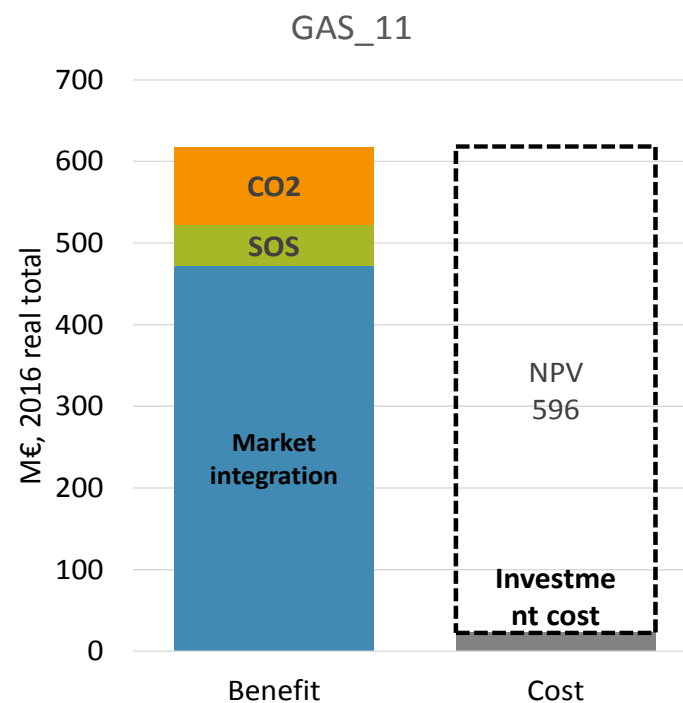
SRI and IRD values shown here represent the impact of a project (i.e. the difference without and with the individual project) in the countries on each end of the interconnection.

Gas_11: Gas Interconnector Serbia - FYROM

	Infra				Total						
	Cons.	Prod.	Infra OP	AUC	Trader	Wf	CO2	Inv	NPV	B/C	
AL	0	0	0	0	0	0	0	0	0	0	0.00
BA	-6	0	0	0	4	-2	0	0	-2	0.00	
BG	-18	1	2	-204	15	-202	-1	0	-203	0.00	
GE	0	0	1	0	0	1	0	0	1	0.00	
GR	0	0	1	0	0	1	0	0	1	0.00	
HR	-1	0	1	0	0	1	0	0	0	0.00	
HU	-30	1	49	7	6	33	-2	0	30	0.00	
IT	-21	2	1	0	16	-2	-1	0	-3	0.00	
KO*	0	0	0	0	0	0	0	0	0	0.00	
MD	-2	0	0	0	0	-2	0	0	-2	0.00	
ME	0	0	0	0	0	0	0	0	0	0.00	
MK	482	0	32	-42	-6	467	120	14	573	41.89	
PL	-26	15	1	1	12	3	-3	0	0	0.00	
RO	-84	95	5	0	2	18	-5	0	14	0.00	
RS	-59	12	26	162	47	187	-3	9	175	21.60	
SK	-8	0	11	0	10	13	0	0	13	0.00	
UA	-64	62	9	1	1	7	-8	0	0	0.00	
Region	164	189	139	-75	106	523	95	23	596	27.48	
EnC	350	74	68	121	45	658	108	23	744	34.06	
Hosting	423	12	58	121	41	654	116	23	748	34.23	

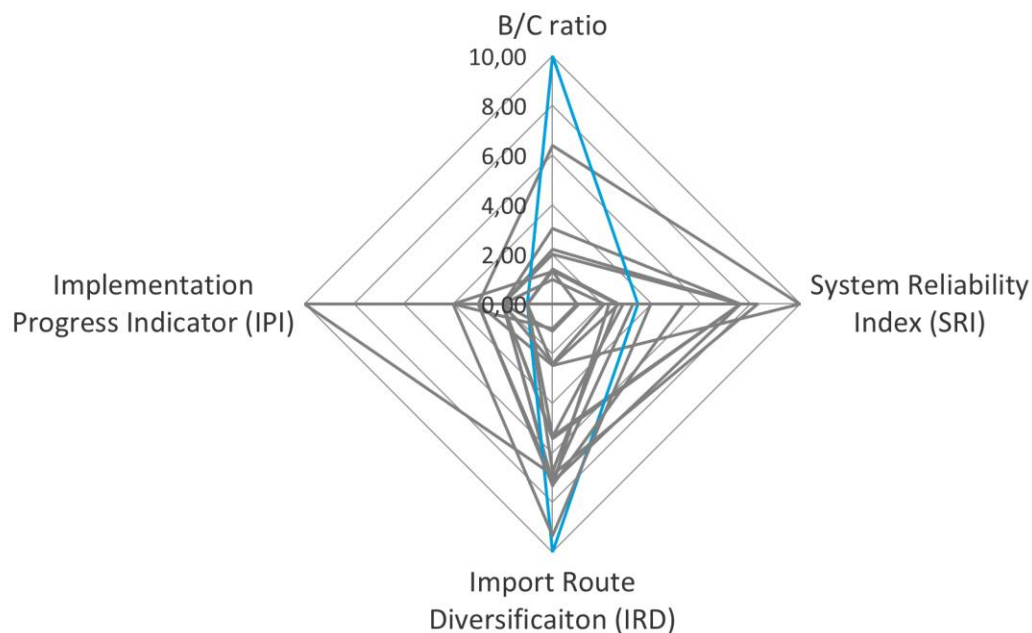
	ref	pl10	mn10	enc25	enc50	nhr	hlng	llng	toot	lter
Region										
EnC										
Hosting										

Project code (Country A-B)	Total cost (M€)	Commission date	Capacity from A to B (GWh/day)	Capacity from B to A (GWh/day)
GAS_11 (RS-FYROM)	8.5	2012	10	10



Gas_11: Gas Interconnector Serbia - FYROM

	System Reliability Index (SRI)	Import Route Diversification Index (IRD)	Benefit / Cost Ratio (B/C)	Implementation progress Indicator (IPI)	Total Score	Ranking
Score	3.45	10.00	10.00	1.00	7.92	1
Impact (change of indicator)	0.44	0.52	27.48	1.00		



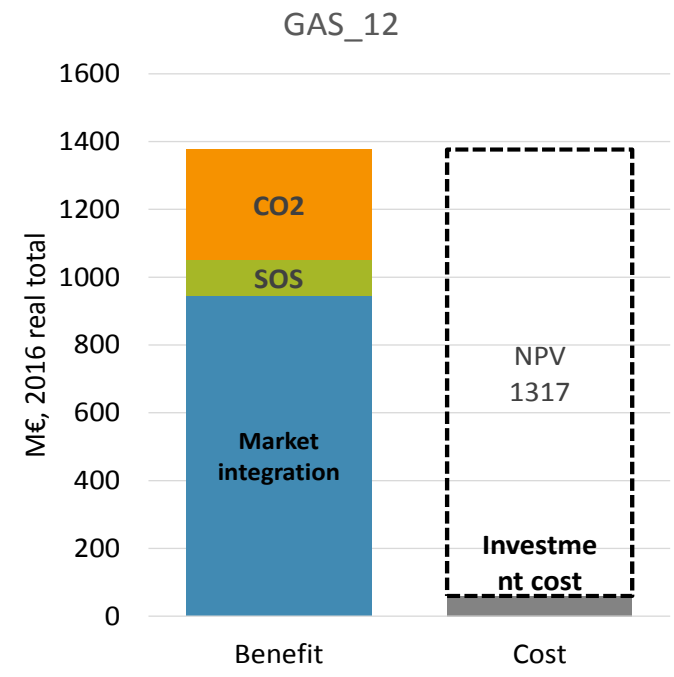
SRI and IRD values shown here represent the impact of a project (i.e. the difference without and with the individual project) in the countries on each end of the interconnection.

Gas_12: Gas Interconnector Serbia - Montenegro (Nis - Prishtina (Kosovo*) section)

	Cons.	Prod.	Infra OP	AUC	Trader	Total Wf	CO2	Inv	NPV	B/C
AL	0	0	0	0	0	0	0	0	0	0.00
BA	-3	0	0	0	1	-2	0	0	-2	0.00
BG	-20	2	-2	-2	14	-7	-2	0	-10	0.00
GE	0	0	-2	0	0	-2	0	0	-2	0.00
GR	0	0	2	0	0	2	0	0	2	0.00
HR	0	0	1	0	0	1	0	0	1	0.00
HU	-71	3	101	17	15	64	-6	0	58	0.00
IT	-41	2	3	1	29	-6	-3	0	-9	0.00
KO*	903	0	25	0	0	928	380	0	1308	0.00
MD	-5	0	0	0	0	-5	-1	0	-5	0.00
ME	0	0	0	0	0	0	0	0	0	0.00
MK	-2	0	0	-2	0	-4	0	0	-4	0.00
PL	-41	25	5	1	18	8	-6	0	3	0.00
RO	-94	118	-9	1	5	20	-9	0	11	0.00
RS	-25	1	54	0	15	46	-3	60	-17	0.71
SK	-13	0	10	0	14	12	-1	0	11	0.00
UA	-139	142	-9	2	0	-5	-21	0	-25	0.00
Region	449	294	180	17	111	1050	326	60	1317	22.94
EnC	729	143	68	0	17	957	354	60	1251	21.86
Hosting	878	1	80	0	15	974	376	60	1290	22.51

Project code (Country A-B)	Total cost (M€)	Commission date	Capacity from A to B (GWh/day)	Capacity from B to A (GWh/day)
GAS_12 (RS-KO*)	160	2016	26	26

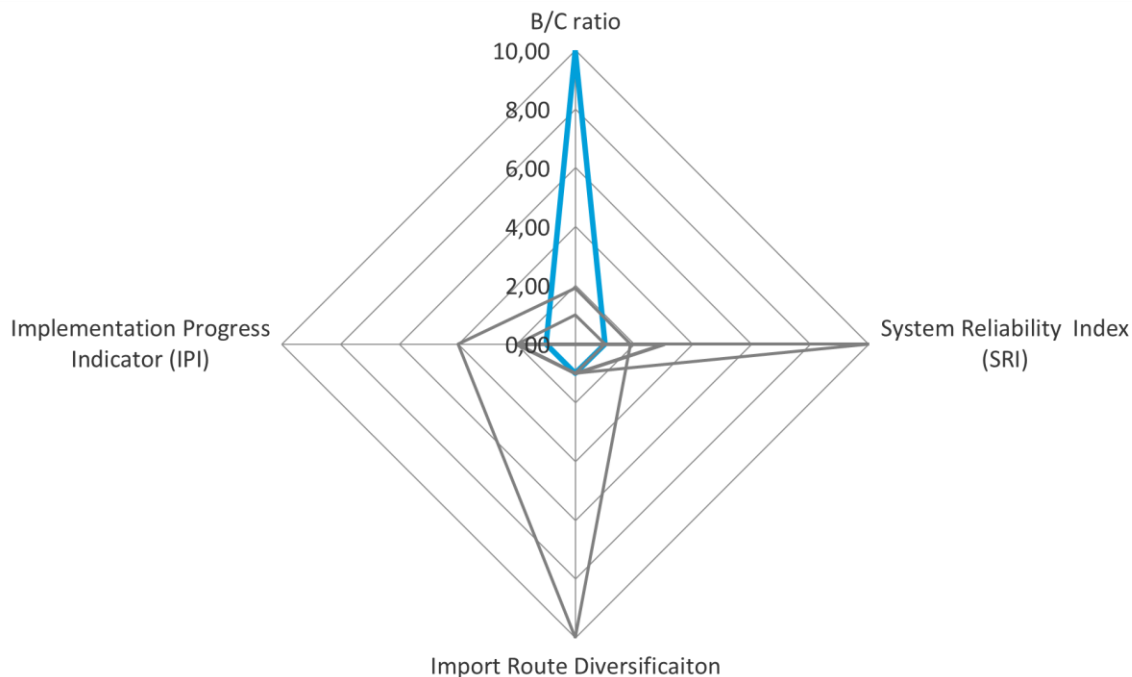
Newly gasified market, can not be compared with the others – consumer benefits are highly overestimated
 Except for Kosovo* most of the EnC CPs would be neg.



	ref	pl10	mn10	enc25	enc50	nhr	hlng	llng	toot	lter
Region									n.a.	
EnC									n.a.	
Hosting									n.a.	

Gas_12: Gas Interconnector Serbia - Montenegro (Nis - Prishtina (Kosovo*) section)

	System Reliability Index (SRI)	Import Route Diversification Index (IRD)	Benefit / Cost Ratio (B/C)	Implementation progress Indicator (IPI)	Total Score	Ranking
Score	1.00	1.00	10.00	1.00	6.40	1
Impact (change of indicator)	0.00	0.00	22.94	1.00		



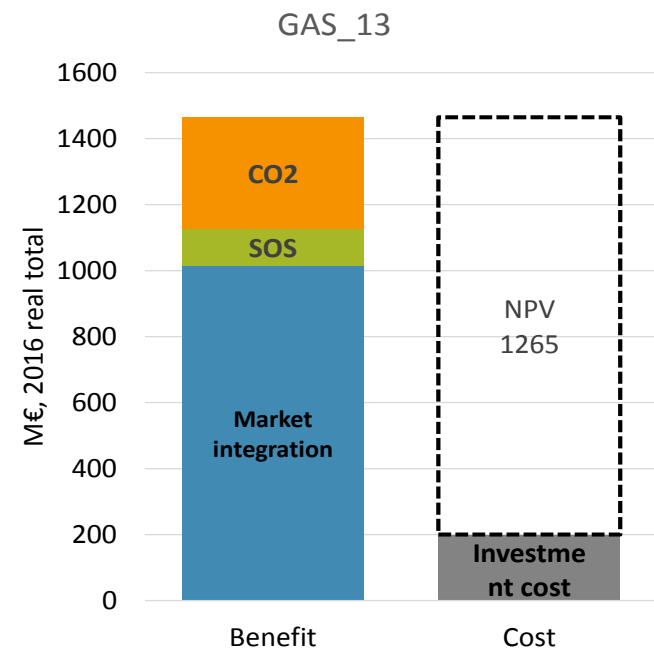
SRI and IRD values shown here represent the impact of a project (i.e. the difference without and with the individual project) in the countries on each end of the interconnection.

Gas_13: Kosovo* Albania Gas Pipeline - ALKOGAP

	Infra			Total			Inv	NPV	B/C	
	Cons.	Prod.	Infra OP AUC	Trader Wf	CO2					
AL	79	0	49	0	0	128	2	100	30	1.30
BA	0	0	0	0	0	0	0	0	0	0.00
BG	0	0	0	0	0	0	0	0	0	0.00
GE	-1	0	0	0	2	1	0	0	1	0.00
GR	-1	0	51	2	0	52	0	0	52	0.00
HR	-1	0	0	0	0	0	0	0	0	0.00
HU	0	0	0	0	0	0	0	0	0	0.00
IT	-2	0	0	0	2	0	0	0	-1	0.00
KO*	916	0	24	0	0	940	336	100	1177	12.77
MD	0	0	0	0	0	0	0	0	0	0.00
ME	0	0	0	0	0	0	0	0	0	0.00
MK	0	0	0	0	0	0	0	0	0	0.00
PL	0	0	0	0	0	0	0	0	0	0.00
RO	0	0	2	0	0	2	0	0	2	0.00
RS	0	0	0	0	0	0	0	0	0	0.00
SK	0	0	0	0	0	0	0	0	0	0.00
UA	0	0	3	0	0	3	0	0	3	0.00
Region	990	1	131	2	4	1127	338	200	1265	7.32
EnC	994	0	77	0	2	1073	338	200	1211	7.05
Hosting	995	0	73	0	0	1069	338	200	1207	7.04

Project code (Country A-B)	Total cost (M€)	Commission date	Capacity from A to B (GWh/day)	Capacity from B to A (GWh/day)
GAS_13 (KO*-AL)	200	2022	53	53

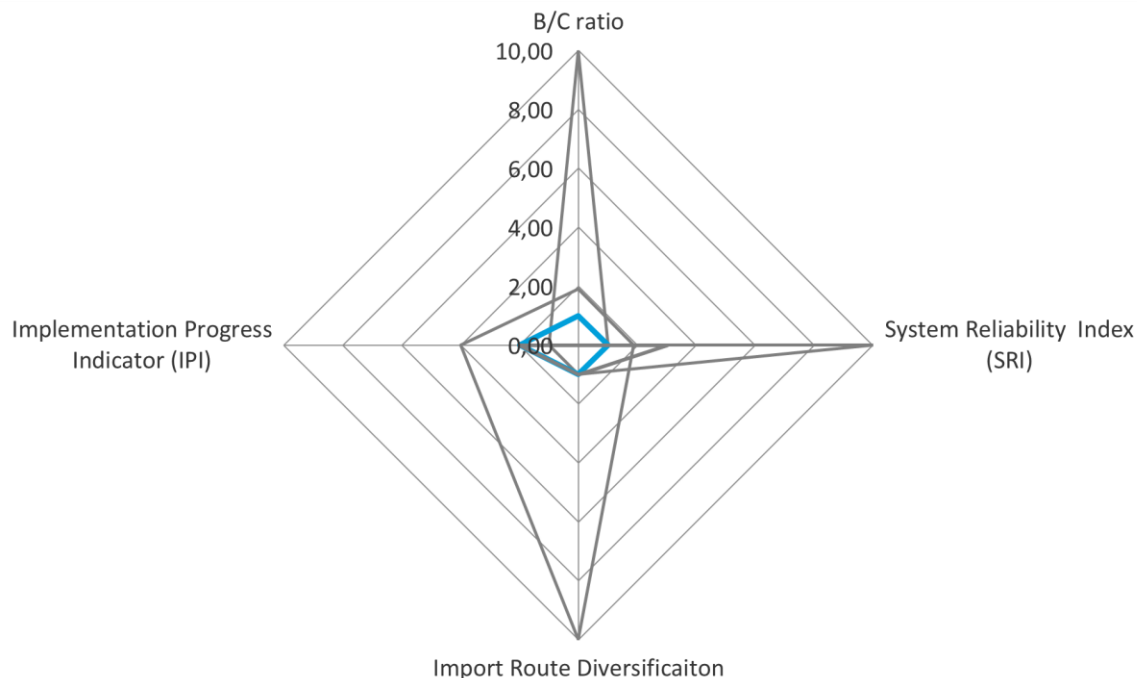
Newly gasified market, can not be compared with the others KO*consumer benefits are highly overestimated



	ref	pl10	mn10	enc25	enc50	nhr	hlng	llng	toot	lter
Region									n.a.	
EnC									n.a.	
Hosting									n.a.	

Gas_13: Kosovo* Albania Gas Pipeline - ALKOGAP

	System Reliability Index (SRI)	Import Route Diversification Index (IRD)	Benefit / Cost Ratio (B/C)	Implementation progress Indicator (IPI)	Total Score	Ranking
Score	1.00	1.00	1.00	2.00	1.10	4
Impact (change of indicator)	0.00	0.00	7.32	2.00		

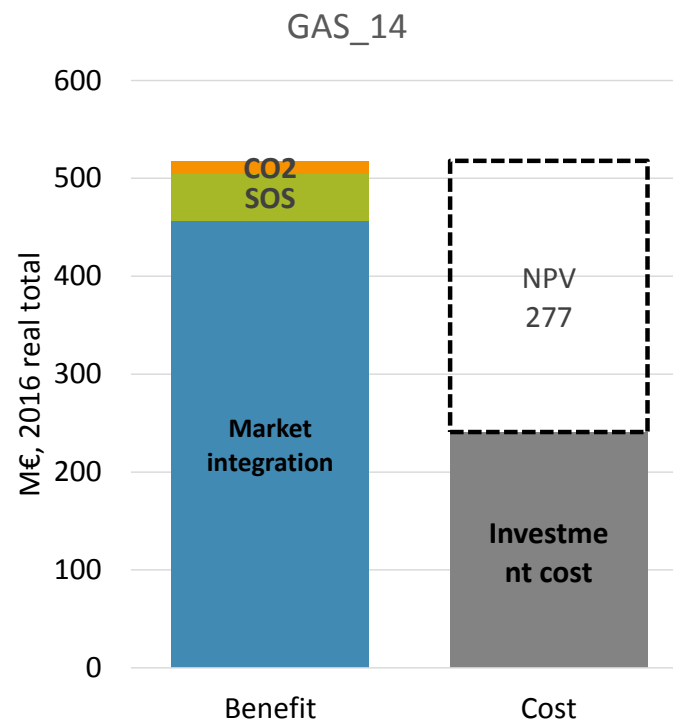


SRI and IRD values shown here represent the impact of a project (i.e. the difference without and with the individual project) in the countries on each end of the interconnection.

Gas_14: Gas Interconnection Poland-Ukraine

	Cons.	Prod.	Infra	Total							
			OP	Trader	Wf	CO2	Inv	NPV	B/C		
			AUC								
AL	0	0	0	0	0	0	0	0	0	0	0.00
BA	4	0	0	0	-2	2	0	0	2	0.00	
BG	21	-2	1	2	-15	6	2	0	8	0.00	
GE	0	0	1	0	0	0	0	0	0	0.00	
GR	0	0	-1	0	0	-1	0	0	-1	0.00	
HR	18	-13	-6	0	0	-1	0	0	0	0.00	
HU	315	-35	2	-53	-85	144	12	0	156	0.00	
IT	107	-11	0	0	-80	17	3	0	20	0.00	
KO*	0	0	0	0	0	0	0	0	0	0.00	
MD	54	0	2	0	-4	52	3	0	54	0.00	
ME	0	0	0	0	0	0	0	0	0	0.00	
MK	2	0	0	2	0	4	0	0	4	0.00	
PL	-1424	726	318	0	854	474	-126	91	258	3.83	
RO	99	-119	-3	-1	-5	-29	7	0	-22	0.00	
RS	31	-4	1	0	-21	8	3	0	11	0.00	
SK	173	-4	-324	-5	-291	-451	5	0	-446	0.00	
UA	1601	-1347	29	-2	-2	279	103	150	232	2.55	
Region	1000	-807	21	-58	349	505	13	241	277	2.15	
EnC	1691	-1350	33	-1	-28	345	109	150	304	3.03	
Hosting	176	-620	348	-2	852	754	-23	241	490	3.03	

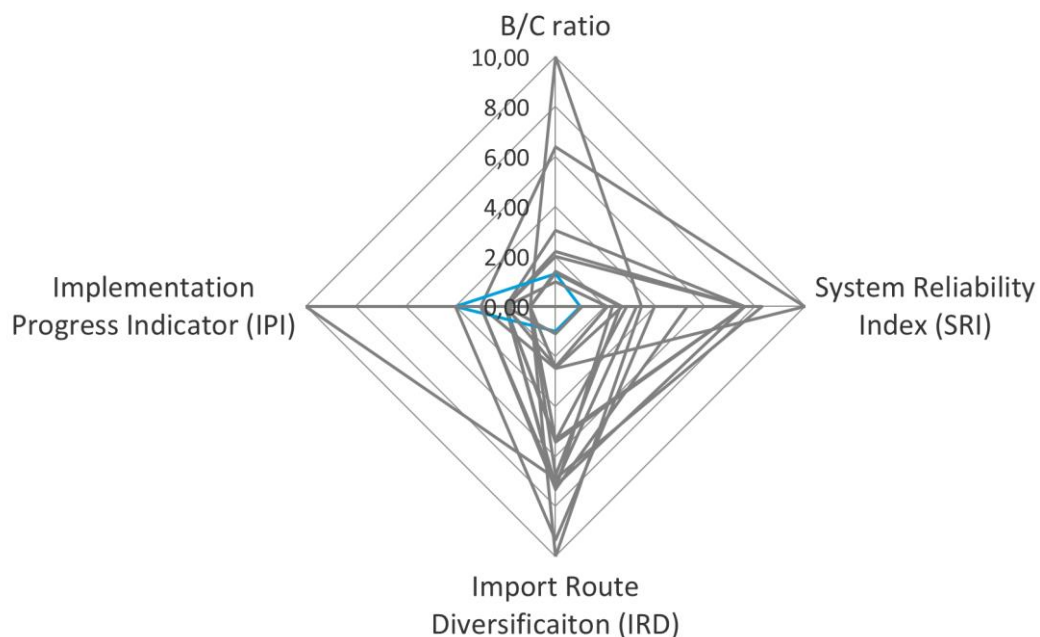
Project code (Country A-B)	Total cost (M€)	Commission date	Capacity from A to B (GWh/day)	Capacity from B to A (GWh/day)
GAS_14 (PL- UA)	241	2020	153	2015



	ref	pl10	mn10	enc25	enc50	nh	hng	lng	toot	lter
Region										
EnC										
Hosting										

Gas_14: Gas Interconnection Poland-Ukraine

	System Reliability Index (SRI)	Import Route Diversification Index (IRD)	Benefit / Cost Ratio (B/C)	Implementation progress Indicator (IPI)	Total Score	Ranking
Score	1.00	1.00	1.32	4.00	1.49	12
Impact (change of indicator)	0.07	0.03	2.15	4.00		

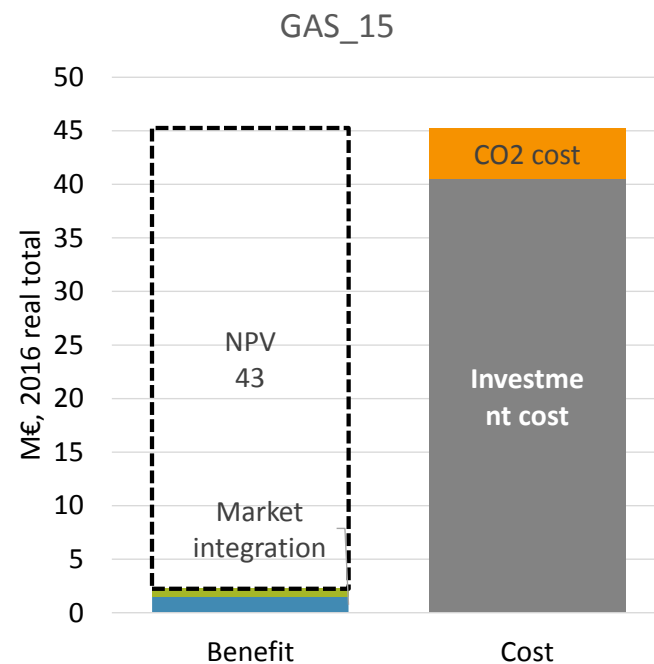


SRI and IRD values shown here represent the impact of a project (i.e. the difference without and with the individual project) in the countries on each end of the interconnection.

Gas_15: Reverse Flow Firm Capacity HU-UA

	Cons.	Prod.	Infra		Total		CO2	Inv	NPV	B/C
			OP	AUC	Trader	Wf				
AL	0	0	0	0	0	0	0	0	0	0.00
BA	-1	0	0	0	1	0	0	0	0	0.00
BG	-8	1	1	-1	6	-1	-1	0	-2	0.00
GE	0	0	1	0	1	1	0	0	1	0.00
GR	0	0	0	0	0	0	0	0	0	0.00
HR	0	0	0	0	0	0	0	0	0	0.00
HU	-26	2	2	8	5	-8	-2	41	-50	-0.25
IT	0	0	0	0	0	0	0	0	0	0.00
KO*	0	0	0	0	0	0	0	0	0	0.00
MD	0	0	0	0	0	0	0	0	0	0.00
ME	0	0	0	0	0	0	0	0	0	0.00
MK	-1	0	0	-1	0	-1	0	0	-2	0.00
PL	5	-2	0	0	-3	-1	0	0	0	0.00
RO	-37	45	3	0	3	14	-2	0	12	0.00
RS	-9	1	0	0	6	-2	-1	0	-3	0.00
SK	1	0	-1	0	-1	-1	0	0	-1	0.00
UA	6	-6	2	0	0	3	1	0	3	0.00
Region	-69	40	7	7	18	2	-5	41	-43	-0.06
EnC	-4	-5	2	-1	8	0	-1	0	-1	0.00
Hosting	-20	-4	5	8	5	-6	-1	41	-47	-0.17

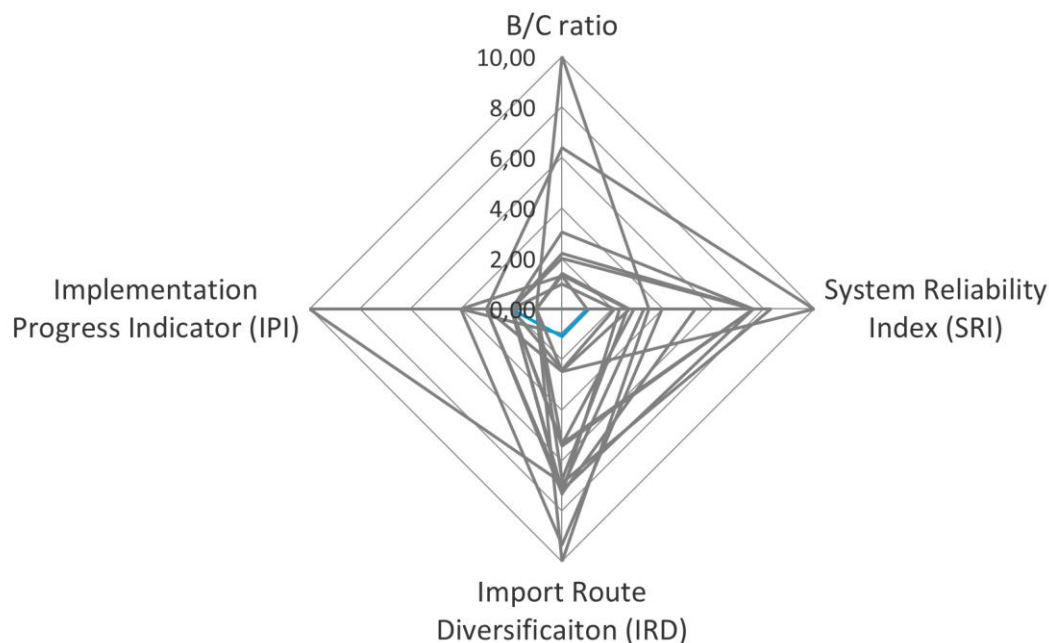
Project code (Country A-B)	Total cost (M€)	Commission date	Capacity from A to B (GWh/day)	Capacity from B to A (GWh/day)
GAS_15 (HU-UA)	40.5	2023	180	0 (existing)



	ref	pl10	mn10	enc25	enc50	nhr	hlng	llng	toot	lter
Region										
EnC										
Hosting										

Gas_15: Reverse Flow Firm Capacity HU-UA

	System Reliability Index (SRI)	Import Route Diversification Index (IRD)	Benefit / Cost Ratio (B/C)	Implementation progress Indicator (IPI)	Total Score	Ranking
Score	1.08	1.09	0.00	2.00	0.53	15
Impact (change of indicator)	0.08	0.04	-0.06	2.00		



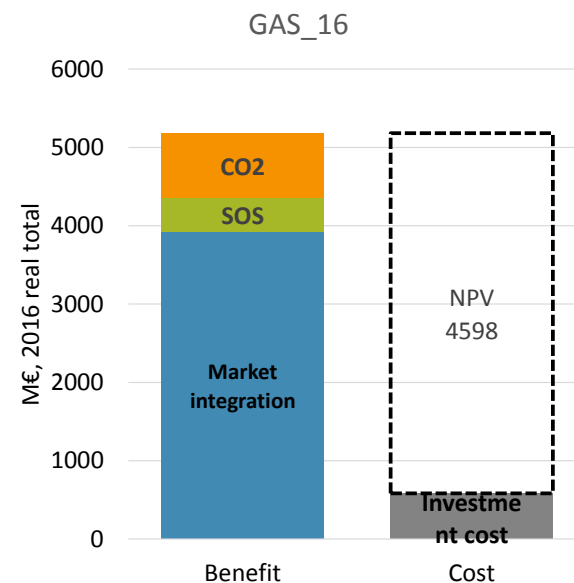
SRI and IRD values shown here represent the impact of a project (i.e. the difference without and with the individual project) in the countries on each end of the interconnection.

Gas_16: Ionian Adriatic Pipeline

			Infra		Total		CO2	Inv	NPV	B/C
	Cons.	Prod.	Infra OP	AUC	Trader	Wf				
AL	2264	0	67	0	0	2330	317	169	2478	15.66
BA	0	0	0	0	0	0	0	0	0	0.00
BG	-1	0	1	0	1	1	0	0	0	0.00
GE	-2	0	1	0	3	2	0	0	2	0.00
GR	-7	0	132	7	3	134	-1	0	133	0.00
HR	-11	6	167	4	3	170	-1	295	-126	0.57
HU	-5	0	-1	0	1	-4	0	0	-4	0.00
IT	-31	3	8	0	24	4	-1	0	3	0.00
KO*	0	0	0	0	0	0	0	0	0	0.00
MD	-1	0	0	0	0	-1	0	0	-1	0.00
ME	1642	0	43	0	0	1685	516	119	2082	18.54
MK	0	0	0	0	0	0	0	0	0	0.00
PL	-8	3	0	0	5	0	0	0	-1	0.00
RO	-6	7	7	0	0	8	0	0	8	0.00
RS	-1	0	0	0	1	0	0	0	0	0.00
SK	-4	0	8	0	6	10	0	0	10	0.00
UA	-21	18	18	0	0	14	-1	0	13	0.00
Region	3807	37	450	12	48	4354	827	583	4598	8.89
EnC	3880	18	128	0	4	4031	831	288	4574	16.90
Hosting	3887	6	408	11	6	4319	831	583	4567	8.84

Project code (Country A-B)	Total cost (M€)	Commission date	Capacity from A to B (GWh/day)	Capacity from B to A (GWh/day)
GAS_16 (IAP) (AL-MO)	583	2023	120	120
GAS_16 (IAP) (MO-HR)			110	110

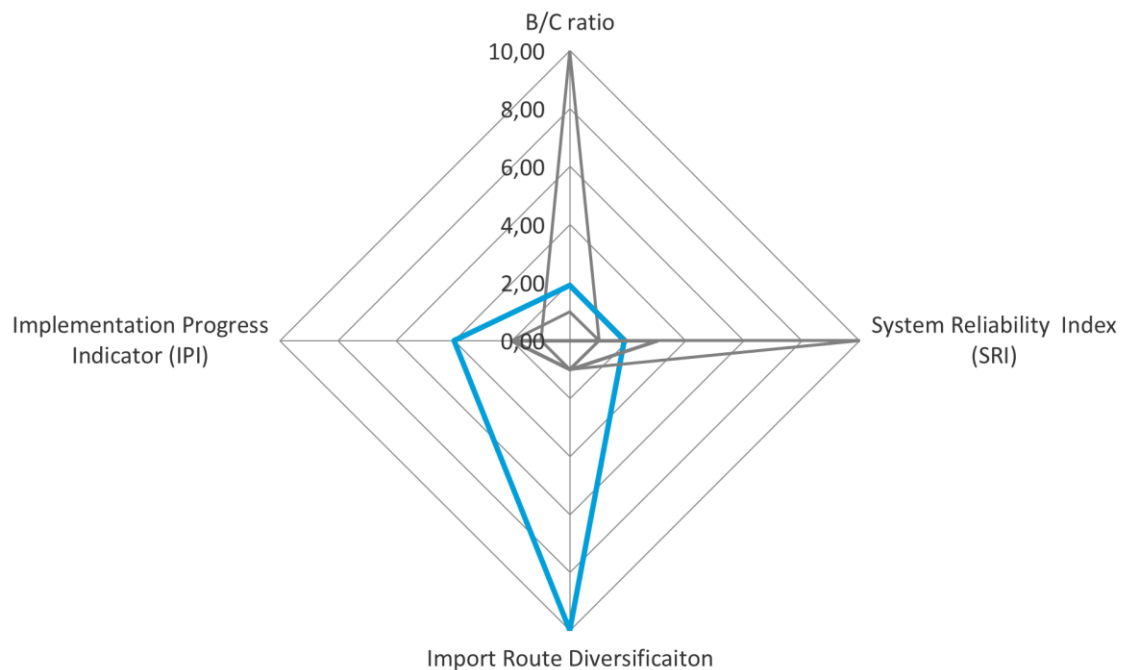
Newly gasified market, results can not be compared with the others. Consumer benefits are highly overestimated



	ref	pl10	mn10	enc25	enc50	nhr	hlng	llng	toot	lter
Region									n.a.	
EnC									n.a.	
Hosting									n.a.	

Gas_16: Ionian Adriatic Pipeline

	System Reliability Index (SRI)	Import Route Diversification Index (IRD)	Benefit / Cost Ratio (B/C)	Implementation progress Indicator (IPI)	Total Score	Ranking
Score	5.36	2.00	1.95	4.00	3.32	2
Impact (change of indicator)	0.42	0.06	8.89	4.00		



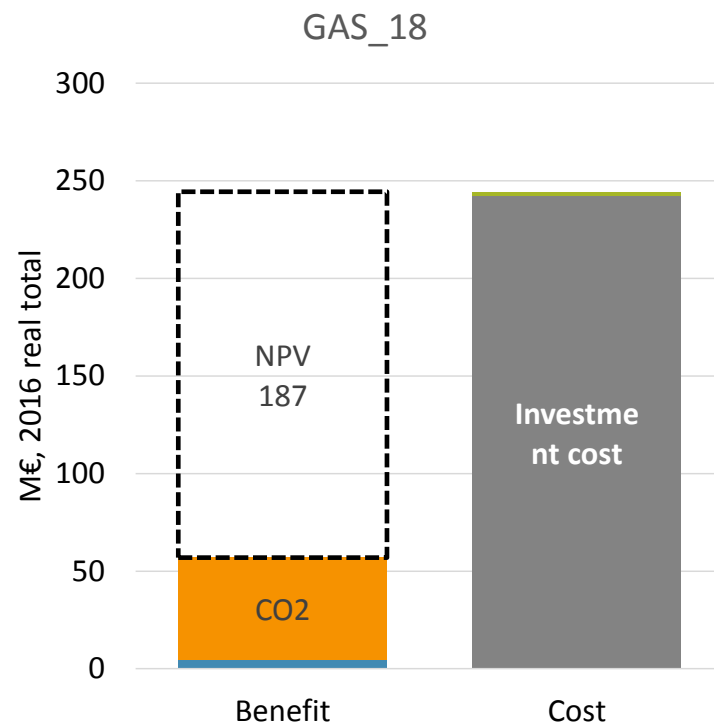
SRI and IRD values shown here represent the impact of a project (i.e. the difference without and with the individual project) in the countries on each end of the interconnection.

Gas_18: Iasi - Ungheni - Chisinau Pipeline

	Cons.	Prod.	Infra		Total			Inv	NPV	B/C
			OP	AUC	Trader	Wf	CO2			
AL	0	0	0	0	0	0	0	0	0	0.00
BA	-3	0	0	0	1	-1	0	0	-1	0.00
BG	-216	16	-3	-25	185	-44	-12	0	-55	0.00
GE	0	0	-3	0	0	-3	0	0	-3	0.00
GR	-1	0	11	1	1	11	0	0	11	0.00
HR	1	-1	1	0	0	1	0	0	1	0.00
HU	-64	4	-109	15	12	-142	-4	0	-146	0.00
IT	-17	1	0	0	14	-2	-2	0	-4	0.00
KO*	0	0	0	0	0	0	0	0	0	0.00
MD	352	0	95	0	-28	419	18	90	346	4.86
ME	0	0	0	0	0	0	0	0	0	0.00
MK	-17	0	-1	-25	22	-22	-1	0	-23	0.00
PL	122	-67	-4	-18	-63	-29	12	0	-17	0.00
RO	-1090	1169	-89	-3	44	32	-45	153	-167	-0.09
RS	-23	2	-1	0	16	-6	-2	0	-8	0.00
SK	-4	0	-47	0	2	-49	-1	0	-50	0.00
UA	904	-879	-172	-19	4	-162	90	0	-72	0.00
Region	-56	245	323	-74	210	3	52	242	-187	0.23
EnC	1213	-877	-82	-44	15	225	104	90	239	3.67
Hosting	-738	1169	6	-3	16	450	-28	242	180	1.74

Project code (Country A-B)	Total cost (M€)	Commission date	Capacity from A to B (GWh/day)	Capacity from B to A (GWh/day)
GAS_18 (RO-MO)	242	2019	43	43

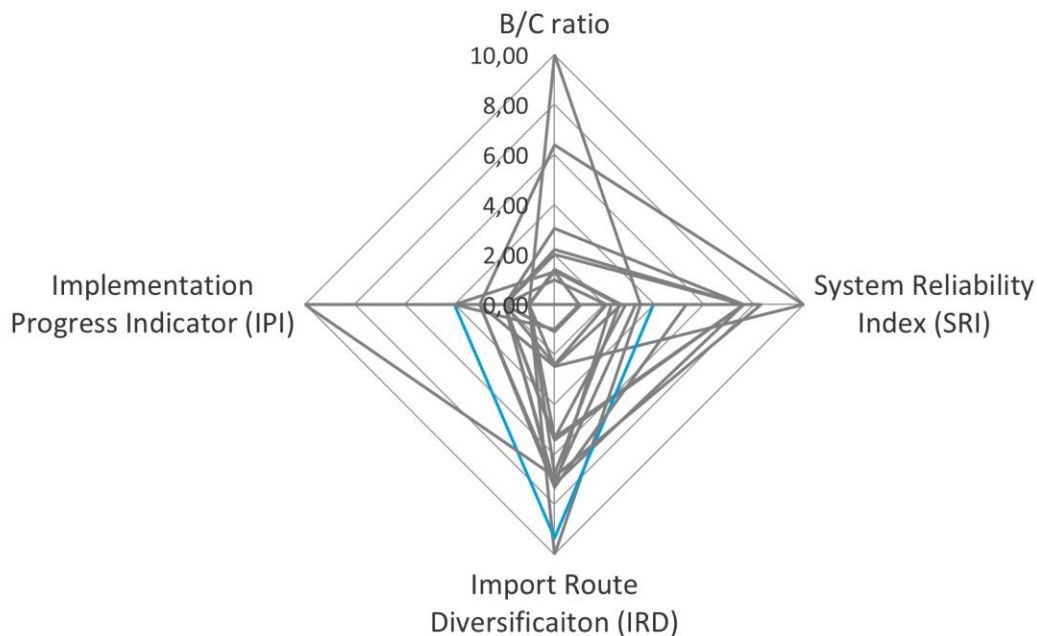
This project is „ending isolation” hence other TSOs loose flows – positive on EnC level!



	ref	pl10	mn10	enc25	enc50	nh	hlng	llng	toot	lter
Region	Red	Red	Red	Red	Red	Red	Red	Red	Green	Red
EnC	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
Hosting	Green	Green	Green	Red	Red	Green	Green	Green	Green	Green

Gas_18: Iasi - Ungheni - Chisinau Pipeline

	System Reliability Index (SRI)	Import Route Diversification Index (IRD)	Benefit / Cost Ratio (B/C)	Implementation progress Indicator (IPI)	Total Score	Ranking
Score	3.97	9.33	0.00	4.00	2.23	6
Impact (change of indicator)	0.52	0.48	0.23	4.00		



SRI and IRD values shown here represent the impact of a project (i.e. the difference without and with the individual project) in the countries on each end of the interconnection.

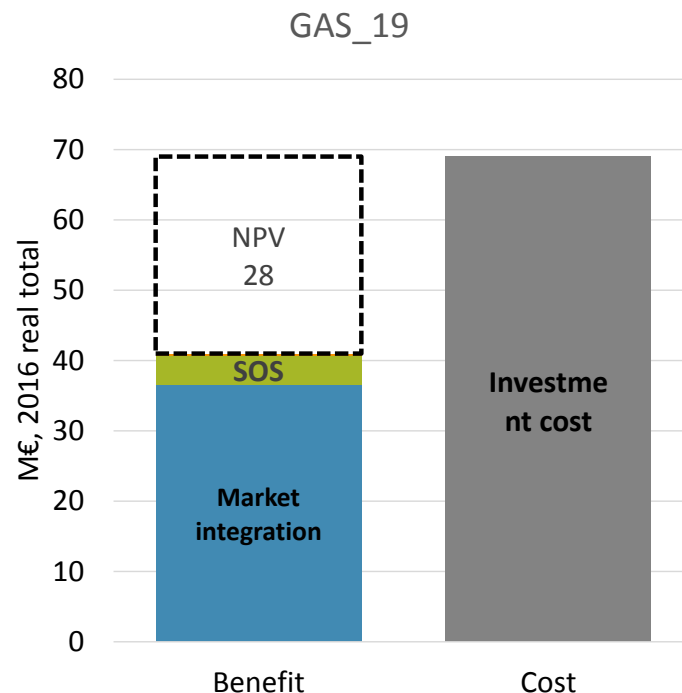
Gas_19: Dumrea storage (version 1)

	Cons.	Prod.	Infra		Total		CO2	Inv	NPV	B/C
			OP	AUC	Trader	Wf				
AL	6	0	7	0	8	22	0	69	-47	0.32
BA	0	0	0	0	0	0	0	0	0	0.00
BG	0	0	1	0	0	1	0	0	1	0.00
GE	0	0	1	0	0	2	0	0	2	0.00
GR	0	0	0	0	0	1	0	0	1	0.00
HR	0	0	0	0	0	0	0	0	0	0.00
HU	0	0	0	0	0	0	0	0	0	0.00
IT	1	0	1	0	0	1	0	0	1	0.00
KO*	0	0	0	0	0	0	0	0	0	0.00
MD	0	0	0	0	0	0	0	0	0	0.00
ME	0	0	0	0	0	0	0	0	0	0.00
MK	0	0	0	0	0	0	0	0	0	0.00
PL	0	0	0	0	0	0	0	0	0	0.00
RO	0	1	6	0	0	7	0	0	6	0.00
RS	0	0	0	0	0	0	0	0	0	0.00
SK	0	0	0	0	0	0	0	0	0	0.00
UA	0	0	8	0	0	8	0	0	7	0.00
Region	6	1	25	0	8	41	0	69	-28	0.59
EnC	6	0	16	0	8	31	0	69	-38	0.46
Hosting	6	0	7	0	8	22	0	69	-47	0.32

	ref	pl10	mn10	enc25	enc50	nhr	hlng	llng	toot	lter
Region										
EnC										
Hosting										

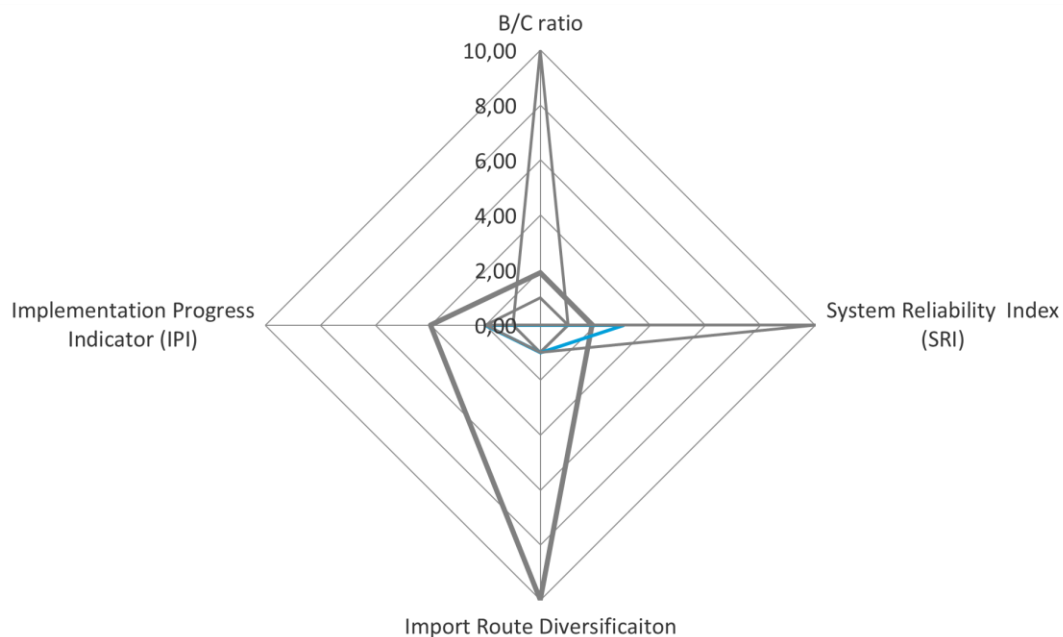
Project	Total cost (M€)	Commission date	Working gas (TWh)	Withdrawal capacity (GWh/day)	Injection capacity (GWh/d)
GAS_19	69	2024	3	15	7.5
UGS AL-1					

The storage is utilized on a market basis, the assumed 1€/MWh tariff is too low to cover the costs – The regional impact is confirmed by the modelling



Gas_19: Dumrea storage (version 1)

	System Reliability Index (SRI)	Import Route Diversification Index (IRD)	Benefit / Cost Ratio (B/C)	Implementation progress Indicator (IPI)	Total Score	Ranking
Score	3.01	1.00	0.00	2.00	0.80	5
Impact (change of indicator)	0.98	0.00	0.59	2.00		



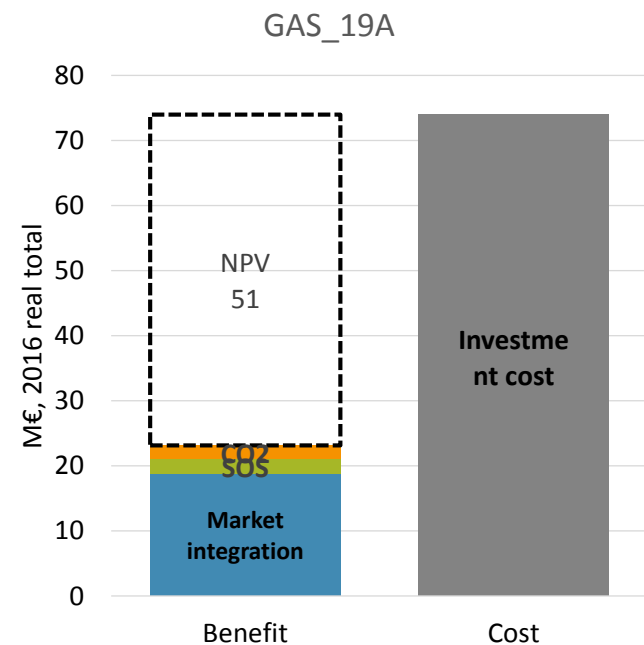
SRI and IRD values shown here represent the impact of a project (i.e. the difference without and with the individual project) in the countries on each end of the interconnection.

Gas_19A: Dumrea storage (version 2)

	Cons.	Prod.	Infra		Total			Inv	NPV	B/C
			OP	AUC	Trader	Wf	CO2			
AL	37	0	-13	2	0	26	3	74	-46	0.38
BA	0	0	0	0	0	0	0	0	0	0.00
BG	0	0	0	0	0	0	0	0	0	0.00
GE	1	0	0	0	-1	-1	0	0	-1	0.00
GR	0	0	1	2	0	3	0	0	3	0.00
HR	0	0	0	0	0	0	0	0	0	0.00
HU	0	0	0	0	0	0	0	0	0	0.00
IT	-4	0	-1	0	3	-2	0	0	-2	0.00
KO*	0	0	0	0	0	0	0	0	0	0.00
MD	0	0	0	0	0	0	0	0	0	0.00
ME	0	0	0	0	0	0	0	0	0	0.00
MK	0	0	0	0	0	0	0	0	0	0.00
PL	0	0	0	0	0	0	0	0	0	0.00
RO	-1	1	-2	0	0	-1	0	0	-2	0.00
RS	0	0	0	0	0	0	0	0	0	0.00
SK	0	0	0	0	0	0	0	0	0	0.00
UA	-1	1	-2	0	0	-2	0	0	-3	0.00
Region	30	3	-18	4	2	21	2	74	-51	0.31
EnC	36	1	-16	1	-1	22	3	74	-49	0.34
Hosting	37	0	-13	2	0	26	3	74	-46	0.38

Project	Total cost (M€)	Commission date	Working gas (TWh)	Withdrawal capacity (GWh/day)	Injection capacity (GWh/d)
GAS_19A	74	2024	11	70	49
UGS AL-2					

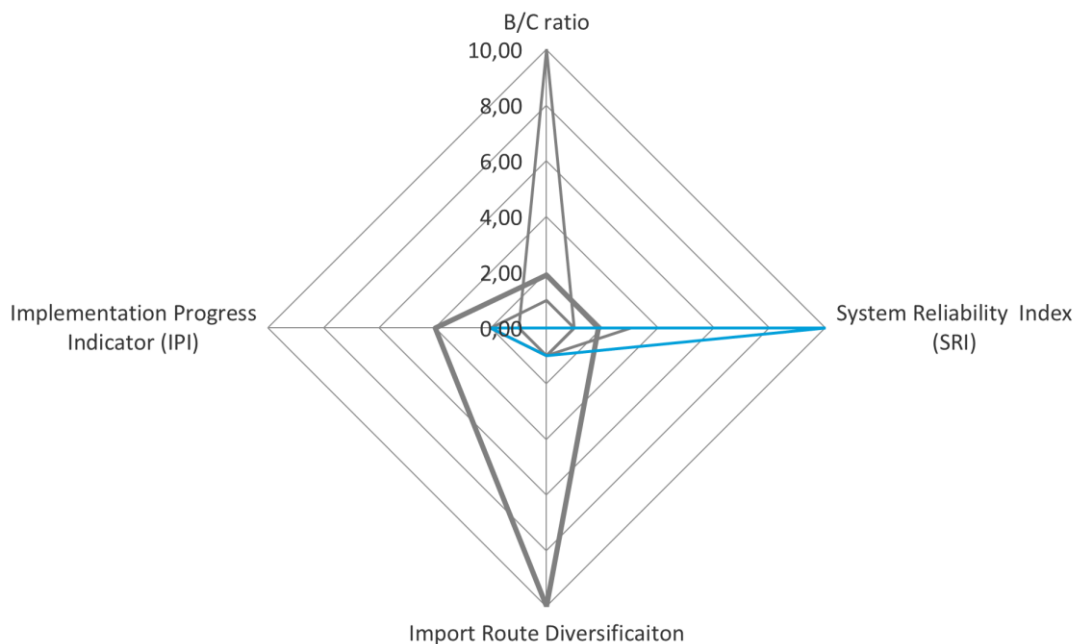
The storage is utilized on a market basis, the assumed 1€/MWh tariff is too low to cover the costs – The regional impact is confirmed by the modelling



	ref	pl10	mn10	enc25	enc50	nhr	hlng	llng	toot	lter
Region									n.a.	
EnC									n.a.	
Hosting									n.a.	

Gas_19A: Dumrea storage (version 2)

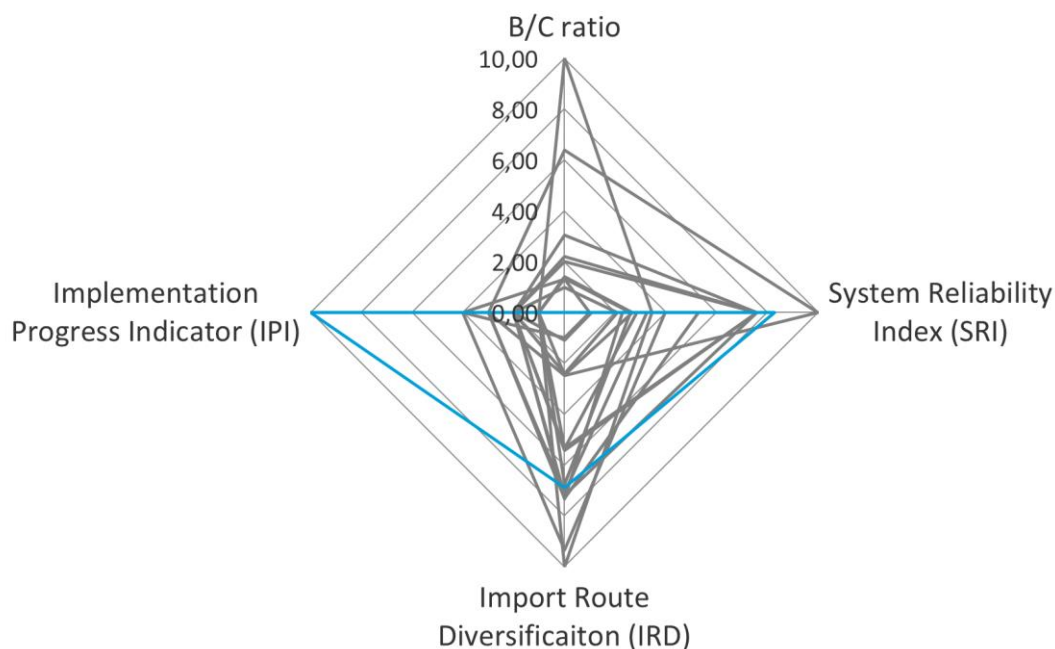
	System Reliability Index (SRI)	Import Route Diversification Index (IRD)	Benefit / Cost Ratio (B/C)	Implementation progress Indicator (IPI)	Total Score	Ranking
Score	10.00	1.00	0.00	2.00	1.85	3
Impact (change of indicator)	4.37	0.00	0.31	2.00		



SRI and IRD values shown here represent the impact of a project (i.e. the difference without and with the individual project) in the countries on each end of the interconnection.

Gas_20-21: South Caucasus Pipeline (SCP) + TANAP

	System Adequacy Index (SRI)	Import Route Diversification Index (IRD)	Benefit / Cost Ratio (B/C)	Implementation progress Indicator (IPI)	Total Score	Ranking
Score	8.28	6.90	10	10	9.32	N/A
Impact (change of indicator)	1.18	0.35	-	10		

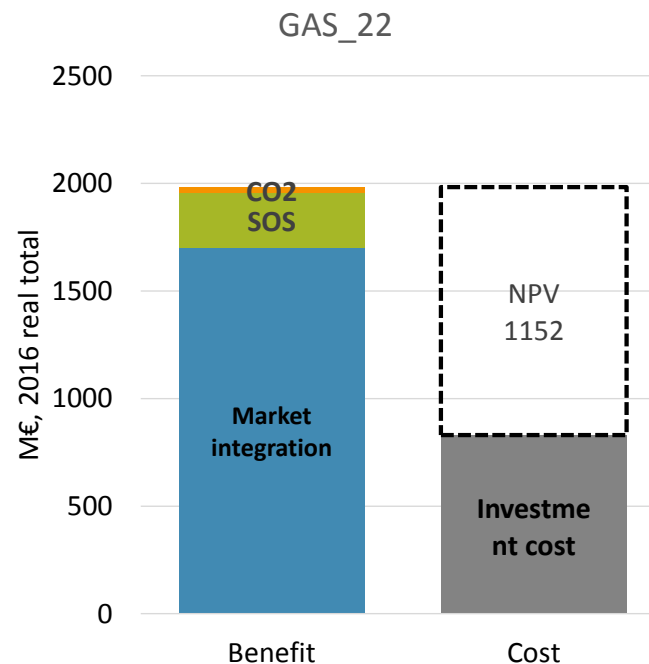


SRI and IRD values shown here represent the impact of a project (i.e. the difference without and with the individual project) in the countries on each end of the interconnection.

Gas_22: Trans Caspian Pipeline

	Cons.	Prod.	Infra		Total			Inv	NPV	B/C	
			OP	AUC	Trader	Wf	CO2				
AL	1	0	0	0	0	0	1	0	0	1	0.00
BA	0	0	0	0	0	0	0	0	0	0	0.00
BG	0	0	-44	0	0	-43	0	0	-43	0.00	
GE	176	0	396	2065	-122	2515	24	830	1709	3.06	
GR	10	0	-1	10	-4	14	1	0	15	0.00	
HR	7	-3	0	2	-2	4	1	0	5	0.00	
HU	3	0	-1	0	-1	2	0	0	2	0.00	
IT	1	0	-2	0	0	-1	0	0	-1	0.00	
KO*	0	0	0	0	0	0	0	0	0	0.00	
MD	0	0	0	0	0	0	0	0	0	0.00	
ME	0	0	0	0	0	0	0	0	0	0.00	
MK	0	0	0	0	0	0	0	0	0	0.00	
PL	1	-1	0	0	0	0	0	0	0	0.00	
RO	4	-5	-245	0	0	-246	0	0	-245	0.00	
RS	1	0	0	0	0	1	0	0	1	0.00	
SK	2	0	-4	0	-2	-4	0	0	-4	0.00	
UA	4	-5	-288	0	1	-288	1	0	-288	0.00	
Region	209	-13	-186	2076	-131	1955	28	830	1152	2.39	
EnC	182	-5	108	2065	-122	2228	25	830	1423	2.71	
Hosting	176	0	396	2065	-122	2515	24	830	1709	3.06	

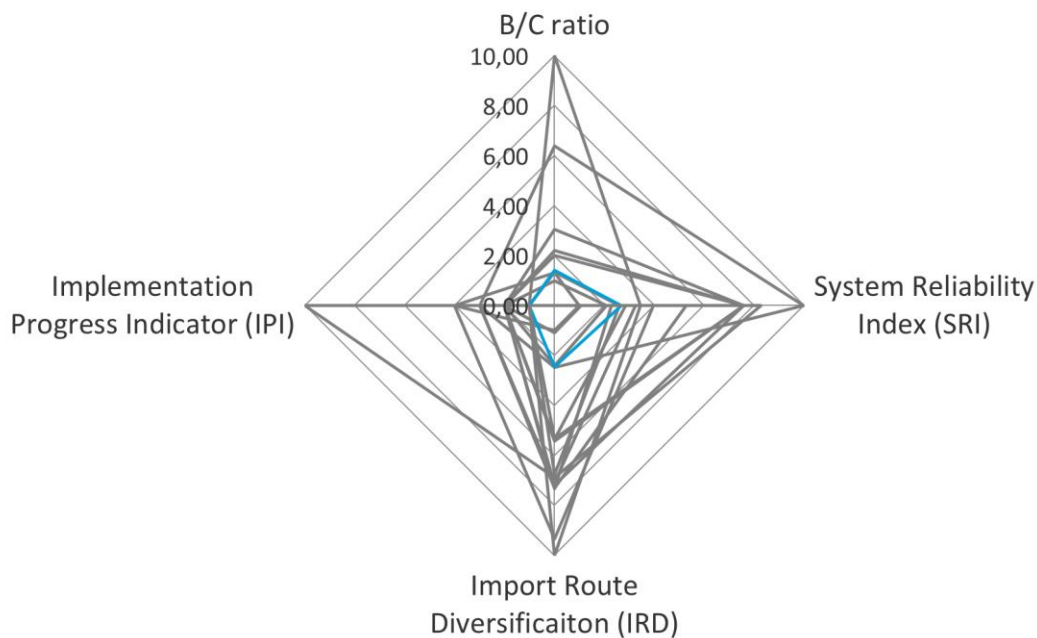
Project code (Country A-B)	Total cost (M€)	Commission date	Capacity from A to B (GWh/day)	Capacity from B to A (GWh/day)
GAS_22 (TCP)	730 (P1)		2020 (P1)	490 (P1)



	ref	pl10	mn10	enc25	enc50	nh	hlng	llng	toot	lter
Region										
EnC										
Hosting										

Gas_22: Trans Caspian Pipeline

	System Reliability Index (SRI)	Import Route Diversification Index (IRD)	Benefit / Cost Ratio (B/C)	Implementation progress Indicator (IPI)	Total Score	Ranking
Score	2.68	2.46	1.40	1.00	1.72	10
Impact (change of indicator)	0.32	0.11	2.39	1.00		



SRI and IRD values shown here represent the impact of a project (i.e. the difference without and with the individual project) in the countries on each end of the interconnection.

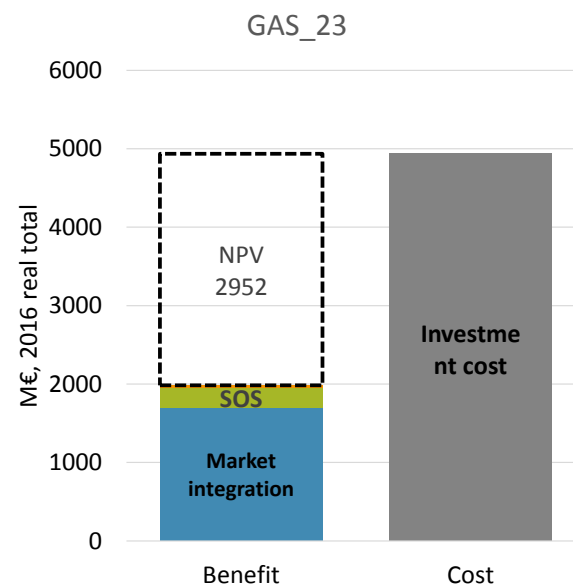
Gas_23: White Stream Pipeline

	Cons.	Prod.	Infra		Total		CO2	Inv	NPV	B/C	
			OP	AUC	Trader	Wf					
AL	1	0	0	0	0	0	1	0	0	1	0.00
BA	0	0	0	0	0	0	0	0	0	0	0.00
BG	0	0	-44	0	0	0	-43	0	0	-43	0.00
GE	176	0	396	2065	-122	2515	24	4935	-2396	0.51	
GR	10	0	-1	10	-4	14	1	0	15	0.00	
HR	7	-3	0	2	-2	4	1	0	5	0.00	
HU	3	0	-1	0	-1	2	0	0	2	0.00	
IT	1	0	-2	0	0	-1	0	0	-1	0.00	
KO*	0	0	0	0	0	0	0	0	0	0.00	
MD	0	0	0	0	0	0	0	0	0	0.00	
ME	0	0	0	0	0	0	0	0	0	0.00	
MK	0	0	0	0	0	0	0	0	0	0.00	
PL	1	-1	0	0	0	0	0	0	0	0.00	
RO	4	-5	-244	0	0	-245	0	0	-245	0.00	
RS	1	0	0	0	0	1	0	0	1	0.00	
SK	2	0	-4	0	-2	-4	0	0	-4	0.00	
UA	4	-5	-287	0	1	-288	1	0	-287	0.00	
Region	209	-13	-186	2076	-131	1955	28	4935	-2952	0.40	
EnC	182	-5	109	2065	-122	2229	25	4935	-2681	0.46	
Hosting	180	-5	152	2065	-122	2270	24	4935	-2641	0.46	

	ref	pl10	mn10	enc25	enc50	nhr	hlng	llng	toot	lter
Region										
EnC										
Hosting										

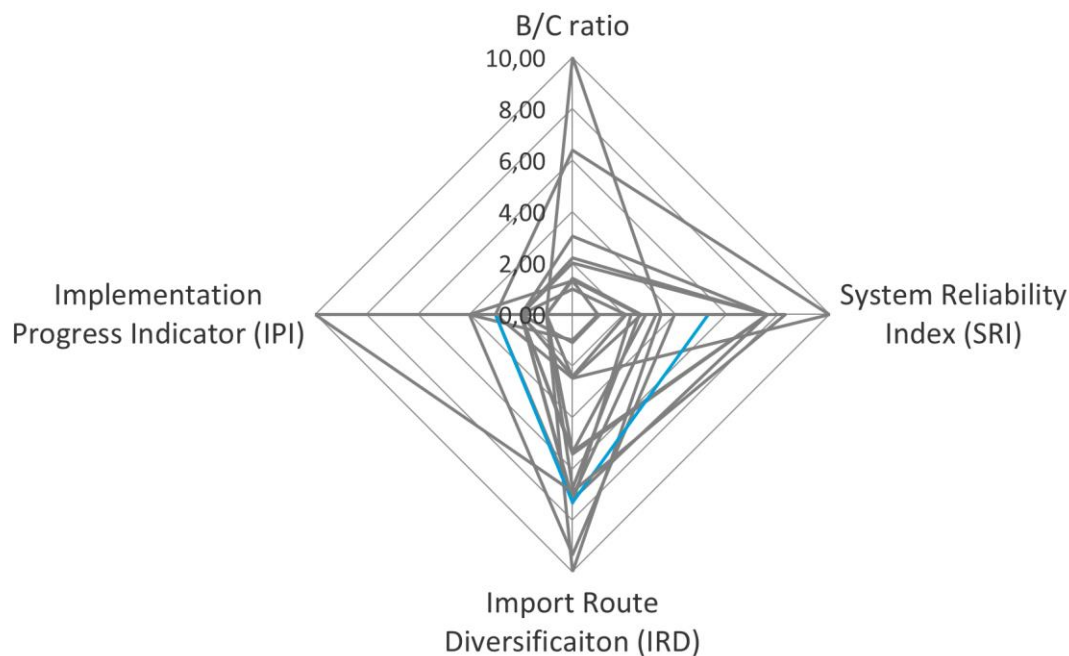
Project code (Country A-B)	Total cost (M€)	Commission date	Capacity from A to B (GWh/day)	Capacity from B to A (GWh/day)
GAS_23 (Whitestream) (GE-RO)	4105		2022	490

Very high investment costs can not be outweighed by the benefits.
With some more capacity on SCPfX the project turns positive



Gas_23: White Stream Pipeline

	System Reliability Index (SRI)	Import Route Diversification Index (IRD)	Benefit / Cost Ratio (B/C)	Implementation progress Indicator (IPI)	Total Score	Ranking
Score	5.28	7.30	0.00	3.00	2.13	7
Impact (change of indicator)	0.72	0.37	0.40	3.00		



SRI and IRD values shown here represent the impact of a project (i.e. the difference without and with the individual project) in the countries on each end of the interconnection.

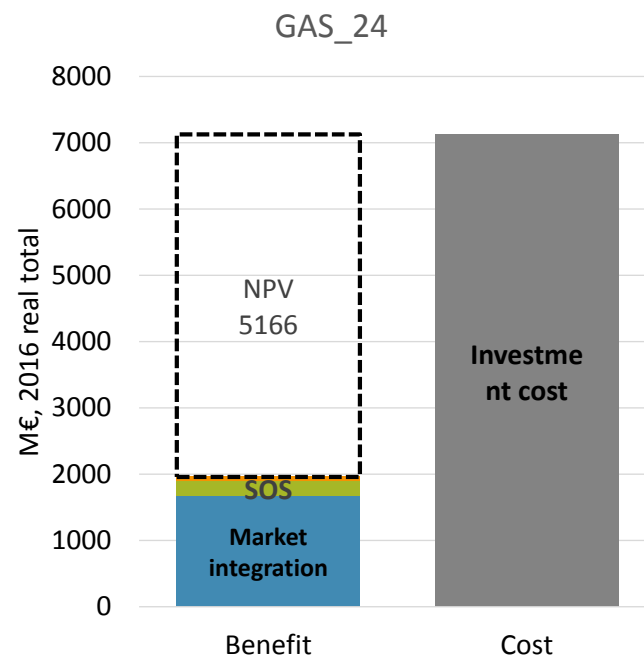
Gas_24: AGRI LNG

	Cons.	Prod.	Infra		Total		CO2	Inv	NPV	B/C	
			OP	AUC	Trader	Wf					
AL	1	0	0	0	0	0	1	0	0	1	0.00
BA	0	0	0	0	0	0	0	0	0	0	0.00
BG	1	0	-1	0	0	0	0	0	0	0	0.00
GE	258	0	289	1623	-277	1894	53	3977	-2030	0.49	
GR	11	0	0	9	-5	15	1	0	17	0.00	
HR	9	-4	0	2	-2	5	1	0	6	0.00	
HU	3	0	-1	0	-1	2	0	0	2	0.00	
IT	6	0	-3	0	-3	-1	1	0	0	0.00	
KO*	0	0	0	0	0	0	0	0	0	0.00	
MD	0	0	0	0	0	0	0	0	0	0.00	
ME	0	0	0	0	0	0	0	0	0	0.00	
MK	0	0	0	0	0	0	0	0	0	0.00	
PL	1	-1	0	0	0	0	0	0	0	0.00	
RO	4	-5	-3	0	0	-4	1	3147	-3150	0.00	
RS	1	0	0	0	0	1	0	0	1	0.00	
SK	3	0	-4	0	-3	-4	0	0	-4	0.00	
UA	6	-8	-10	0	1	-10	1	0	-9	0.00	
Region	306	-18	268	1634	-291	1899	60	7124	-5166	0.27	
EnC	268	-8	279	1623	-276	1886	55	3977	-2036	0.49	
Hosting	263	-5	286	1623	-277	1890	54	7124	-5180	0.27	

	ref	pl10	mn10	enc25	enc50	nh	hlng	llng	toot	lter
Region										
EnC										
Hosting										

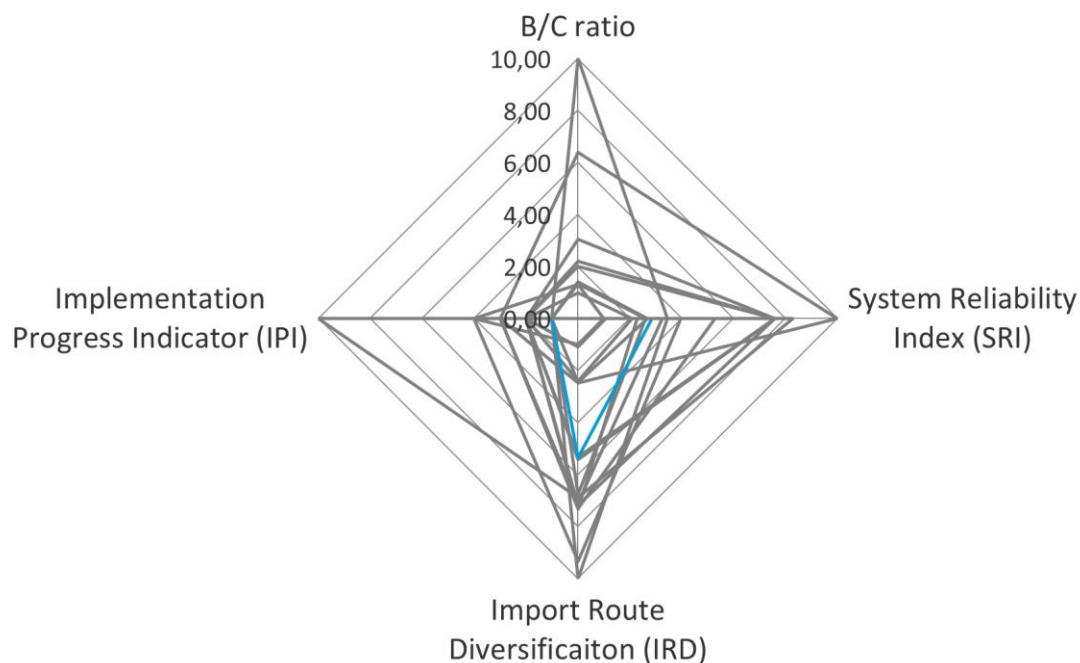
Project	Total cost (M€)	Commission date	Maximum annual capacity (TWh/year)	Maximum sendout capacity (GWh/day)	Storage capacity (GWh)
GAS_24	6 294	2030	88	240	3500
AGRI LNG					

Very high investment costs can not be outweighed by the benefits. Even with more capacity on SCPfX the project remains negative



Gas_24: AGRI LNG

	System Reliability Index (SRI)	Import Route Diversification Index (IRD)	Benefit / Cost Ratio (B/C)	Implementation progress Indicator (IPI)	Total Score	Ranking
Score	2.86	5.35	0.00	1.00	1.26	14
Impact (change of indicator)	0.35	0.27	0.27	1.00		



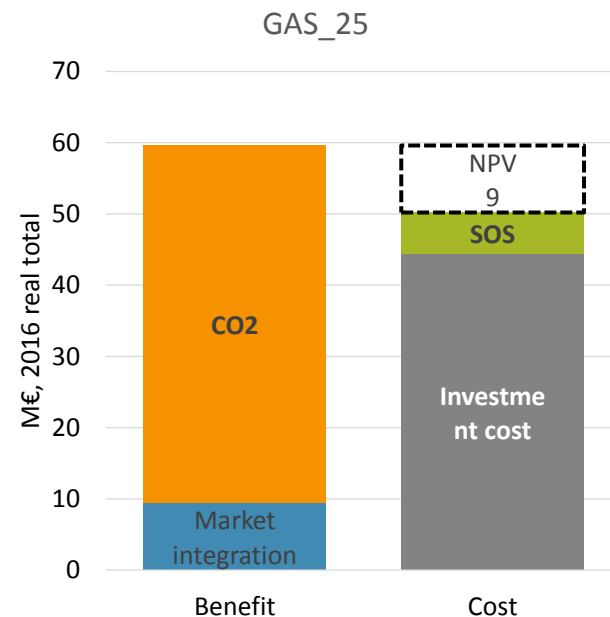
SRI and IRD values shown here represent the impact of a project (i.e. the difference without and with the individual project) in the countries on each end of the interconnection.

Gas_25: Trans Balkan reverse flow

	Cons.	Prod.	Infra		Total		CO2	Inv	NPV	B/C
			OP	AUC	Trader	Wf				
AL	0	0	0	0	0	0	0	0	0	0.00
BA	-3	0	0	0	1	-1	0	0	-1	0.00
BG	-310	22	-2	-30	266	-54	-15	15	-84	-4.67
GE	0	0	1	0	0	1	0	0	1	0.00
GR	0	0	0	0	1	1	0	0	1	0.00
HR	4	-3	0	0	0	1	0	0	1	0.00
HU	-58	2	-155	15	11	-185	-4	0	-189	0.00
IT	-2	-1	0	0	1	-2	-2	0	-4	0.00
KO*	0	0	0	0	0	0	0	0	0	0.00
MD	41	0	1	0	-2	41	3	0	44	0.00
ME	0	0	0	0	0	0	0	0	0	0.00
MK	-27	0	-2	-30	22	-36	-2	0	-38	0.00
PL	251	-130	-7	-20	-138	-42	22	0	-20	0.00
RO	-1506	1636	-104	144	68	238	-57	15	166	12.21
RS	-24	2	-1	0	16	-6	-2	0	-9	0.00
SK	0	0	-94	0	-7	-102	0	0	-103	0.00
UA	1129	-1088	-22	126	8	152	108	15	245	17.55
Region	-504	440	-384	204	248	4	50	44	9	1.21
EnC	1117	-1087	-23	96	47	150	106	15	241	17.31
Hosting	-687	569	-127	240	341	336	36	44	327	8.36

Project code (Country A-B)	Total cost (M€)	Commission date	Capacity from A to B (GWh/day)	Capacity from B to A (GWh/day)
GAS_25 (Trans Balkan rf) (UA- MD)	14 (P1)		2019 (P1) 2021 (P2) 2024 (P3)	43 (P1) 143 (P2) 574 (P3)

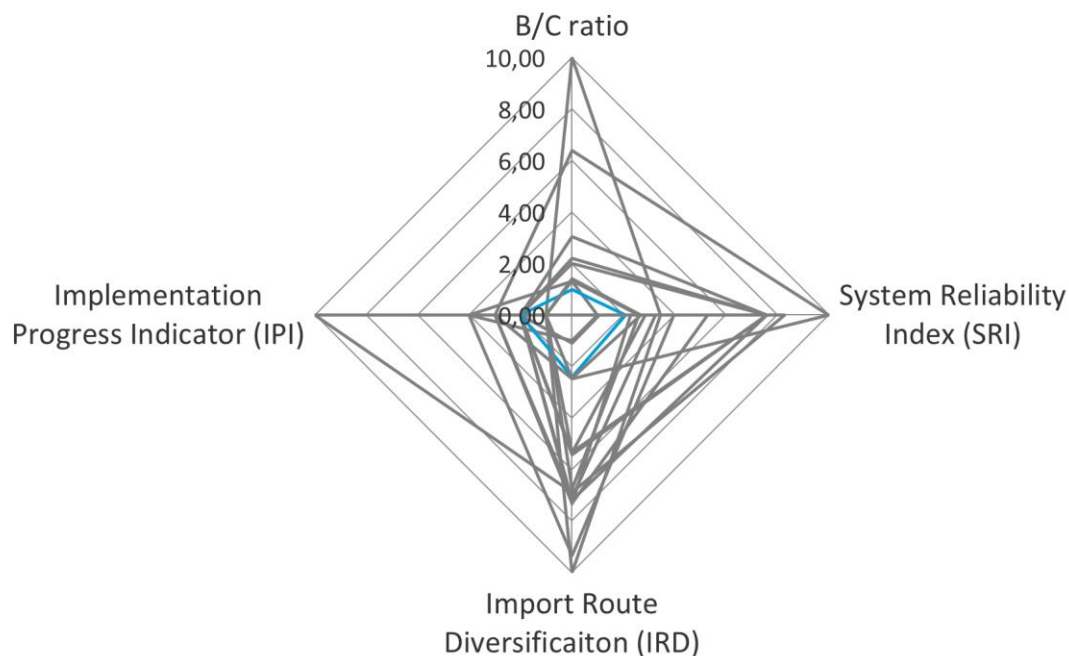
NOTE: costs might be underestimated!



	ref	pl10	mn10	enc25	enc50	nhf	hlng	llng	toot	lter
Region	Green	Red	Green	Red	Red	Red	Green	Red	Green	Green
EnC	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
Hosting	Green	Green	Green	Green	Red	Green	Green	Green	Green	Green

Gas_25: Trans Balkan reverse flow

	System Reliability Index (SRI)	Import Route Diversification Index (IRD)	Benefit / Cost Ratio (B/C)	Implementation progress Indicator (IPI)	Total Score	Ranking
Score	2.10	2.41	1.00	2.00	1.47	13
Impact (change of indicator)	0.23	0.11	1.21	2.00		



SRI and IRD values shown here represent the impact of a project (i.e. the difference without and with the individual project) in the countries on each end of the interconnection.

Thank you!

REKK
www.rekk.hu

Borbála Takácsné Tóth

Senior research associate

REKK (REKK Kft.)
Po. Box 1803
1465 Budapest
Hungary

E-Mail: borbala.toth@rekk.hu

Phone: +36-1-482-5153

DNV GL
www.dnvgl.com

Dr. Daniel Grote

Senior Consultant Policy & Regulation

DNV GL Energy
Zanderstr. 7
53177 Bonn
Germany

E-Mail: Daniel.Grote@dnvgl.com

Phone: +49-228-4469049

Backup slides

Infrastructure assumptions

- FID projects of the TYNDP 2017 are part of the reference + Balticconnector, BRUA, TAP, TANAP,
- From 2020 TANAP, TAP IGB and Krk LNG are in the reference!
- New LTCs from Azerbaijan 2020: 1 bcm to BG, 1 bcm to GR, 8 bcm to IT – this can not be delivered without further extension of SCP, hence SCP-X is in the reference

Transmission	Maximum flow (GWh/d)	Date of commissioning	Basis to include into reference for 2020
IT-CH	368	2018	FID
CH-FR	100	2018	FID
CH-DE	240	2018	FID
TR-GR_TAP	317	2019	Under construction
GE-TR_TANAP	485	2018	Under construction
GR-BG	90	2018	FID
GR-IT_TAP	334	2019	Under construction
GR-AL_TAP	40	2019	FID (source for Albania)
SI-HR	162	2019	Under construction
HR-SI	162	2019	Under construction
IT-AT	189	2018	FID
FI-EE	79	2020	FID according to project site
EE-FI	79	2020	FID according to project site
RO-HU	126	2023	Under construction
HU-RO	77	2023	Under construction
SCP-X	545	2019	Under construction

Storage and LNG facilities

Storage facility	Market	Working gas (TWh)	Capacity Injection (GWh/d)	Withdrawal (GWh/d)	Commissioning
Botas Tarsus	TR	11	319	319	2020
Silivri (Marmara)	TR	46	638	638	2020
Bordolano phase II	IT	7	109	185	2019

LNG	Maximum flow (GWh/d)	Date of commissioning	Basis to include into reference for 2020
GR-LNG expansion	156	2018	FID
PL_LNGext	67	2020	FID
ES-LNG ext1	192	2020	FID
ES-LNG ext2	256	2026	FID
HR_LNG	108	2020	Under binding OS

Gas consumption submitted total

Table 53. Gas consumption in the EnC contracting parties (submitted)

TWh/year		2016	2020	2025	2030	2035	2040	2045	2050
Albania	AL	0	3	6	11	14	19	21	24
Bosnia and Herzegovina	BA	1.7	2.2	3.3	6.1	7.1	7.4	7.9	8.4
Georgia	GE	24	30	33	36	41	44	44	44
Kosovo*	KO*	0	0	0	4	6	6	7	7
Moldova	MD	11	11	12	13	14	14	14	14
Montenegro	ME	0	4	5	5	8	9		
FYR of Macedonia	MK		7	16	17	17	18	20	22
Serbia	RS	22	24	28	32	32	32	32	32
Ukraine	UA	327	369	368	371	375	394	394	394
Total		374	446	465	486	501	530	533	540

Gas consumption assumptions

Table 54. Gas consumption in the EnC contracting parties (reference scenario)

TWh/year		2016	2020	2025	2030	2035	2040	2045	2050
Albania	AL	0	1	2	3	4	5	6	7
Bosnia and Herzegovina	BA	2	2	3	4	5	5	5	6
Georgia	GE	24	30	33	36	41	44	44	44
Kosovo*	KO*	0	0	0	0	0	0	0	0
Moldova	MD	11	11	12	13	14	14	14	14
Montenegro	ME	0	0	0	0	0	0	0	0
FYR of Macedonia	MK	2	7	16	17	17	18	20	22
Serbia	RS	22	24	28	32	32	32	32	32
Ukraine	UA	327	369	368	371	375	394	394	394
Total		374	446	465	486	501	530	533	540

Table 55. Project specific gas consumption in the EnC contracting parties

TWh/year		2020	2025	2030	2035	2040	2045	2050	Project
Albania	AL	3	6	11	14	19	21	24	GAS_16
BiH North and South	BA	2.2	3.3	6.1	7.1	7.4	7.9	8.4	GAS_01 GAS_03
BiH West	BA	2.2	3.3	3.8	5.0	5.4	6.0	6.6	GAS_02
Kosovo*	KO*	0	0	4	6	6	7	7	GAS_12, GAS_13
Montenegro	ME	4	5	5	8	9	9	9	GAS_16