

BEMIP HYD 3 (Less-Advanced) H2 Interconnection Baltic States



Reasons for grouping [ENTSOG]

The project group aims at interconnecting future hydrogen infrastructure between Baltic states through an on-shore corridor.

The group includes investments in the three Baltic states: Estonia (HYD-N-1122), Latvia (HYD-N-HYD-N-1280) and Lithuania (HYD-N-1239).

Objective of the group [Promoter]

The main purpose of the group is to provide hydrogen transmission from Finland to Germany through Estonia, Latvia, Lithuania, Poland. The project group is an integral part of the whole Nordic-Baltic Hydrogen Corridor.

The Nordic-Baltic Hydrogen Corridor project will enable the transport of hydrogen produced in the Baltic Sea region to supply consumption points and industrial clusters along the corridor and in Central Europe.



HYD-N-1122 Nordic-Baltic Hydrogen Corridor - EE section

Comm. Year **2029**

elering

HYD-N-1280 Nordic-Baltic Hydrogen Corridor - LV section

Comm. Year **2029**

conexus
BALTIC GRID

HYD-N-1239 Nordic-Baltic Hydrogen Corridor – LT section

Comm. Year **2029**

Amber Grid

A. Project group technical information [Promoter/ ENTSOG]

Project technical information [Promoter]

Hydrogen Transmission

TYNDP Project code	Section name	New / Repurposing	Nominal Diameter [mm]	Section Length [km]	Compressor power [MW]
HYD-N-1122	Nordic-Baltic Hydrogen Corridor - EE section	New	To be determined	To be determined ~290 km	To be determined
HYD-N-1280	Nordic - Baltic Hydrogen Corridor – LV section	New	To be determined	270	To be determined
HYD-N-1239	Nordic-Baltic Hydrogen Corridor - LT section	New	To be determined	500	To be determined

Capacity increment [ENTSOG]

TYNDP Project code	Point name	Operator	From system	To system	Capacity increment [GWh/d]	Comm. year
HYD-N-1122	H2_IP_EE-LV	Elering AS	Transmission Latvia (LV Hydrogen)	Transmission Estonia (EE Hydrogen)	100	2029
HYD-N-1122	H2_IP_EE-LV	Elering AS	Transmission Estonia (EE Hydrogen)	Transmission Latvia (LV Hydrogen)	200	2029
HYD-N-1280	H2_IP_EE-LV	Conexus Baltic Grid	Transmission Estonia (EE Hydrogen)	Transmission Latvia (LV Hydrogen)	200	2029
HYD-N-1280	H2_IP_EE-LV	Conexus Baltic Grid	Transmission Latvia (LV Hydrogen)	Transmission Estonia (EE Hydrogen)	100	2029
HYD-N-1280	H2_IP_LV-LT	Conexus Baltic Grid	Transmission Lithuania (LT Hydrogen)	Transmission Latvia (LV Hydrogen)	100	2029
HYD-N-1280	H2_IP_LV-LT	Conexus Baltic Grid	Transmission Latvia (LV Hydrogen)	Transmission Lithuania (LT Hydrogen)	200	2029
HYD-N-1239	H2_IP_LV-LT	AB Amber Grid	Transmission Latvia (LV Hydrogen)	Transmission Lithuania (LT Hydrogen)	200	2029

HYD-N-1239	H2_IP_LV-LT	AB Amber Grid	Transmission Lithuania (LT Hydrogen)	Transmission Latvia (LV Hydrogen)	100	2029
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B. Project Cost Information

During the TYNDP 2022 Project Data Collection, promoters were asked to indicate whether their costs were confidential or not. The following tables display the non-confidential costs provided by the promoters (as of December 2022, end of PCI 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.

[ENTSOG]

TYNDP Project code	CAPEX [M€]	CAPEX range [%]	OPEX [M€/y]	OPEX range [%]
HYD-N-1122	800	40%	8	40%
HYD-N-1280	432	40%	3,9	40%
HYD-N-1239	840	40%	21,8	40%

Description of the cost and range [Promoter]

The CAPEX and OPEX for each section are highly indicative and were set according to European Hydrogen Backbone estimates. More precise CAPEX and OPEX will be estimated during pre-feasibility study.

C. Project Benefits [ENTSOG]

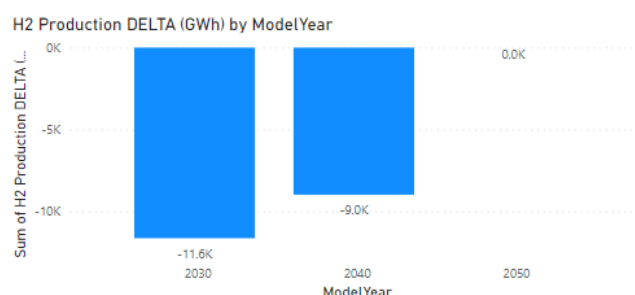
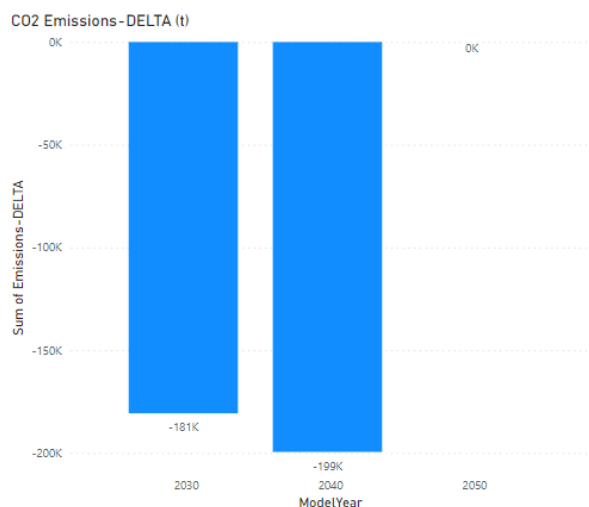
C.1 Summary of benefits

This section provides a summarised analysis by ENTSOG of the main benefits stemming from the realisation of the overall group. More details on the indicators are available in Annex D of TYNDP 2022¹.

Distributed Energy

Sustainability:

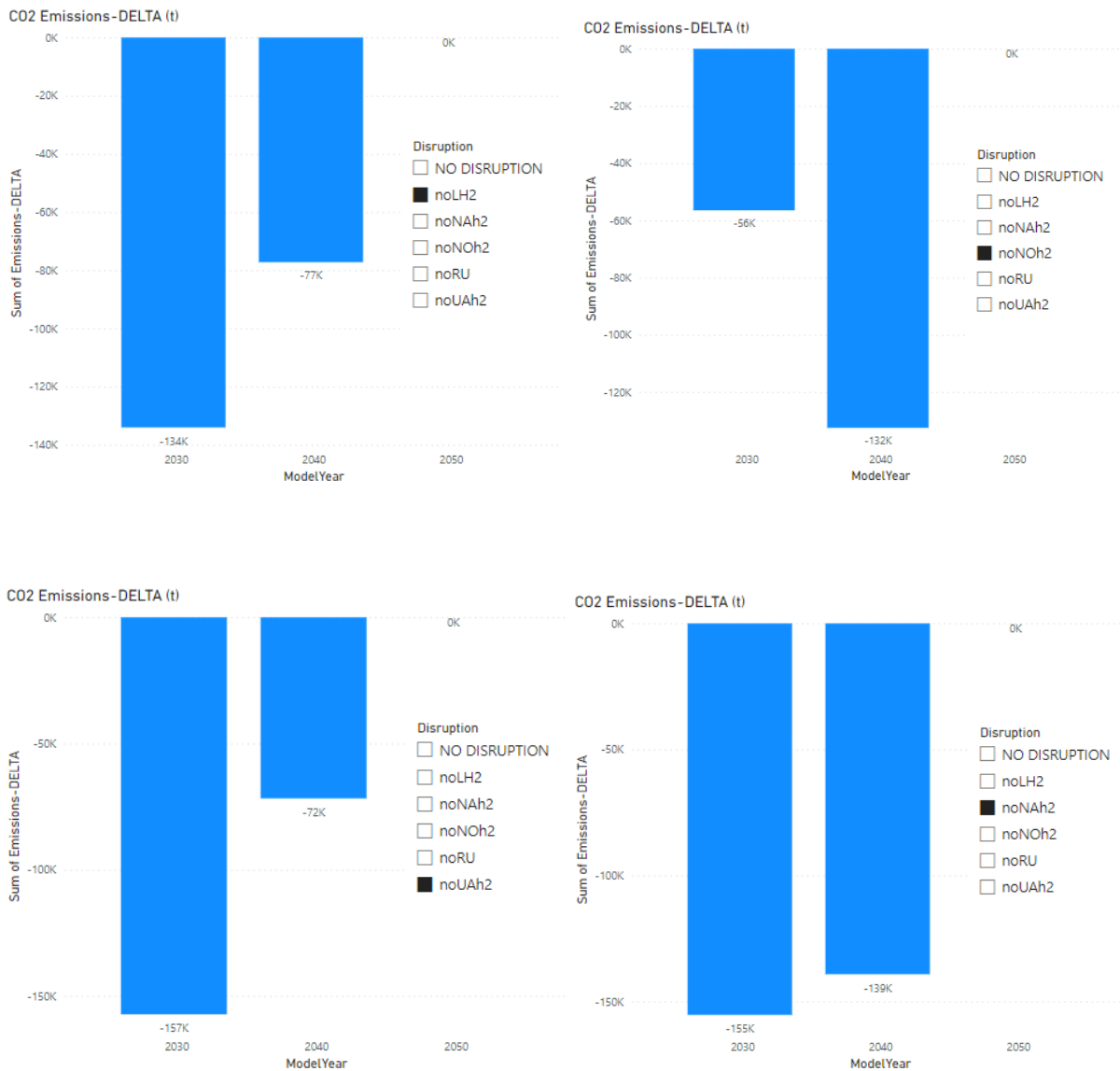
In the reference case which analyses yearly demand in two periods (average winter and average summer), the project group will contribute to sustainability by reducing overall CO₂ emissions by 181 kt in 2030 and by 199 kt in 2040. This is explained as the project group will enable replacement of blue hydrogen supplies and, therefore, will reduce natural gas imports, through the access to hydrogen supply sources.



Similarly, when Norwegian, North African, Ukrainian or liquid hydrogen imports are disrupted, the project group also contributes to sustainability by reducing overall CO₂ emissions in 2030 and 2040, however, to a lower extent than in the reference case due to the lower availability of hydrogen supplies.

1 noLH2 : LH2 disruption / 2 noNOh2 : Norway disruption / 3 noUAh2 : Ukraine disruption/ 4 noNAh2 : North Africa disruption

¹ https://www.entsog.eu/sites/default/files/202304/ENTSOG_TYNDP_2022_Annex_D_Methodology_230411.pdf



Security of Supply²:

> Reference case

² As for the hydrogen system there is no existing infrastructure level available yet, ENTSG has identified a possible hydrogen network according to the information provided by promoters in their project submission for the TYNDP/PCI process (i.e., H2 Infrastructure level). Therefore, the System Assessment shows the results that could be reached (for different timestamps) under the hypothesis of a full commissioning of the H2 infrastructure projects that were submitted by project promoters but that are not yet in place. Therefore, even in configurations where no demand curtailment is identified (e.g., average winter in 2030) these results should not be read as an absence of H2 infrastructure needs for the given scenario. On the contrary, the full availability of the planned infrastructures composing the H2 infrastructure level is assumed to avoid the potential demand curtailment.

2030 DE- Benefits



2040 DE- Benefits



2050 DE- Benefits



With the implementation of the project group, which creates new interconnections between Estonia, Latvia and Lithuania for both flow directions, allowing hydrogen to flow from Finland to Baltic States and from Poland to Baltic States.

In the reference case, the project group partially mitigates the risk of hydrogen demand curtailment during average winter (reducing by 12% in PL and LT and by 30% LV) and fully mitigates the risk of demand curtailment during average summer in Poland, Lithuania and Latvia in 2040 and 2050.

> Climatic stress cases

In addition to the security of supply benefits described for reference cases, additional security of supply benefits are expected under climatic stress cases (2-Week Cold Spell, 2-Week Dunkelflaute and in Peak Day), where due to the higher hydrogen demand the projects group will also mitigate risk of demand curtailment in Latvia, Lithuania and Poland in 2030.

2030 DE- Benefits



2040 DE- Benefits



2050 DE- Benefits



> Disruption cases (S-1):

Similarly to the yearly reference case, under supply disruption cases, the project group will enable cooperation between the Baltic States and Poland, allowing hydrogen supplies to reach Poland. Project group reduces the risk of demand curtailment in PL, LT and LV in 2040 and 2050, no benefit is foreseen in 2030 as average yearly demand can be satisfied with the available hydrogen supply.

Compared to the yearly reference case where no supply disruption is considered, the contribution of the project group to the reduction of the risk of demand curtailment is lower, due to the limited supply available.

Maps for specific disruptions: 1 noLH2 : LH2 disruption / 2 noNOH2 : Norway disruption / 3 noUAh2 : Ukraine disruption/ 4 noNAh2 : North Africa disruption

Supply disruption case: No LH2/ No NOH2/ No UAH2/ No NAH2

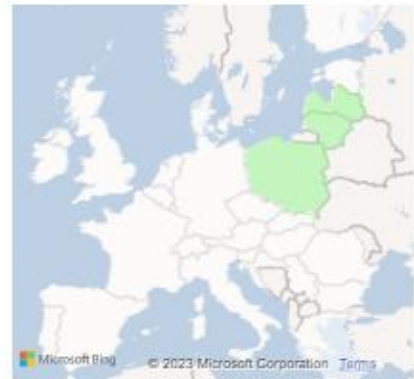
2030 DE- Benefits



2040 DE- Benefits



2050 DE- Benefits



> SLCD:

In case of single largest capacity disruption, the project group mitigates the risk of demand curtailment in 2030 in Poland (by 24%), Lithuania (by 25%), Latvia (by 35%) and Estonia (by 4%), in 2040 in Poland (by 14%), Lithuania (by 17%) and Latvia (by 24%). In 2050, The projects group mitigates the risk of demand curtailment in Poland (by 5%), Lithuania (by 23%) and Latvia (by 21%).

SLCD Benefits - 2030 - Distributed Energy



SLCD Benefits - 2040 - Distributed Energy



SLCD Benefits - 2050 - Distributed Energy

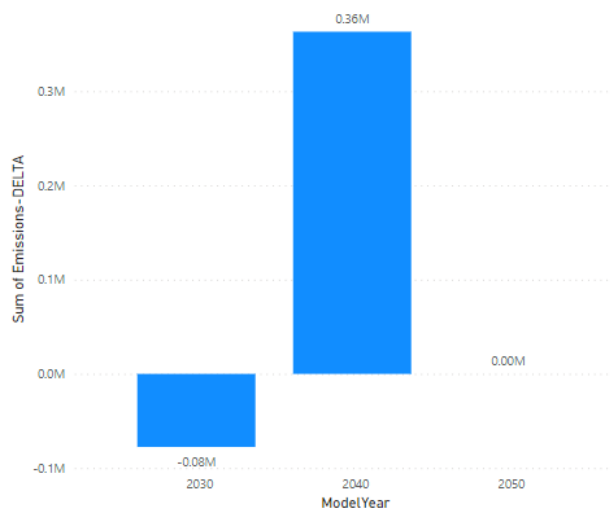


Global Ambition

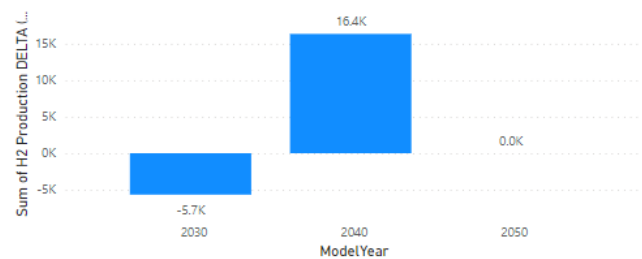
Sustainability benefits

In the reference case, the project group will contribute to sustainability by reducing overall CO₂ emissions by 80 kt in 2030. The project group will enable replacement of blue hydrogen supplies and, therefore, will reduce natural gas imports, with different hydrogen supply sources. However, in 2040, triggered by the higher hydrogen demand assumed for Global Ambition Scenario project group will increase overall CO₂ emissions. The new interconnections between the three Baltic States and Poland enable these countries to further cooperate avoiding demand curtailment. As all green hydrogen supply sources (both locally produced and imported) are already used at their maximum capacity, an increase in blue hydrogen (i.e. SMR) is needed to satisfy the hydrogen demand in 2040 to avoid demand curtailment.

CO₂ Emissions-DELTA (t)

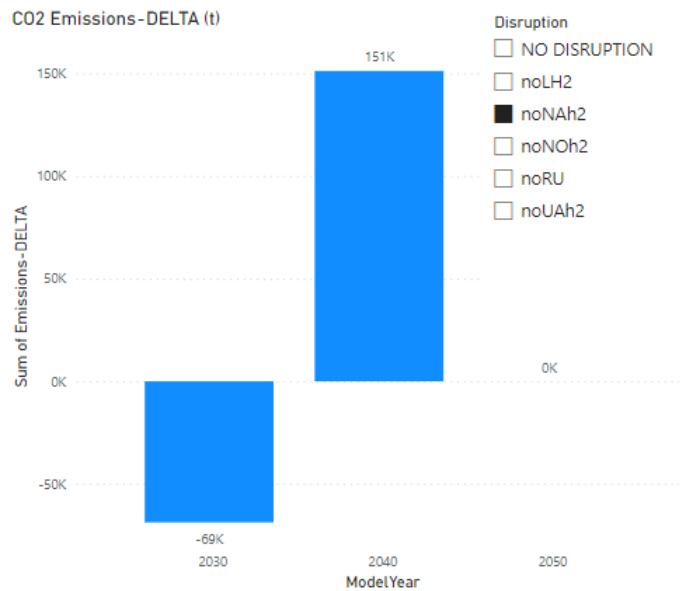
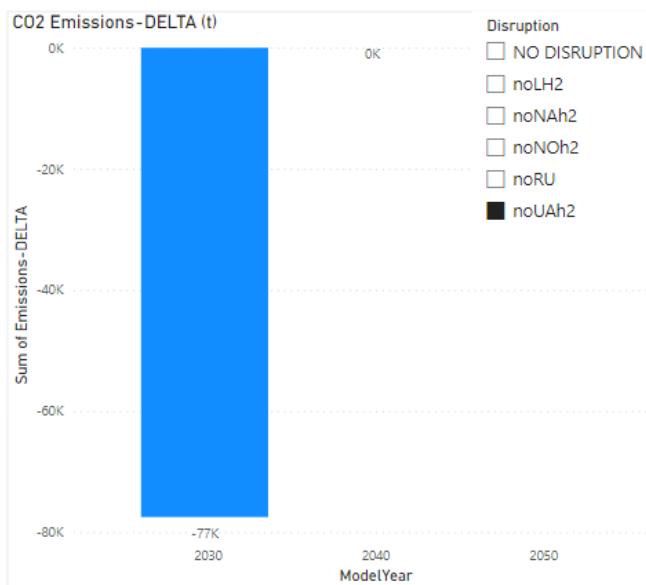
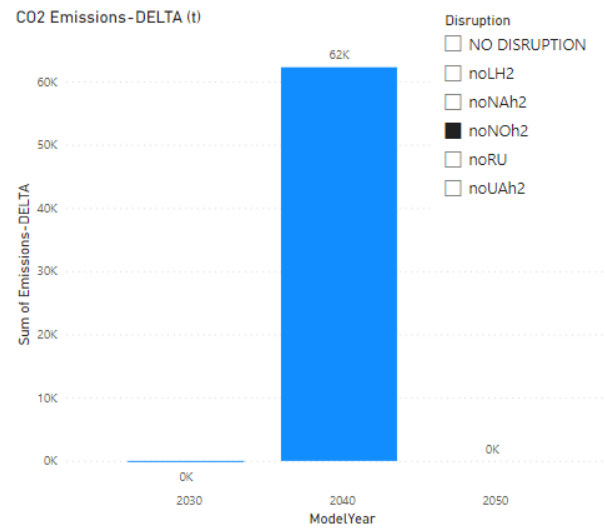
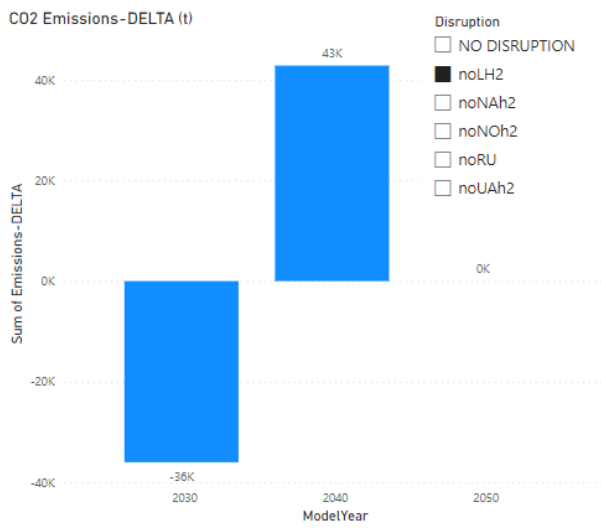


H₂ Production DELTA (GWh) by ModelYear



Similar trend for sustainability benefits is observed under different supply disruption cases (such as LH₂, North African or Ukrainian imports). Under disruption of Norwegian supplies, no reduction of CO₂ emissions is expected in 2030, as it is assumed that Norway is the main supplier of blue hydrogen imports.

1 noLH₂ : LH₂ disruption / 2 noNOh₂ : Norway disruption / 3 noUAh₂ : Ukraine disruption / 4 noNAh₂ : North Africa disruption



Security of supply benefits

> Reference case

2030 GA- Benefits



2040 GA- Benefits



2050 GA- Benefits



With the implementation of the project group, which creates new interconnections between Estonia, Latvia and Lithuania for both flow directions, allowing hydrogen to flow from Finland to Baltic States and from Poland to Baltic States.

In the reference case, the project group partially mitigates the risk of hydrogen demand curtailment during average winter and fully mitigates the risk of demand curtailment during average summer in Poland, Lithuania and Latvia in 2040 and 2050. Compared to DE demand scenario, where the risk of demand curtailment is lower, in GA demand scenario the project group will contribute to mitigate a higher risk of demand curtailment in the above mentioned countries.

> Climatic Stress cases

In addition to the security of supply benefits described for reference cases, additional security of supply benefits are expected under climatic stress cases (2-Week Cold Spell, 2-Week Dunkelflaute and in Peak Day), where due to the higher hydrogen demand the projects group will also mitigate risk of demand curtailment in Latvia, Lithuania and Poland in 2030.

> Disruption cases (S-1)

Similarly to the yearly reference case, under supply disruption cases, the project group will enable cooperation between the Baltic States and Poland, allowing hydrogen supplies to reach Poland. Project group reduces the risk of demand curtailment in PL, LT and LV in 2040 and 2050, no benefit is foreseen in 2030 as average yearly demand can be satisfied with the available hydrogen supply.

Compared to the yearly reference case where no supply disruption is considered, the contribution of the project group to the reduction of the risk of demand curtailment is lower, due to the limited supply available.

Maps for specifics disruptions: 1 noLH2 : LH2 disruption / 2 noNOh2 : Norway disruption / 3 noUAh2 : Ukraine disruption/ 4 noNAh2 : North Africa disruption

Supply disruption case: **No LH2/ No NOH2/ No UAH2/ No NAH2**

2030 GA- Benefits



2040 GA- Benefits



2050 GA- Benefits



> **SLCD**

In case of single largest capacity disruption, the project group mitigates the risk of demand curtailment in 2030 in Poland, (by 14%), Lithuania (by 16%), Latvia (by 47%) and Estonia (by 2%), in 2040 in Poland (13%), Lithuania (13%) and Latvia (18%) and in 2050, the project group mitigates the risk of demand curtailment in Poland (10%), Lithuania (9%) and Latvia (12%).

SLCD Benefits - 2030 - Global Ambition



SLCD Benefits - 2040 - Global Ambition



SLCD Benefits - 2050 - Global Ambition



C.2 Quantitative benefits [ENTSOG]

The following tables display all the benefits quantified by ENTSOG through specific security of supply and sustainability indicators.

CO2 Emissions:

ModelYear	Disruption	Scenario	Unit	Emissions-DELTA	Emissions-PLUS	Emissions-MINUS
NO						
2030	DISRUPTION	DE	tonne	-180657,86	538677299	538857956,9
2030	noLH2	DE	tonne	-133996,21	540175890,2	540309886,4
2030	noNAh2	DE	tonne	-155298,91	539785356,1	539940655
2030	noNOh2	DE	tonne	-56452,61	538877197,8	538933650,4
2030	noUAh2	DE	tonne	-157218,36	539378771,9	539535990,3
NO						
2030	DISRUPTION	GA	tonne	-77564,38	592910448,4	592988012,8
2030	noLH2	GA	tonne	-35997,29	594817481,2	594853478,5
2030	noNAh2	GA	tonne	-68782,16	594141433,2	594210215,3
2030	noNOh2	GA	tonne	-190,24	593310994,3	593311184,5
2030	noUAh2	GA	tonne	-77497,26	593627617,9	593705115,2
NO						
2040	DISRUPTION	DE	tonne	-199450,54	392077044	392276494,6
2040	noLH2	DE	tonne	-77212,20	392213883,4	392291095,6
2040	noNAh2	DE	tonne	-139187,80	392188097,7	392327285,5
2040	noNOh2	DE	tonne	-132471,94	392144022,6	392276494,6
2040	noUAh2	DE	tonne	-71713,55	392399182,9	392470896,4
NO						
2040	DISRUPTION	GA	tonne	363185,76	396523251,6	396160065,9
2040	noLH2	GA	tonne	42825,02	397455196,7	397412371,7
2040	noNAh2	GA	tonne	151269,18	397301976,6	397150707,5
2040	noNOh2	GA	tonne	62272,30	397450977,1	397388704,8
2040	noUAh2	GA	tonne	0,00	397478498,3	397478498,3
NO						
2050	DISRUPTION	DE	tonne	0,00	232557734,8	232557734,8
2050	noLH2	DE	tonne	0,00	232557734,8	232557734,8
2050	noNAh2	DE	tonne	0,00	232557734,8	232557734,8
2050	noNOh2	DE	tonne	0,00	232557734,8	232557734,8
2050	noRU	DE	tonne	0,00	232557734,8	232557734,8
2050	noUAh2	DE	tonne	0,00	232557734,8	232557734,8
NO						
2050	DISRUPTION	GA	tonne	0,00	228306706,5	228306706,5
2050	noLH2	GA	tonne	0,00	228306706,5	228306706,5
2050	noNAh2	GA	tonne	0,00	228306706,5	228306706,5
2050	noNOh2	GA	tonne	0,00	228306706,5	228306706,5
2050	noRU	GA	tonne	0,00	228306706,5	228306706,5
2050	noUAh2	GA	tonne	0,00	228306706,5	228306706,5

	NO					
2030	DISRUPTION	DE	tonne	-238722,13	538551906,7	538790628,9
2030	noLH2	DE	tonne	-142135,85	539337441,5	539479577,4

Curtailement Rate (SLCD):

Country	2030-DE-DELTA	2030-GA-DELTA	2040-DE-DELTA	2040-GA-DELTA	2050-DE-DELTA	2050-GA-DELTA
Latvia	-35%	-47%	-24%	-18%	-21%	-12%
Lithuania	-25%	-16%	-17%	-13%	-23%	-9%
Poland	-24%	-14%	-14%	-13%	-5%	-10%
Belgium	0%	0%	-1%	0%	-1%	0%
Bulgaria	0%	0%	-1%	0%	0%	0%
Croatia	0%	0%	-1%	0%	0%	-1%
Czechia	0%	0%	-1%	-1%	-2%	-1%
Germany	0%	0%	-1%	0%	-1%	0%
Hungary	0%	0%	-1%	0%	0%	-1%
Portugal	0%	0%	-1%	0%	0%	-1%
Slovakia	0%	0%	-1%	0%	0%	0%
Slovenia	0%	0%	-1%	0%	-1%	0%
Switzerland	0%	0%	-1%	0%	-1%	0%
France	0%	0%	-1%	0%	-1%	0%
Greece	0%	0%	-1%	0%	0%	0%
Italy	0%	0%	0%	0%	-1%	0%
Sweden	0%	0%	0%	0%	-1%	0%
Romania	0%	0%	0%	0%	0%	-1%
Finland	0%	0%	0%	0%	-1%	0%
Austria	0%	0%	0%	0%	-1%	-1%
Cyprus	0%	0%	0%	0%	0%	0%
Denmark	0%	0%	0%	0%	-1%	0%
Estonia	-4%	-2%	0%	0%	-1%	-4%
Ireland	0%	0%	0%	0%	0%	0%
Luxembourg	0%	0%	0%	0%	0%	0%
Malta	0%	0%	0%	0%	0%	0%
Serbia	0%	0%	0%	0%	0%	0%
Spain	0%	0%	0%	0%	-1%	-1%
The Netherlands	0%	0%	0%	0%	-1%	0%

Curtailement Rate (Climatic Stress):

SimulationPeriod	Country	2030-DE-DELTA	2030-GA-DELTA	2040-DE-DELTA	2040-GA-DELTA	2050-DE-DELTA	2050-GA-DELTA
Average2W	Austria	0%	0%	0%	0%	0%	0%
Average2W	Belgium	0%	0%	0%	0%	0%	0%
Average2W	Bulgaria	0%	0%	0%	0%	0%	0%
Average2W	Croatia	0%	0%	0%	0%	0%	0%

Average2W	Cyprus	0%	0%	0%	0%	0%	0%
Average2W	Czechia	0%	0%	0%	0%	0%	0%
Average2W	Denmark	0%	0%	0%	0%	0%	0%
Average2W	Estonia	0%	0%	0%	0%	0%	0%
Average2W	Finland	0%	0%	0%	0%	0%	0%
Average2W	France	0%	0%	0%	0%	0%	0%
Average2W	Germany	0%	0%	0%	0%	0%	0%
Average2W	Greece	0%	0%	0%	0%	0%	0%
Average2W	Hungary	0%	0%	0%	0%	0%	0%
Average2W	Ireland	0%	0%	0%	0%	0%	0%
Average2W	Italy	0%	0%	0%	0%	0%	0%
Average2W	Latvia	-23%	-10%	-12%	-18%	0%	-6%
Average2W	Lithuania	-23%	-10%	-14%	-13%	-5%	-9%
Average2W	Luxembourg	0%	0%	0%	0%	0%	0%
Average2W	Malta	0%	0%	0%	0%	0%	0%
Average2W	Poland	-23%	-10%	-13%	-14%	-4%	-9%
Average2W	Portugal	0%	0%	0%	0%	0%	0%
Average2W	Romania	0%	0%	0%	0%	0%	0%
Average2W	Serbia	0%	0%	0%	0%	0%	0%
Average2W	Slovakia	0%	0%	0%	0%	0%	0%
Average2W	Slovenia	0%	0%	0%	0%	0%	0%
Average2W	Spain	0%	0%	0%	0%	0%	0%
Average2W	Sweden	0%	0%	0%	0%	0%	0%
Average2W	Switzerland	0%	0%	0%	0%	0%	0%
Average2W	The Netherlands	0%	0%	0%	0%	0%	0%
Average2W	United Kingdom	0%	0%	0%	0%	0%	0%
Average2WDF	Austria	0%	0%	0%	0%	0%	0%
Average2WDF	Belgium	0%	0%	0%	0%	0%	0%
Average2WDF	Bulgaria	0%	0%	0%	0%	0%	0%
Average2WDF	Croatia	0%	0%	0%	0%	0%	0%
Average2WDF	Cyprus	0%	0%	0%	0%	0%	0%
Average2WDF	Czechia	0%	0%	0%	0%	0%	0%
Average2WDF	Denmark	0%	0%	0%	0%	0%	0%
Average2WDF	Estonia	0%	0%	0%	0%	0%	0%
Average2WDF	Finland	0%	0%	0%	0%	0%	0%
Average2WDF	France	0%	0%	0%	0%	0%	0%
Average2WDF	Germany	0%	0%	0%	0%	0%	0%
Average2WDF	Greece	0%	0%	0%	0%	0%	0%
Average2WDF	Hungary	0%	0%	0%	0%	0%	0%
Average2WDF	Ireland	0%	0%	0%	0%	0%	0%
Average2WDF	Italy	0%	0%	0%	0%	0%	0%
Average2WDF	Latvia	-23%	-10%	-15%	-20%	0%	-6%
Average2WDF	Lithuania	-23%	-10%	-14%	-12%	-5%	-9%
Average2WDF	Luxembourg	0%	0%	0%	0%	0%	0%
Average2WDF	Malta	0%	0%	0%	0%	0%	0%
Average2WDF	Poland	-23%	-10%	-13%	-13%	-4%	-9%
Average2WDF	Portugal	0%	0%	0%	0%	0%	0%

Average2WDF	Romania	0%	0%	0%	0%	0%	0%
Average2WDF	Serbia	0%	0%	0%	0%	0%	0%
Average2WDF	Slovakia	0%	0%	0%	0%	0%	0%
Average2WDF	Slovenia	0%	0%	0%	0%	0%	0%
Average2WDF	Spain	0%	0%	0%	0%	0%	0%
Average2WDF	Sweden	0%	0%	0%	0%	0%	0%
Average2WDF	Switzerland	0%	0%	0%	0%	0%	0%
Average2WDF	The Netherlands	0%	0%	0%	0%	0%	0%
Average2WDF	United Kingdom	0%	0%	0%	0%	0%	0%
DC	Austria	0%	0%	0%	0%	0%	0%
DC	Belgium	0%	0%	0%	0%	0%	0%
DC	Bulgaria	0%	0%	0%	0%	0%	0%
DC	Croatia	0%	0%	0%	0%	0%	0%
DC	Cyprus	0%	0%	0%	0%	0%	0%
DC	Czechia	0%	0%	0%	0%	0%	0%
DC	Denmark	0%	0%	0%	0%	0%	0%
DC	Estonia	0%	0%	0%	0%	0%	0%
DC	Finland	0%	0%	0%	0%	0%	0%
DC	France	0%	0%	0%	0%	0%	0%
DC	Germany	0%	0%	0%	0%	0%	0%
DC	Greece	0%	0%	0%	0%	0%	0%
DC	Hungary	0%	0%	0%	0%	0%	0%
DC	Ireland	0%	0%	0%	0%	0%	0%
DC	Italy	0%	0%	0%	0%	0%	0%
DC	Latvia	-22%	-13%	-15%	-17%	0%	-7%
DC	Lithuania	-22%	-13%	-14%	-12%	-6%	-8%
DC	Luxembourg	0%	0%	0%	0%	0%	0%
DC	Malta	0%	0%	0%	0%	0%	0%
DC	Poland	-21%	-12%	-14%	-12%	-5%	-9%
DC	Portugal	0%	0%	0%	0%	0%	0%
DC	Romania	0%	0%	0%	0%	0%	0%
DC	Serbia	0%	0%	0%	0%	0%	0%
DC	Slovakia	0%	0%	0%	0%	0%	0%
DC	Slovenia	0%	0%	0%	0%	0%	0%
DC	Spain	0%	0%	0%	0%	0%	0%
DC	Sweden	0%	0%	0%	0%	0%	0%
DC	Switzerland	0%	0%	0%	0%	0%	0%
DC	The Netherlands	0%	0%	0%	0%	0%	0%
DC	United Kingdom	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.

TYNDP Code	Type of infrastructure	Surface of impact	Environmentally sensitive area
HYD-N-1122	n.a	n.a	n.a
HYD-N-1280	n.a	n.a	n.a
HYD-N-1239	n.a	n.a	n.a

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

Environmental Impact explained [Promoter]

The status of each project section in the group is at the beginning of pre-feasibility phase. Environmental impact assessment for each project has not yet started. The preparation of Environmental Impact documents will be carried out in accordance with the applicable Environmental Law of Latvia, Lithuania and Estonia, adopted in accordance with EU legislation.

E. Other benefits [Promoter]

Missing benefits are all benefits of a project which may be not captured by ENTSG analysis.

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

Description of Other benefits [Promoter]

The BEMIP HYD 3 is part of a large scale hydrogen transmission network in the Nordic - Baltic Hydrogen Corridor. The Nordic - Baltic Hydrogen Corridor as a whole and with the latest supply potential estimates will guarantee the supply of substantial volumes of low-cost renewable hydrogen from the Nordic and East Baltic region to the Central Europe. It will strengthen the regions energy security as well as will reduce the dependency on imported fossil energy and contribute to REPowerEU ambitions to make full use of domestically produced hydrogen when decarbonising EU economies. The implementation of the Nordic - Baltic Hydrogen Corridor will significantly contribute to the creation of a strong hydrogen market region enabling access to competitive renewable energy resources that are abundantly available in the countries around the Baltic Sea.

The hydrogen produced in the region and delivered by the Nordic-Baltic Hydrogen Corridor, including projects within BEMIP HYD 3, will provide an adequate supply basis for various industries as well as for transport sector.

The Nordic-Baltic Hydrogen Corridor will stimulate market processes among producers, consumers, and trading companies that may participate in the hydrogen markets across Finland, Estonia, Latvia, Lithuania, Poland, Germany, and beyond. As a result, it has the potential to accelerate the development of an integrated hydrogen market within the European Union.

BEMIP HYD 3 group's projects being within the Nordic-Baltic Hydrogen Corridor will be key to make full use of the storage potential of hydrogen that is particularly beneficial for power grids as it allows for renewable energy to be kept not only in large quantities, but also for long periods of time. This means that hydrogen will help to improve the flexibility of energy systems in the Nordic and Baltic regions by balancing out supply and demand when there is either too much or not enough power being generated, helping to boost energy efficiency throughout the EU.

BEMIP HYD 3 group's projects within the Nordic-Baltic Hydrogen Corridor project will support development of integrated energy and hydrogen markets in the Baltic Sea region, enable access to developing geological hydrogen storages in the Baltics and Central Europe, therefore it may significantly contribute to strengthening European energy independence, security of supply, energy system resilience and flexibility, market integration and promotion of renewable energy production within the EU.

F. Useful links [Promoter]

Useful links:

www.elering.ee

www.conexus.lv

www.ambergrid.lt