CEE Bankwatch Network submissions to the 2nd PCI/PMI list consultation

25/04/2025

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Estonia

1. Enefit Green's Hydrogen Production in the Baltic States

This project should not be awarded PCI status due to lack of concrete plans and one of the offtakers being a proposed 'hydrogen-ready' fossil gas power plant, which would increase fossil gas consumption in Estonia, which is directly in violation of the sustainability criteria.

This project is not mentioned in any of Estonia's relevant energy or hydrogen strategies. Although renewable hydrogen production is a welcome initiative, the offtakers outlined in the proposal are not reliable due to the current earliest possible stage of development (an idea). Similar to this project, the potential offtakers' projects are just a concept. The hydrogen-ready power plant (which is essentially a fossil gas power plant) referred to as one of the offtakers has not reached any meaningful stage to evidence its existence (FID, permitting). The plan to use this hydrogen for a hydrogen-ready gas power plant is deeply problematic and should not be the first order use of hydrogen (Energy Efficiency First principle). In addition, it is unclear whether the imaginary plant would use the renewable hydrogen directly for power generation, which is a wildly inefficient use of hydrogen, and whether it would be blended with fossil gas, which is is a waste of renewable hydrogen. Integrating renewable hydrogen into power production will also have massive negative impacts on the end consumer in terms of cost, so it has to be carefully studied, to validate that this is indeed the most cost-optimal solution.

It is also questionable why both offtakers would be in Estonia, if the hydrogen consumption in Lithuania is projected to be higher than that of Estonia, and supply is expected to be in deficit. Thus it makes little sense for the more cost-efficient option (consuming hydrogen near point of production) to be discarded for higher cost cross-border transport to a country with lower expected hydrogen demand. It seems like a poor excuse to validate the necessity of the NBHC.

Due to the concept's very early stage, it is very unlikely that parts of the project are able to comply with the additionality principle. The hydrogen production in Lithuania is unlikely to come online before 1st January 2028, when additionality principle takes effect, as electrolyser projects larger than 10 MW from design phase to production have been reported to take 5 years at the very least. Even that figure is ambitious, considering it will be the first electrolyser of such a large-scale in the region, facing additional hurdles as any pioneering technology does. By that time, the wind farms named in the project will have been online for longer than 36 months, making them ineligible to use in order to comply with the additionality principle and label the produced hydrogen as RFNBO origin.

While the Estonian part of the project theoretically may be able to comply with the additionality requirement if the planning processes are started in sync with the development of the wind park, the offtakers of this project are not developed. There is a clear lack of concrete plans.

2. Nordic-Baltic Hydrogen Corridor – EE, LT, LV sections

This project should not be awarded PCI status due to lack of concrete plans for sufficient hydrogen production to utilise the infrastructure and the security concerns regarding built infrastructure in the Baltic Sea.

The Nordic-Baltic Hydrogen Corridor is referred to very briefly in the Estonian, Latvian and Lithuanian NECPs. None of them identify financing, merely stating that the 'European Hydrogen Backbone' initiative aims to analyse the need and potential of building a pan-European hydrogen infrastructure, as it is not determined yet. Thus, the countries have not adopted any expected hydrogen demand or supply relating to cross-border hydrogen infrastructure into their energy or hydrogen strategies.

In the Estonian draft NECP, hydrogen is discussed mainly from the obligation derived from RED for hydrogen refuelling stations and from the perspective of R&D. Hydrogen Backbone is referenced from the perspective of gas TSOs initiative. In the Estonia hydrogen roadmap, the period until 2030 is viewed as time dedicated to hydrogen pilot testing and research, which will be determined where hydrogen can be best used, with the roadmap mentioning transport and industry as sectors which require further analysis. The Estonian hydrogen roadmap assumes the production capacity of hydrogen produced from renewables to be anywhere between 2000 to 40 000 tons by 2030, while the new national energy strategy draft predicts the start of national hydrogen production for 2034 at the earliest. The latest draft NECP assumes 50 GWh green hydrogen production by 2030. These wide margins of expected production capacity reflect the vast amount of unpredictability of the development of hydrogen and renewable electricity markets and capacities, calling into question any validity of a feasibility study, which will gather together 'non-binding supply and demand indications'.

Furthermore, Estonia's target to produce 100 per cent of its electricity consumption from renewable energy by 2030 is not currently on track due to issues with funding, transmission network limitations and long duration of planning processes. Thus, it is not realistic to assume that there will be excess renewable energy or sufficient renewable hydrogen production capacity for exporting renewable hydrogen.

Whilst the project provides sufficient proof of cooperation with neighbouring countries and network operators, seeing as the entire concept of European Hydrogen Backbone was created by the network operators themselves, however it is not clear how there is 'sufficient proof of existing plans'. While the public does not have access to the pre-feasibility study to allow us to determine what demand and supply methodology the study relies on, the summary of the study states "Nordic-Baltic Hydrogen Corridor is the solution to connect indigenous clean hydrogen potential and new demand together to meet ambitious goals". The word "potential" should not be enough to warrant the building of a minimum EUR 8.5 billion transport infrastructure. It should connect existing production to existing demand, the evidence of which is unfortunately missing.

The only sufficient proof of existing plans should be connecting financially viable production projects in development supplied by additional renewable energy, with existing offtakers, with concrete plans to switch existing fuel to renewable hydrogen.

Another consideration when building hydrogen offshore pipelines in the Baltic Sea is infrastructure security, based on recent incidents involving deliberate damage to critical subsea infrastructure in the Baltic Sea.

In December 2024, the Estlink 2 power cable connecting Finland and Estonia, was damaged in what Finnish authorities suspect was a deliberate act of sabotage by an oil tanker which is linked to Russia. The tanker allegedly dragged its anchor across the seabed, severing the cable and disrupting power supply between the two countries. The damage led to a significant reduction in cross-border electricity capacity and is expected to take months and cost tens of millions of euros to repair and has caused higher energy prices in the Baltics.

In October 2023, the Balticconnector gas pipeline connecting Finland and Estonia ruptured, when a Chinese container ship, allegedly intentionally dragged its anchor across the seabed, damaging the pipeline and associated telecommunications cables. Given the recent targeted attacks on subsea infrastructure in the region, constructing a subsea hydrogen pipeline between Finland and Estonia raises significant concerns over security. The pipeline would be susceptible to similar risks of sabotage, which could disrupt the hydrogen supply, cause financial losses, and escalate geopolitical tensions in the region.

There are too many assumptions, relating to low price of excess renewable energy from offshore projects that are not even through approval or planning stages, in countries which still use fossil fuels for electricity and struggle to keep up with grid expansion. It is deeply concerning that this project that is yet to validate it is even needed, might reach the PCI status and cannibalise the limited public resources that Baltic countries should prioritise using to improve and expand their grids.

Hungary

3. Firefly

This project should not be awarded the PCI status due to its less-advanced maturity status, lack of crucial details necessary to determine whether the projects fulfil sustainability criteria, and its hydrogen export plans that undermine fulfilling domestic hydrogen needs.

Hungarian data in the PCI/PMI hydrogen needs assessment are not in line with existing strategic documents, and the methodology of how they were estimated is unclear. According to the needs data, hydrogen production in 2040 is 1846.8 GWh. According to our calculation, this covers about a third of the current hydrogen production in Hungary of about 5000 GWh, mostly by fossil gas hydrogen. According to Hungary's updated NECP (adopted October 2024), 2030 hydrogen production target is 1188 GWh, produced by a combination of renewable energy, nuclear energy and fossil gas with CCS. NECP (2024)

and Hungary Hydrogen Strategy (2021) do not contain target or projections for the hydrogen production in 2040.

According to the needs data, demand is 9405 GWh in 2040. This estimate is 170% of the estimate 5500 tonnes of the Hungarian National Hydrogen Strategy (NHS), for all types of hydrogen, and higher than any modelling published. The NHS is currently being revised. Updated NECP (2024) does not contain information about the imports of hydrogen by 2030, while the data for 2040 is missing. According to the NHS, Hungarian hydrogen production targets by 2030 are 20 000 tonnes/year of so-called 'low-carbon' hydrogen and 16 000 tonnes/year of renewable and other 'carbon-free' (also nuclear) hydrogen, as well as installing 240 MW electrolyser capacity by 2030. Existing production in Hungary is 160 000 tonnes of exclusively grey hydrogen (based on 2020 data). Regarding electrolysers, 13.5 MW production capacity has been installed so far (3 Proton Exchange Membrane electrolysers). This falls drastically short of the electrolyser capacity target by 2030 outlined in the NHS.

The Firefly electrolyser project is not part of any national strategic documents or the TYNDP. From the aspect of reducing fossil gas hydrogen production, the project could contribute to the goals of the NHS, to replace fossil gas hydrogen with renewable hydrogen. The NHS foresees demand for 20 000 tonnes of fossil gas hydrogen in 2030 instead of 25 000 tonnes used in 2020 for the refinery sector. The 105 MWhel (100-120 MW presented on the Hydrogen PCI/PMI East meeting on 14 April 2025) makes up almost half of the national renewable hydrogen production by 2030 (240 MW).

The oil refinery 'Danube', owned by the project promoter MOL Plc., is part of the so-called 'Transdanubia hydrogen ecosystem'. We support the focus on the replacement of existing fossil gas hydrogen use with renewable hydrogen. However, this prolongs fossil fuels use as it contributes to the future operation of an oil refinery. Also, the proposal does not consider the decrease in demand for fertilizers and refined products, and efficiency of hydrogen use. It is important to note that the produced hydrogen must be transported to the refinery via a new hydrogen pipeline which has not yet been built. According to the proposal, the electrolyser is dependent on the implementation of a section of the HU/SK pipeline (Vecsés-Ősi section, which has no link to the HU/SK border).

The proposal to export domestically produced renewable hydrogen through the other section of the proposed corridor (Vecsés-Balassagyarmat/SK border) is questionable at minimum as Hungary's domestic hydrogen/RFNBO needs are not covered by the production. It contradicts proposing the export of the majority of the hydrogen produced (percentage not given), when local consumption should be given priority.

While the project's description states it will contribute to CO2 emission reduction, it fails to provide exact figures. Although the concrete location of the electrolyser plant is not

available, it is already known that the project is planned to be implemented as a greenfield investment. Instead, brownfield investment should be promoted. There is no publicly available information on whether the promoter assessed and prioritised this when choosing the electrolyser plant's location. According to the proposal, the electricity used for the electrolysis would be 'certified renewable electricity' and coming from the grid. It does not plan to use additional renewable energy sources.

4. HU/SK hydrogen corridor
5. HU/RO hydrogen corridor
6. HU/SI hydrogen corridor

This project should not be granted the PCI status due to lack of evidence proving its contribution to sustainability and its role in the security of supply, and due to its limited renewable hydrogen production capacities, lack of national strategic coherence.

Hungarian data in the PCI/PMI hydrogen needs assessment are not in line with existing strategic documents, and the methodology of how they were estimated is unclear. According to the needs data, hydrogen production in 2040 is 1846.8 GWh. According to our calculation, this covers about a third of the current hydrogen production in Hungary of about 5000 GWh, mostly by fossil gas hydrogen. According to Hungary's updated NECP (adopted October 2024), 2030 hydrogen production target is 1188 GWh, produced by a combination of renewable energy, nuclear energy and fossil gas with CCS. NECP (2024) and Hungary Hydrogen Strategy (2021) do not contain target or projections for the hydrogen production in 2040.

According to the needs data, demand is 9405 GWh in 2040. This estimate is 170% of the estimate 5500 tonnes of the Hungarian National Hydrogen Strategy (NHS), for all types of hydrogen, and higher than any modelling published. The NHS is currently being revised. Updated NECP (2024) does not contain information about the imports of hydrogen by 2030, while the data for 2040 is missing. According to the NHS, Hungarian hydrogen production targets by 2030 are 20 000 tonnes/year of so-called 'low-carbon' hydrogen and 16 000 tonnes/year of renewable and other 'carbon-free' (also nuclear) hydrogen, as well as installing 240 MW electrolyser capacity by 2030. Existing production in Hungary is 160 000 tonnes of exclusively grey hydrogen (based on 2020 data).

Regarding electrolysers, 13.5 MW production capacity has been installed so far (3 Proton Exchange Membrane electrolysers). This falls drastically short of the electrolyser capacity target by 2030 outlined in the NHS.

The Hungarian TYNDP2024 (approved February 2025) includes three of the four PCI projects promoted by Hungary: the HU/SK (commissioning date: 2030), HU/RO (2030), and HU/SI (2035) hydrogen corridors. TYNDP proposes to establish 4 hydrogen corridors to connect the HU gas transmission system to the so-called 'European Hydrogen Backbone' (EHB) 'based on the evolution of domestic and transit (import/export) hydrogen consumption needs and the domestic hydrogen producers' injection needs'. No further details of the project proposal or needs assessment are known.

It has to be noted that the HU TYNDP2024 contains significant changes compared to the TYNDP2022 as far as hydrogen corridors are concerned: First, 6 hydrogen corridors, each of them converted gas pipelines, were proposed in TYNDP2022, of which 4 corridors are considered in TYNDP2024 (3 new, 1 repurposed). The transmission routes of the proposed HU/SI and HU/SK corridors were also altered. Thus, we cannot exclude assuming further drop in the number of corridors and changes in the proposed routes. These 'Hydrogen corridors' projects have not been approved by the HU Energy Authority (MEKH) (due to lack of competence/mandate) but the MEKH 'supports these investments' further annual review", which is a common procedure for projects planned to be implemented in the medium term (beyond 4 years). Thus, although the proposals are part of the TYNDP2024, they are not at all approved projects by Hungarian authorities.

The updated NECP (2024), only contains general statements on Hungary aiming to play a regional transit role in the EHB and establishing import routes for its hydrogen needs. However, no further details are part of the NECP, either on these specific hydrogen corridors, or the calculation of hydrogen needs. (The latter is also not available in any of national strategies).

Hungary's National Energy Strategy 2030 (with an outlook to 2040), approved in 2020 (but to be updated to be in line with NECP), foresees the repurposing of underutilised gas pipelines (below 10 per cent of utilization rate) to hydrogen. The Hungarian TSO's plan regarding the hydrogen transmission system is unclear. On the one hand, the current PCI proposal would add three new hydrogen pipelines to the region's energy network. On the other hand, strategies discuss hydrogen blending to the national gas transmission system.

We must emphasize that the only relevant national strategic document that is actually up-to-date is the NECP, and it contains no details on the TSO-promoted hydrogen corridors, even the names of the proposed hydrogen routes, although it was approved by the government in October 2024. This may signal the uncertainty of national decisionmakers on the necessity extensive hydrogen infrastructure, and possibility of becoming stranded assets. All the more so because the Hungarian National Hydrogen

Strategy approved in 2021 is outdated, and its update is due in 2025, but there is no public timeline on the process.

We believe that no hydrogen corridor project proposal should qualify as PCI project until the National Hydrogen Strategy is updated and consulted with the public. The gas TSO's proposals that are based on non-binding, non-transparent market surveys and without approval from the national energy authority should not precede national strategic decisions on extensive infrastructure that could become stranded assets.

Despite the HU/RO and HU/SK hydrogen corridors proposals being categorised as "advanced", there are no concrete plans available to the public, and basic information on the potential for their use that would back their PCI status is missing. Furthermore, the proposed HU/SI hydrogen corridor must not receive the PCI status either due to the proposal's maturity status is "less-advanced", and the commissioning date is at the earliest in 2035. Regarding HU/SK hydrogen corridor, building the (Vecsés-Balassagyarmat/SK border, 92 km) section of the pipeline is quite questionable as Hungary has no net export potential.

The hydrogen corridor projects build on the assumption that enough hydrogen will be produced and transported via the pipelines. (The HU/SK and HU/RO proposals claim 926 000 tonnes/year (100 GWh/day) of bidirectional capacity of hydrogen; HU/SI proposal: 278 000 tonnes/year). While all three corridors mention domestic production as a source for the hydrogen, that would only be 39,5000 tonnes/year by 2030, and they mostly build on uncredible assumptions of more economically viable hydrogen imports from distant 3rd country sources where hydrogen must be transported hundreds or even thousands of kilometres, like North Africa and South-East direction.

There is no guarantee that the assumed hydrogen sources will materialise in the next decades or what type of hydrogen will be imported, raising concern about the environmental sustainability of these imports and provide the hydrogen needed to sufficiently utilise the pipelines. If built, these hydrogen corridors risk becoming stranded assets even before transporting any hydrogen whatsoever. There is a lack of a credible analysis and evidence on the economic viability of hydrogen pipelines at various utilization rates.

The proposed hydrogen corridors do not meet sustainability criteria under Annex IV (5) a) of TEN-E Regulation due to the fact that there is no credible assessment of GHG reductions they might support for various scenarios. While for example utilising renewable hydrogen in hard-to abate sectors can potentially reduce greenhouse gas emissions, several factors may reduce this positive impact. Due to its properties, hydrogen has a significant leakage rate when transported at long distances, which leads to extensive energy losses. Since renewable hydrogen will not be available at

economically viable prices within the next decades, there is a high probability that fossil-based hydrogen will be used instead.

Hungary, while seeking to diversify fossil gas imports, still brought more than 8.6 billion cubic metres of pipeline fossil gas from Russia in 2024. This poses significant energy security risk for the region, with neighbouring countries (e.g. SK, UA) highly dependent on HU exports.

Poland

7. Pomeranian Green Hydrogen Cluster

This project should not be granted the PCI status since there is no evidence to prove it will in any way contribute to sustainability and security of supply or play any role in market integration or competition while it may have the opposite effect.

GAZ-SYSTEM has not yet published a TYNDP for hydrogen infrastructure. Neither Poland nor any of Polish energy companies have plans to move away from fossil gas in the power sector by 2050. Similarly, they do not foresee a significant reduction in domestic gas demand. 'Polish Hydrogen Strategy until 2030 with an outlook until 2040' adopted in states that in the first few years, hydrogen would be primarily transported by road and rail (tankers, tank trucks). Only when customer demand for hydrogen increases, existing gas infrastructure or dedicated hydrogen pipelines will be used.

Draft of the new Polish NECP presented for consultations in November 2024 includes 'support for the initiative to build hydrogen infrastructure' but Poland will express 'interest in this and possible other cross-border projects should they be assessed as legitimate for Poland'. Polish NECP draft clearly states that the strategic decision regarding economic and energy security rationale for potential import of hydrogen will be made after PHS is updated.

The reliability of the data Polish project proponents provided for the PCI/PMI process is questionable, specifically the current and projected hydrogen demand in Poland. Meeting the targets of the RED III directive alone will require considerable increase in domestic ambitions concerning RFNBO production and hydrolyser capacities by 2030. According to the draft of the Polish NECP, Poland will need approximately 315 000 tonnes of RFNBO hydrogen in 2030 (and 16.7 TWh of renewable electricity for its production). Poland does not have any target for hydrogen demand or production in 2035 or 2040, renewable or other.

Poland has no hydrogen export potential. Given the significant increase in energy demand due to electrification of the economy and the planned domestic electrolyser capacity target of only 2GW by 2030, it is unrealistic to expect that Poland will have enough excess renewable energy to produce renewable hydrogen in the next two decades. It must be noted that GAZ-SYSTEM did not submit any projects related to production of renewable hydrogen (electrolysers). No Polish electrolyser project have been submitted to the PCI list.

Results of the market screening procedure (Hydrogen Map of Poland) conducted by GAZ-SYSTEM are not a reliable, unbiased source of data for projection of hydrogen production and demand in Poland. The production capacity and future hydrogen demand presented by GAZ-SYSTEM are based on the non-binding market screening Hydrogen Map of Poland. They are purely declarative, the survey was confidential and did not require from the participants any evidence that the project they submitted were viable. Only a general summary of the results was published, making the process unverifiable and transparent. The 'colour' of hydrogen was not considered important, only answers related to hydrogen production required information on methods of hydrogen production. However, the summary of the result contains no information on the amount of hydrogen produced by particular methods, and it is never stated that the production capacities relate to RFNBO. The demand and output capacities estimations provided by responders are not based on any evidence, the vast majority of the projects submitted is on primarily analysis stage and may not even reach FID. The demand and output projections are not in line with any Polish strategic documents or RED III targets and are grossly overestimated.

We are seriously concerned that the demand projections - based on declarations with no substance that are much higher that any other presented in Polish strategic documents and exceed production capacities assessed in the survey at least twofold - may be used to justify the necessity to build vast hydrogen import infrastructure by the very company conducting said survey. This would not only constitute a blatant conflict of interest but could also disturb the Polish hydrogen market which is at an incredibly early stage of development e.g., deployment of import infrastructure a priori determines that Poland would depend on imports (which may well turn out to not be feasible at all). This in turn could disincentivise deployment of domestic production capacities. This is a strategic choice of fundamental importance for national security, which has not yet been made, and which is not within the competence of the project Promoter, but also affects the Polish hydrogen market.

According to current GAZ-SYSTEM standards, the average duration of the investment process (design and construction) of 100 km long pipeline is approx. 5-7 years. It is thus highly unlikely that a project with no feasibility study until 31.01.2026 will be

commissioned in 2029. There is no evidence that with limited domestic production capacities Poland has any hydrogen export potential, thus there is no rationale for the cross-border interconnection with Germany (this also applies to the project H2T-N-1315 submitted by GASCADE, Germany, which aims is the project will serve for importing hydrogen produced in Poland).

8. Hydrogen Highway – Northern Section

This project should not be granted the PCI status since there is no evidence to prove it will in any way contribute to sustainability and security of supply or play any role in market integration or competition while it may have the opposite effect.

GAZ-SYSTEM has not yet published a TYNDP for hydrogen infrastructure. Neither Poland nor any of Polish energy companies have plans to move away from fossil gas in the power sector by 2050. Similarly, they do not foresee a significant reduction in domestic gas demand. 'Polish Hydrogen Strategy until 2030 with an outlook until 2040' adopted in states that in the first few years, hydrogen would be primarily transported by road and rail (tankers, tank trucks). Only when customer demand for hydrogen increases, existing gas infrastructure or dedicated hydrogen pipelines will be used.

Draft of the new Polish NECP presented for consultations in November 2024 includes 'support for the initiative to build hydrogen infrastructure' but Poland will express 'interest in this and possible other cross-border projects should they be assessed as legitimate for Poland'. Polish NECP draft clearly states that the strategic decision regarding economic and energy security rationale for potential import of hydrogen will be made after PHS is updated. The reliability of the data Polish project proponents provided for the PCI/PMI process is questionable, specifically the current and projected hydrogen demand in Poland. Meeting the targets of the RED III directive alone will require considerable increase in domestic ambitions concerning RFNBO production and hydrolyser capacities by 2030. According to the draft of the Polish NECP, Poland will need approximately 315 000 tonnes of RFNBO hydrogen in 2030 (and 16.7 TWh of renewable electricity for its production). Poland does not have any target for hydrogen demand or production in 2035 or 2040, renewable or other.

Poland has no hydrogen export potential. Given the significant increase in energy demand due to electrification of the economy and the planned domestic electrolyser capacity target of only 2GW by 2030, it is unrealistic to expect that Poland will have enough excess renewable energy to produce renewable hydrogen in the next two decades. It must be noted that GAZ-SYSTEM did not submit any projects related to

production of renewable hydrogen (electrolysers). No Polish electrolyser project have been submitted to the PCI list.

Results of the market screening procedure (Hydrogen Map of Poland) conducted by GAZ-SYSTEM are not a reliable, unbiased source of data for projection of hydrogen production and demand in Poland. The production capacity and future hydrogen demand presented by GAZ-SYSTEM are based on the non-binding market screening Hydrogen Map of Poland. They are purely declarative, the survey was confidential and did not require from the participants any evidence that the project they submitted were viable. Only a general summary of the results was published, making the process unverifiable and transparent. The 'colour' of hydrogen was not considered important, only answers related to hydrogen production required information on methods of hydrogen production.

However, the summary of the result contains no information on the amount of hydrogen produced by particular methods, and it is never stated that the production capacities relate to RFNBO. The demand and output capacities estimations provided by responders are not based on any evidence, the vast majority of the projects submitted is on primarily analysis stage and may not even reach FID. The demand and output projections are not in line with any Polish strategic documents or RED III targets and are grossly overestimated.

We are seriously concerned that the demand projections - based on declarations with no substance that are much higher that any other presented in Polish strategic documents and exceed production capacities assessed in the survey at least twofold - may be used to justify the necessity to build vast hydrogen import infrastructure by the very company conducting said survey.

9. Baltic Sea Hydrogen Collector - tie-in to the Polish system

This project should not be granted the PCI status since there is no evidence to prove it will in any way contribute to sustainability and security of supply or play any role in market integration or competition.

It has not been included in any Polish strategic documents or in TYNDP. This project is not even 'less-advanced' - there have only been initial discussions on the potential of building a branch line to Poland. While GAZ-SYSTEM claims average duration of the investment process of 100 km long pipeline is approx. 5 - 7 years, the stated commission date is 2031. It should not even be considered a candidate PCI project yet.

10. Damasławek Hydrogen Storage

This project should not be granted the PCI status since there is no evidence to prove it will in any way contribute to sustainability and security of supply or play any role in market integration or competition while it may have the opposite effect.

This project aims at partially storing fossil based ‘blue’ hydrogen which means it will enable continuous use of fossil fuels, fossil gas in particular, and contribute to emissions of CO2 and CH4. The so-called blue hydrogen produced from fossil gas with CCS must not be supported as it entails signifficant GHG emissions and its carbon footprint is higher that the emissions resulting from burning fossil gas for heating.

GAZ-SYSTEM’s Ten-Year Development Plan for years 2026-2035 submitted for public consultations in March 2025 concerns only gas infrastructure, development of Nordic-Baltic Hydrogen Corridor and national hydrogen transmission and distribution system and hydrogen storage is mentioned. GAZ-SYSTEM has not yet published a TYNDP for hydrogen infrastructure. This project is listed in GAZ-SYSTEMs TYDP of 2024 as a gas storage facility; there is no information on GS website suggesting a decision was made to develop a hydrogen storage instead. The storage capacity and storage demand presented by GAZ-SYSTEM are based on the market screening Hydrogen Map of Poland and are purely declarative, the survey was confidential and did not require from the participants any evidence that the project they submitted were viable.

Draft of the new Polish NECP presented for consultations in November 2024 includes ‘Support for the implementation of the ‘Programme for the development of hydrogen storage in salt caverns to strengthen Poland's critical infrastructure’ which aims to map the potential of technical hydrogen storage in salt caverns. No such analysis has been published to date.

Currently, Poland does not have a valid, up-to-date hydrogen strategy nor have any analysis been published that would provide reliable projections of future domestic hydrogen production/demand or justify implementation of the hydrogen transmission infrastructure projects.

Decisions concerning implementation of hydrogen infrastructure projects must not precede publication of Polish NECP (expected in June 2025) and actualization of the Polish Hydrogen Strategy (PHS), including public consultation of the document.

11. Nordic-Baltic Hydrogen Corridor - PL section

This project should not be granted the PCI status since there is no evidence to prove it will in any way contribute to sustainability and security of supply or play any role in market integration or competition while it may have the opposite effect.

GAZ-SYSTEM's Ten-Year Development Plan for years 2026-2035 submitted for public consultations in March 2025 concerns only gas infrastructure, development of Nordic-Baltic Hydrogen Corridor and national hydrogen transmission and distribution system and hydrogen storage is mentioned. GAZ-SYSTEM has not yet published a TYNDP for hydrogen infrastructure.

The Polish section of the Nordic-Baltic Hydrogen Corridor runs almost parallel to the Poland – Lithuania gas interconnector, a gas pipeline project which had been granted the PCI status in the past. Its promoter declared that it would be repurposed for hydrogen transmission but has since changed their plans citing the necessity to use Polish gas infrastructure for gas transmission in the next 20+ years. Neither Poland nor any of Polish energy companies have plans to move away from fossil gas in the power sector by 2050. Similarly, they do not foresee a significant reduction in domestic gas demand.

'Polish Hydrogen Strategy until 2030 with an outlook until 2040' adopted in 2021 includes support for the Nordic-Baltic Hydrogen Corridor. However, according to the strategy, in the first few years, hydrogen would be primarily transported by road and rail (tankers, tank trucks). Only when customer demand for hydrogen increases, existing gas infrastructure or dedicated hydrogen pipelines will be used. The document is under revision.

Draft of the new Polish NECP presented for consultations in November 2024 includes 'support for the initiative to build a Nordic-Baltic Hydrogen Corridor' and for hydrogen infrastructure. However, it concludes that Poland will express 'interest in this and possible other cross-border projects should they be assessed as legitimate for Poland'. Polish NECP draft clearly states that the strategic decision regarding economic and energy security rationale for potential import of hydrogen will be made after PHS is updated.

Decisions concerning implementation of hydrogen infrastructure projects must not precede publication of Polish NECP (expected in June 2025) and actualization of the Polish Hydrogen Strategy (PHS), including public consultation of the document. Inclusion of this project provokes our serious concerns that: a) the decision to implement this project had not been based on any robust analysis of its compatibility with national needs and goals b) national strategic documents such as the NECP and PHS are considered secondary to GAZ-SYSTEM's investment plans.

According to the draft of Polish NECP, Polish priority is to build domestic production capacity due to the limited availability of hydrogen in neighboring countries (caused by the transformation taking place in these countries), as well as the risk of being dependent on imports in an undeveloped market.

The reliability of the data Polish project proponents provided for the PCI/PMI process is questionable, specifically the current and projected hydrogen demand in Poland. Currently, Poland does not have a valid, up-to-date hydrogen strategy nor have any analysis been published that would provide reliable projections of future domestic hydrogen production/demand or justify implementation of the hydrogen transmission infrastructure projects.

Poland has no hydrogen export potential. Given the significant increase in energy demand due to electrification of the economy and the planned domestic electrolyser capacity target of only 2GW by 2030, it is unrealistic to expect that Poland will have enough excess renewable energy to produce renewable hydrogen in the next two decades. It must be noted that GAZ-SYSTEM did not submit any projects related to production of renewable hydrogen (electrolysers). No Polish electrolyser project have been submitted to the PCI list. Meeting the targets of the RED III directive alone will require considerable increase in domestic ambitions concerning RFNBO production and hydrolyser capacities by 2030.

The following information on hydrogen demand presented on 16 December 2024 at the Hydrogen and electrolysis cross-regional meeting (pages 113-114 in the presentation) are incorrect: Polish production and consumption estimated at 1.1 million tonnes/year, current hydrogen demand 1 300 000 tonnes - both refer to current non-RFNBO hydrogen production capacity while production=consumption = 0, 73 mt; 2030 hydrogen demand 193 634 tonnes refers to so-called ‘low-carbon’ hydrogen demand by 2030 set in the ‘Polish Hydrogen Strategy until 2030 with an outlook to 2040’ which is outdated, and not in line with RED III targets and should not be used for infrastructure planning or in the PCI process. According to the draft of the Polish Energy and Climate Plan, the maximum domestic production of RFNBO hydrogen in 2030 is expected to reach 156 000 tonnes. With 4 GW electrolyser capacity by 2040, production could reach 420 00 tonnes, though there is no such target in NECP.

No Polish strategic document provides any information regarding hydrogen production capacity for 2035 or 2040 and we consider the data provided by ENTSOG IGI report untransparent and unreliable. Hydrogen imports were not included in the projections of the Polish NECP scenario ‘due to the high uncertainty of the feasibility of hydrogen imports'. Polish hydrogen demand in 2040 presented in the table ‘TEN-E PCI/PMI H2 need data 2024-2025 exercise version 3 March 2025 is also not credible. There is no source for this figure which is especially concerning given that this value does not align with any data from the outdated PHS or draft NECP and that Poland does not have any target for hydrogen demand or production in 2035 or 2040, renewable or other.

According to the draft of the Polish NECP, Poland will need approximately 315 000 tonnes of RFNBO hydrogen in 2030 (and 16.7 TWh of renewable electricity for its production). An infrastructure project of such magnitude, which will have long-lasting impact on the economy of the region and national policy must comply with the highest standards of transparency and accountability, yet this case is anything but.

The confidential character of the prefeasibility study of the Nordic-Baltic Hydrogen Corridor (NBHC) prevents independent assessment of key conditions, assumptions, and results, in particular the projections of hydrogen production and demand and analysis of costs and benefits of this project. This makes the study unverifiable, which is against the very basic principles of transparency and public participation and create the risk of directing public funds to an unnecessary, ill-designed project which will disturb domestic hydrogen economy, policies and generate stranded assets as well as interfere with the order of shaping national policies which should determine and precede investment choices and not be dictated by them.

Romania

12. Giurgiu Nădlac hydrogen corridor with new H2 interconnector

13. New hydrogen pipeline from Black Sea area to Podișor

This project should not be awarded the PCI status due to lack of crucial details necessary to determine whether the projects fulfil sustainability criteria, and the high likelihood of the projects becoming stranded assets due to competing parallel pipelines and limited renewable hydrogen production capacity that falls short of targets.

Both projects are part of the Ten-Year Network Development plan of Transgaz and ENTSOG. TYNDP projects that these two pipelines will be commissioned already in 2030, which clearly will not happen, while the current estimate for their construction is at EUR 3.3 billion for both projects. In addition, the TYNDP of Transgaz foresees the repurposing of already existing BRUA and under construction Tuzla-Posidor gas pipeline, to integrate hydrogen by 2040, at the cost of EUR 660 million, on the exact same route as the new hydrogen infrastructure presented for 7th PCI list. This plan to build two parallel networks is clearly uneconomical and lead to this infrastructure becoming a stranded asset. The repurposed gas pipelines are not part of the ENTSO-G TYNDP.

Transgaz's plans are also included in the National Hydrogen Strategy, according to which hydrogen pipelines will connect Romania, Bulgaria, Hungary and the Republic of

Moldova by 2030. One of the objectives of the strategy is the Development of the strategy of the Technical Operator of the National Natural Gas Transmission System Transgaz (Multiannual Network Development Plan) for the coupling of hydrogen valleys and industrial centers with the integrated hydrogen pipeline transport system at EU level (Hydrogen Backbone). The strategy identifies five future 'hydrogen valleys' where most of the consumption and production should take place, and four of those valleys are planned along the pipelines route.

The strategy mentions the need to blend hydrogen and fossil gas for the 'short term', but it does not provide any information on the blending (shares of each of these two fuels in a blend) and it does not provide a time period for how long it will be necessary to use the gas-hydrogen mix. It is not clear if the Strategy refers to the existing gas pipelines (operating and under construction) or the planned ones as part of the 'Hydrogen Backbone'. However, we can assume that the intention is to carry blends by 2030 rather than a 100 per cent hydrogen. The Strategy does not provide information on when a 100 per cent hydrogen transport is possible. Due to the lack of details that define the blend, and the lack of a concrete timeline of when the pipelines will abandon blending and carry pure hydrogen, these projects seem to be in violation of point 1 of Article 31 of the TEN-E Regulation, which states the transitional period for infrastructure to allow hydrogen blended with gas to end on 31 December 2029. Current details do not ensure that this will be the case.

The proposed PCI projects are mentioned in the NECP, P&M 78 – Development of new infrastructure for hydrogen transport, with no additional information. The NECP also contains P&M 77 – Upgrade of natural gas infrastructure for hydrogen transport, which include the same routes mentioned above and others, in total value of over EUR 3.3 billion, to be commissioned after 2040.

Romania recently adopted the National Hydrogen Strategy, which estimates a domestic renewable hydrogen demand of 152,900 tonnes by 2030 – equivalent to 5045 GWh/year. According to the Strategy, to reach this level of production, Romania must construct a total capacity of 2130 MW of electrolyzers and 4261 MW of renewable energy sources. It is already clear that these targets cannot be met by 2030. The strategy estimates that this will lead to a reduction of 2 million tonnes of CO2 emissions. Romania plans to use the produced hydrogen for the needs of industry: fertilisers and refineries 37 per cent, transport 47 per cent and steel production 15 per cent. It is highly concerning that almost 50 per cent of this production would serve the transport sector. The current estimate for these investments in electrolysers and additional renewable capacity is EUR 4.75 billion.

According to the Strategy, the estimated hydrogen demand for HIEast – of which the two pipeline projects are part of - is 53 TWh, 179 TWh and 260 TWh annually by 2030,

2040 and 2050 respectively. The estimated production is 22.1 TWh,151 TWh, and 183 TWh annually by 2030, 2040 and 2050 respectively. According to our calculation, Romania can cover 22 per cent of the production by 2030 and 9.4 per cent of the demand in the best-case scenario. But by now, Romania has allocated EUR 650 million of public funding for the construction of 160 MW of electrolysers. This means that the funding is secured for only 7.5 per cent of the planned electrolysers capacity. To our knowledge, Romania hasn't yet applied or secured other sources of funding for this infrastructure.

The PCI/PMI needs data projects for Romania in 2040, a hydrogen demand of 37,722 GWh, and a national production of 7092 GWh, with the rest of the demand being covered by imports pipelines. However, in the Romanian National Hydrogen Strategy the estimates are done only for 2030, and the Strategy does not provide any information or modelling on the demand and production after the 2030 period. Therefore, it is unclear where the source of these estimations in the PCI/PMI needs data table is coming from and how it was estimated. The projected demand for 2040 in the PCI/PMI needs data table is 7.5 fold higher than the estimated demand for 2030 in the National Hydrogen Strategy. From our point of view it is highly unlikely that Romania will reach the projected hydrogen electrolysers production capacity by 2030 which means that these proposed hydrogen pipelines will not be used.

Moreover, we believe that for the kind of applications proposed in the strategy, especially concerning industry, localised production close to the points of consumption should be a priority for the 2030-2040 horizon, instead of building massive transport pipelines. Electrolysers supported via Recovery and Resilience Facility (RRF) in Romania (for the refineries and other infrastructure companies) are proof that localised production is preferable to transport routes.

Another risk is the clash of pipeline projects after 2040. As we stated above, plans are to build and operate two separate pipelines along the same route – dedicated hydrogen pipeline, and the existing gas pipeline which will supposedly transport a hydrogen blend. It is unclear how this transition from gas to hydrogen will happen, and it is highly unlikely that the dedicated hydrogen pipeline, proposed as PCI, is necessary. A different scenario could be that the gas pipeline will continue to deliver only gas, so the question arises if this hydrogen will actually reduce emissions or will it satisfy additional energy needs? In any of these scenarios there is a risk of stranded assets that needs to be considered. Either one of these pipeline risk becoming an economic burden if the other one is built and continues to operate.

It is impossible to estimate the contribution of these two pipeline projects to greenhouse gas (GHG) emissions reduction, because there is no publicly available data on quantities of hydrogen transported, proportions and extent of fossil gas blending,

capacity and type of connected hydrogen production, and details on offtakers. The National hydrogen strategy estimates a 2 million tonnes GHG emissions reduction based on the proposed electrolysers' capacity, but it cannot be attributed to these transport pipelines. Since the electrolysers supported from the Recovery and Resilience Facility (RRF) are targeted to produce hydrogen for local consumption, there is no hydrogen production capacity that may serve the long-distance transport.

All things considered, we estimate that these projects are not technically and economically feasible. Valued at least EUR 3.3 billion, these proposed hydrogen pipelines, which are nearly worth as much the intended production capacity (EUR 4.7 billion), are at risk of becoming stranded assets. An investment of at least EUR 3.3 billion for only theoretical emissions reductions that lack crucial details must not be supported with a PCI status. Member States should instead focus on localised hydrogen production near the centres of consumption. Another important aspect to consider are the imports of hydrogen through this hydrogen corridor. Romania's strategy assumes to produce only renewable hydrogen. It is questionable when the 3rd country imports will happen, what type of hydrogen will be imported and how it will contribute to the Romania’s decarbonisation efforts.

In conclusion, these two projects – Giurgiu Nădlac hydrogen corridor with new H2 interconnector and the New Hydrogen pipeline from Black Sea area to Podișor - should not receive the PCI status. Long-distance cross-border hydrogen transport should only be taken under consideration when the scalability and financial viability of hydrogen production is evidenced by functional local projects which clearly have cross-border trade capacity. This is currently not the case. Since Romania has a limited financial capacity to support hydrogen electrolysers, these funds should be directed to localised production and consumption, rather than to long distance transport.