

Investments in E40 waterway are doomed to fail, say expert reports

*Evaluations of E40 waterway proposals
reveal unacceptably high risks and costs*



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Summary

Expert economic assessments have laid bare the huge capital expenditure, investment risks, and societal consequences from the proposed development of the E40 waterway.

In February 2022, an analysis published by the consultancy *Langhout Ecologisch Advies* showed that the E40 waterway in Poland will never be able to recoup the immense costs of its construction. The Polish section, which requires construction of a new channel, is fundamental for the operation of E40 as an international waterway. The Ukrainian Ministry of Infrastructure has already stated that they would only proceed with the project if the Polish section is implemented.

Even under optimistic forecasts, long-term (65 years) net losses from the construction of the Polish section of the E40 waterway are expected to far exceed €1 billion. The most likely variant of the waterway would result in a loss of more than €6.5 billion. The E40 waterway is simply too expensive for its potential benefits, with the cheapest variant of the Polish section costing at least €9.8 billion, and the most realistic one more than €12 billion. In addition, the proposed project competes with more sustainable forms of transport such as rail transport, which outperforms inland navigation in terms of cost to the environment. In reality the losses foreseen by the report could be much higher as transport infrastructure projections frequently end up costing more than anticipated.

An earlier economic analysis of the E40 waterway was published by the *Business Union of Entrepreneurs and Employers in Belarus* (BUEE) in February 2019. The BUEE report suggests that the true costs of the proposed E40 waterway are underestimated by at least €1 billion in Belarus and Ukraine, and documents the high financial, environmental and societal risks that come with carrying out a cross-country project in small sections.

Both reports reaffirm the need to invest instead in strategic improvements of existing rail and road infrastructure and to prioritize the development of modernized and sustainable electric railways.

A recent economic analysis¹ commissioned by the Polish government also shows that the E40 waterway will be economically unviable in Poland. Despite this, the authors of the Polish analysis recommend to proceed with the construction of the waterway. This analysis by the Polish government has not been made public and Save Polesia's partner in Poland only managed to obtain the analysis after a lengthy access to information challenge. The Save Polesia partnership considers it extremely concerning that decisions which may incur such immense costs on Polish and wider society are being made without a wider public debate, given the implications outlined by studies that have been commissioned using tax-payers money.

The reports have found that:

- There would be no economic benefits from the E40 waterway, and huge financial and environmental risks associated with the construction and maintenance of the route.
- A specific analysis of the E40 waterway section from Gdansk in Poland to Brest in Belarus revealed that the project would be a massive net drain on public funds.
- The reports reinforce economic analysis commissioned by the Polish government, which has found that the E40 waterway the project would be economically unprofitable in Poland.
- It is likely that the E40 waterway would compete with rail transport for the same goods. Shifting freight from rail to the waterway would lead to increased economic costs for society.
- The socio-economic and environment impacts of the E40 waterway, including damage to the natural environment, air pollution, and increases in greenhouse gas emissions, would be unacceptable.
- There are many investment risks associated with E40 waterway along its route, including radioactive contamination, and knock-on effects on the rail freight industries.
- There are better alternatives, including the modernisation of existing rail infrastructure.

¹ „Analysis of the inland water transport sector in the scope resulting from the modernization of the Odra Waterway and the Vistula River Waterway“ (Stage IV, full final report, Version 2, Warsaw, December 2018) performed by WYG International Sp. z o. o. commissioned by the Ministry of Maritime Economy and Inland Navigation

Background: Polesia and the E40 waterway

Polesia is a vast wilderness area stretching across Belarus, Poland, Russia and Ukraine². The E40 waterway³ is a transnational initiative aiming to link the Baltic and Black Seas by an approximately 2,000 km long navigable connection running from Gdansk in Poland to Kherson in Ukraine. This could have very serious impacts on the natural and cultural heritage and people of Polesia as well as more wide-ranging effects on economies and the global carbon balance.

Although the planning of E40 waterway is still at an early stage, a feasibility study was published in 2015⁴. This proposes that the route would go through the river systems of Vistula, Bug, Pina, Pripyat and Dnieper (see figure 1). Along the majority of its course it would go through free-flowing rivers, and several parts would need to be straightened, dammed, dredged, or drained. While some shipping channels already exist, the extent of the proposed new development is so massive that it threatens an environmental catastrophe in the region.

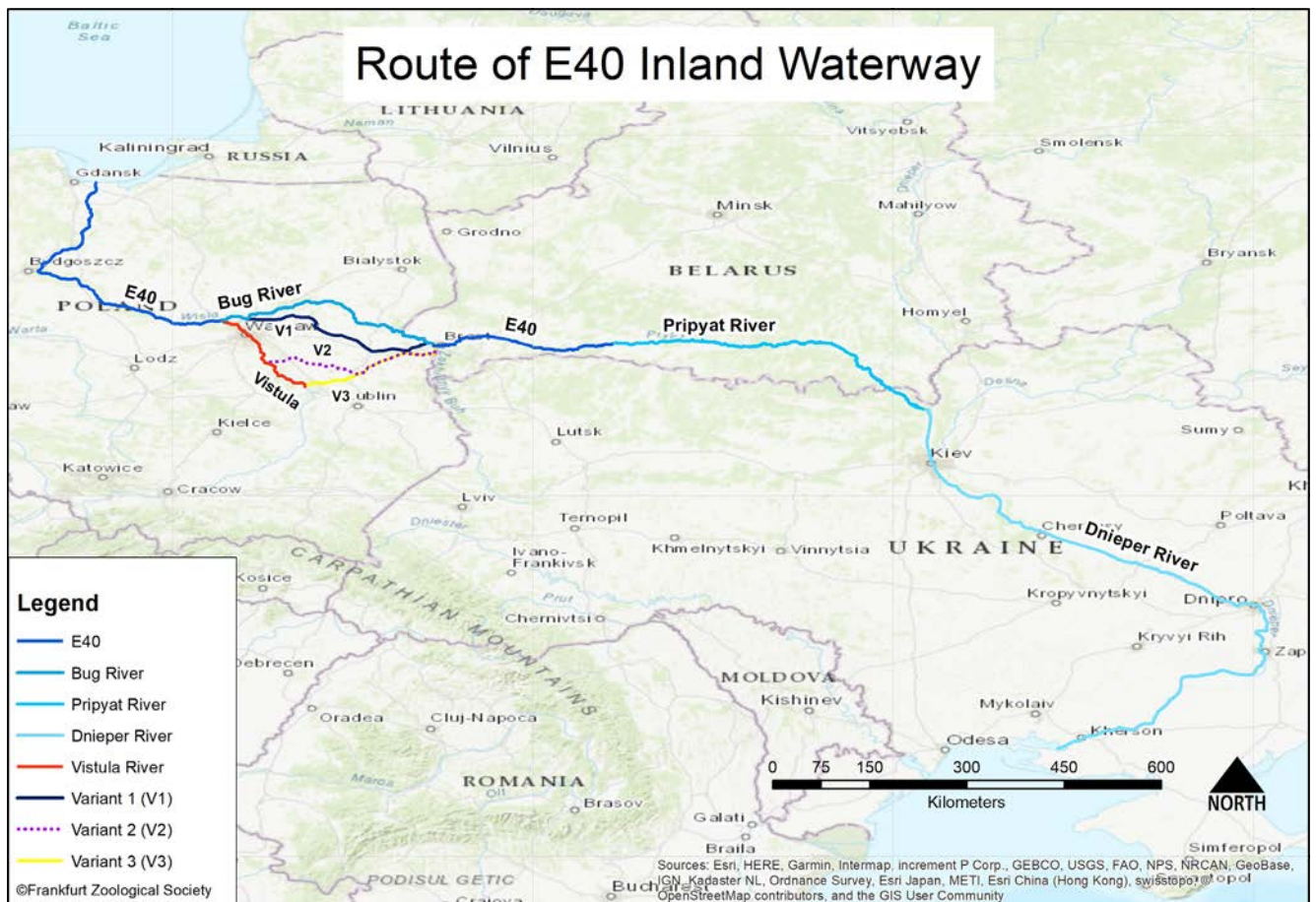


Figure 1. Overview of the E40 waterway and the river channels

² See factsheet "About Polesia – A unique wilderness of global importance"

³ See factsheet "Polesia under threat – How a new waterway could destroy Polesia's natural environment"

⁴ Maritime Institute in Gdansk (2015) Restoration of Inland Waterway E40 Dnieper – Vistula: from Strategy to Planning. Final Feasibility Study Report – Corrected Report (According to the remarks and requirements introduced by Willem Zondag, Legal and Technical Consultant). Gdansk, December 2015.

Expert studies

To better understand the potential impacts of the E40 waterway on Polesia, we commissioned two studies assessing the costs and benefits of the E40 waterway.

The first, published in February 2019, was carried out by experts from the *Business Union of Entrepreneurs and Employers*, based in Belarus⁵. The study addressed factors across the length of the E40 waterway including: hydrology, transport economics, radioactivity, and potential alternative development scenarios for Polesia, and gave a second opinion on the feasibility study by the Maritime Institute of Gdansk from 2015.

The second study, published in February 2022, was carried out by the consultancy *Langhout Ecologisch Advies*, based in the Netherlands. This report includes an in-depth cost-benefit analysis of a key section of the proposed E40 waterway running from Gdansk in Poland to Brest in Belarus. The analysis was finalized after an independent review by experts at *eftec*, a leading UK-based environment consultancy⁶.

What the assessments looked at in detail:

- The projected economic costs and benefits and their sensitivity to uncertainty;
- The competitiveness of the E40 waterway with road and rail transport;
- The overall social, economic and environmental impacts;
- The risks for investors implementing the project;
- The compatibility with key international transportation requirements;
- The potential alternatives.

Findings

There would be no economic benefits from the development of the E40 waterway as a whole

Having analysed the available data and compared it to other transport sector data, the experts concluded that the development of the entire E40 waterway does not have clear economic benefits. The analysis suggests that one section of the project in the lower reaches of the Dnieper river in Ukraine might provide some economic returns as long as inland water transport is not being subsidised by governments. However, there are many economic and environmental risks from development in all other sections of the E40 waterway, including in Ukraine upstream of the Kiev lock and the entire Belarusian and Polish sections.

The E40 waterway is expensive and could end up costing even more

Figures are included for some elements of the project and these amount to just over €12 billion, but some costs do not appear to have been taken into account and others appear to have been significantly undervalued. As a consequence, experts believe that investment cost for the development of the Ukrainian part of the Dnieper river is understated by almost €100 million. They also report that investment costs of the Belarusian section are likely to have been underestimated by at least €900 million. This suggests that the true costs of the programme will exceed €13 billion.

Experts also criticised the omission of external costs as a result of construction of the waterway. The construction of the E40 waterway would result in significant costs to society, including major damage to natural habitats and knock-on costs in provision of drinking water to urban areas. It also fails to account for the impacts of global heating and the need to respond to the climate crisis when estimating replacement investments.

⁵ Business Union of Entrepreneurs and Employers (2019) Economic Assessment of Reconstruction Plans for the Inland waterway E40. Minsk, February 2019.

⁶ Langhout Ecologisch Advies (2022) Cost-benefit analysis of the E40 waterway in Poland. Rotterdam, February 2022.

An in-depth analysis of the Polish section of the E40 waterway from Gdansk to Brest revealed that the project would be a massive drain on public money

As part of the cost-benefit analysis for the section of the waterway between Gdansk and Brest, expert analysis shows that all variations are economically unviable. The Economic Net Present Value indicates that the project would be heavily in the red in all variants. Even a best-case outcome would see losses over and above €1 billion. Experts believe that the shortfall would likely be much greater, with other scenarios putting losses above €6.5 billion. Any shift of cargo from rail to inland waterway transport could increase external costs, such as costs related to greenhouse gas emissions. The report concludes that the implementation of the E40 waterway is economically unprofitable and that it is not in the public interest for officials to continue with its construction.

Even over a period of 60 years and in the most optimistic scenario, the outlook is a significant loss. The report concludes that in no scenario will freight traffic on the E40 waterway be sufficient to offset the costs of constructing, operating, and maintaining the waterway, due to its high costs and competition with rail freight. The analysis points out that in its early years, the waterway can be affected by previously unforeseen aspects such as a shortage of ships and staff, adverse weather and hydrology conditions, and major logistics challenges.

The reports reinforce economic analysis commissioned by the Polish government, which found that the E40 waterway would be unprofitable in Poland

An economic analysis commissioned by the Polish government¹ concludes the E40 waterway would be economically unprofitable in the country. All variants result in a net economic loss for society. Despite the lack of sound economic reasons, the authors of this Polish analysis recommend proceeding with the construction of the E40 waterway, placing costs on Polish society that will far outweigh its benefits. This Polish official analysis has not been made public and Save Polesia's partner in Poland only managed to obtain it after a lengthy access to information challenge

The analysis for the Polish government highlights further issues associated with the E40 waterway in Poland:

- There would be additional high costs, in particular linked to the construction of new quays in ports and the need to adjust bridges for large ships.
- Locks can become a bottleneck, leading to transport delays and hence poor performance and higher costs.
- The Polish shipping fleet lacks capacity and is technically outdated. There are no modern ships and the older ships lack loading capacity and cannot handle some types of freight.

This information only became available after the 2022 report by *Langhout Ecologisch Advies* had been finalised. However, all indications suggest that the economic impacts will be even worse than currently projected and that the losses forecast are likely to be highly underestimated.

The Save Polesia partnership considers it extremely concerning that decisions which may incur such immense costs on Polish and wider society are being made without a wider public debate, given the implications outlined by studies that have been commissioned using tax-payers money.

Inland waterway transport takes a long time and is complicated

Experts found inland waterway transport to be performing poorly along the proposed E40 route due to low delivery speed, the presence of seasonal restrictions such as ice and low water, and additional transfers needed such as shifting cargo between ships to accommodate differences in the capacity of the channel. Between Gdansk and Brest, shipping takes 61 hours, while road transport takes only 13 hours and rail 19 hours.

The socio-economic and environment impacts of the E40 waterway would be unacceptable

Experts estimate that about 2,000 km² of land in Poland and Belarus, located mainly in the valleys of the Vistula and Pripjat rivers, could be threatened by hydrological changes. This could have significant impacts on water-dependent sectors of the economy, such as agriculture. In addition, protected areas would be damaged and the provision of essential ecosystem services such as flood control adversely affected.

New reservoirs forming part of the development could become additional sources of greenhouse gas emissions. Calculations show that on the Polish and Belarusian sections of the E40 waterway, emissions may exceed 600,000 tons of CO₂ per year. According to the assessment methods recommended by the European Commission, by 2050 the damage from such an impact on the climate could reach €150 million per year.

A further issue which needs to be considered is that the current Polish shipping fleet is seriously outdated, a fact highlighted by the analysis for the Polish government. A risk is that investors would import second-hand ships from Western Europe, which can be outdated and highly polluting.

There are numerous investment risks and economic threats associated with E40 waterway

Experts believe that significant investment costs and the risks of radioactive contamination from the Chernobyl exclusion zone make development of the whole E40 corridor unrealistic. In particular, they do not believe the planned construction of an intermediate port in Nizhny Zhary, Belarus, is a viable solution.

The economic assessment suggests that the E40 waterway would be uncompetitive in Belarus and Ukraine without subsidies. Experts also state that if subsidies were given for transport using the E40 waterway, there could be a significant reduction in revenue for existing rail and road transport companies, potentially leading to a crisis in these sectors. The experts point out that not charging ships fully for the use of the E40 waterway violates the 'user pays' principle and will transfer the costs of the development to taxpayers.

The E40 waterway would not get political support from the EU

Further plans for development of the E40 waterway conflict with the requirements for EU green financing. The waterway does not comply with EU requirements for environmental protection⁷ (such as the nature, water framework and environmental assessment directives⁸) and climate change commitments⁹. The recent analysis for the Polish government itself acknowledges that nature protection and Natura 2000 obligations are a problem for inland navigation.

There are better alternatives

The economic analysis in both reports and the Polish government's own analysis prove that the E40 waterway project implementation is unfavourable from the point of view of society. Shifting freight from rail to inland waterway transport will lead to increased economic costs for society.

Alternative investments make much more economic sense. The 2022 analysis by *Langhout Ecologisch Advies* indicates the clear potential for electrified rail transport as a better alternative to the E40 waterway. Increasing the capacity and speed as well as reducing the noise of railways is likely to be an economically viable investment. Other investments aiming at reducing external costs of roads, such as road safety and environmentally friendly vehicles, also should be explored.

In the experts' opinion, the following projects are of high importance and have significant potential for development:

- modernisation of border crossings and customs terminals;
- modernisation of railways in order to increase the capacity and speed of trains, and full electrification of the rail system throughout Ukraine to reduce external costs of rail freight;
- improving logistics infrastructure adapted to handle goods involved in cross-border trade.

⁷ TEN-T legal basis, available from https://ec.europa.eu/transport/themes/infrastructure/ten-t_en, in particular Regulation (EU) No 1315/2013.

⁸ Nature Directives available from https://ec.europa.eu/environment/nature/legislation/index_en.htm;

Water Framework Directive from https://ec.europa.eu/environment/water/water-framework/index_en.html; Environmental Impact Assessment and Strategic Environmental Assessment Directives available from https://ec.europa.eu/environment/eia/index_en.htm

⁹ Climate change strategies and targets available from https://ec.europa.eu/clima/policies/strategies_en

Who is Save Polesia?

Our coalition includes six organisations from four countries.



APB – Birdlife Belarus

APB's mission is the conservation of biological diversity for the benefit of present and future generations and involvement of people in active nature protection activities.

БАГНА

Bahna, Belarus

The aim of Bahna is to prevent further degradation of the environment and to preserve natural habitats and biodiversity of our country.



FZS – Frankfurt Zoological Society, Germany

FZS invests in wilderness areas of global significance – “legacy landscapes” – with aesthetic and natural values, pristine landscapes, important ecosystem processes or values, and endemic and endangered species.



NECU – National Ecological Centre of Ukraine

NECU is an NGO with branches in a dozen of Ukrainian cities. It works to bring environmental consideration into the core of any decision making.



OTOP – Polish Society for the Protection of Birds

OTOP's mission is to protect birds and their habitats and establish and manage new bird reserves. The organisation has strong educational work in order to increase public support for nature conservation.



USPB – Ukrainian Society for the Protection of Birds

USPB's mission is to conserve the biodiversity of Ukraine by saving birds, sites and biotopes.



Contact for more information

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