

HYPERLOOP AS PART OF SUSTAINABLE TRANSPORT IN EUROPE

INPUT FOR 2024 EUROPEAN PARLIAMENT ELECTIONS



22 August 2023



hyperloop
development
program



Key message

Resilient transport infrastructure is the backbone that connects people with each other, makes regions accessible, and powers the (re)industrialisation of Europe. Hyperloop will be a strong enabler of the transition to sustainable transport. Hyperloop networks can revolutionize transit, offering capacity for local, regional, national, and continental travel. We therefore recommend including hyperloop in the election program, with the aim to realize a full-size European hyperloop system that paves the way for one European standard, deployment across Europe, and the emergence of new industries across European regions.

The European Union is in need of more sustainable transport to reach its climate goals, and EU citizens should have access to a comfortable and responsible journey between European cities and regions. Eventually, a European hyperloop network will contribute to:

- **Social inclusion** by making amenities - including education, health care, and jobs - more accessible regardless of where EU citizens live.
- **Improved environment** through less emissions, reduced noise pollution and more habitat for wildlife.
- **Strong industry** in interconnected regions across Europe and an **attractive labor market** for employees and employers.

Building a stronger Europe

To narrow the gap between the Europe of politicians and the Europe of the people, cross-border mobility is essential. German Federal Transport Minister Volker Wissing has announced that the 49-euro 'Deutschland-Ticket', which entitles travelers to take buses and trains in local and regional transport throughout Germany, should also be valid in France. In July 2023, Deutsche Bahn published [a study](#) pleading for an extension of the European high-speed rail network from 11,000 km to 32,000 km. Both initiatives are commendable for interregional connections and long distances. We deem it important to stress that **innovative transport modes** - that offer increasingly reliable, comfortable and more environmentally friendly services - can further help to fill in the missing links to better connect Europeans with each other.

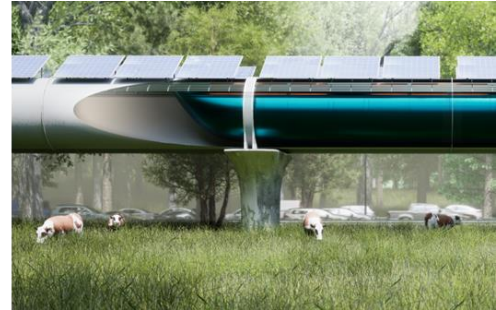
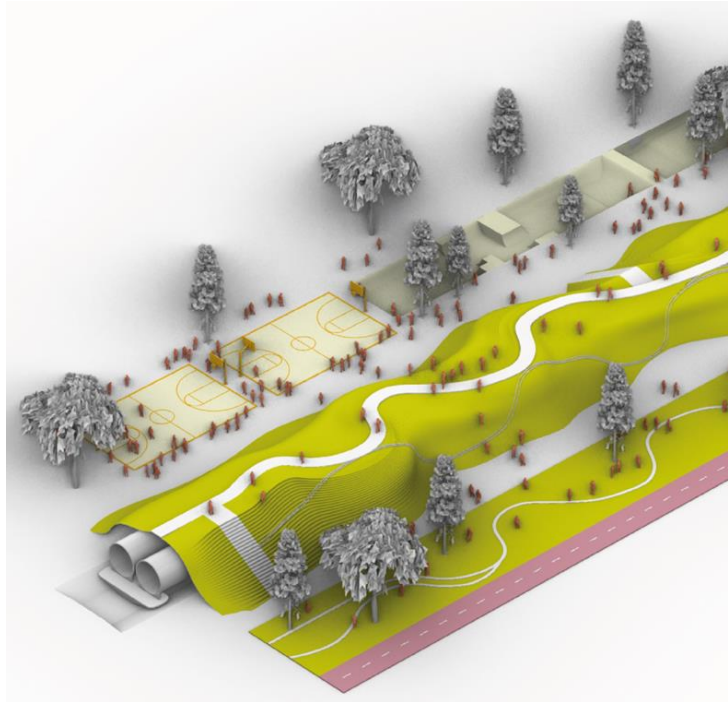
Furthermore, in view of the energy transition and Europe's global competitiveness, the EU's agenda keenly emphasizes (re)industrialization. The Net-Zero Industry Act aims to foster investments in Europe's strategic sectors, such as batteries, solar photovoltaics, and hydrogen electrolysis. The European Chips Act intends to spur development of a solid semiconductor supply chain. A strong **region-to-region transport system** could bridge distance with existing and emerging industry hubs in Europe.

Why hyperloop?

Hyperloop vehicles use magnetic levitation and propulsion to travel through tubes that are brought to low air pressure. This allows for energy efficient and high-capacity transportation of passengers and goods. Socio-economic benefits with hyperloop include better multimodal connections with reduced travel times, and improved access to education, health care and jobs across Europe, whilst also



strengthening the EU's strategic autonomy with a new hyperloop industry and improved access to various existing and emerging industries across Europe.



With its enclosed environment hyperloop infrastructure has a positive impact on the living environment of people and animals.

From policy to realization

In order to make hyperloop part of a cross-border multimodal transport system, the new modality must be integrated in EU policy. Incorporating hyperloop in European legislation is necessary to consolidate the European Union's leadership position in the emerging industry and implement hyperloop as a transport mode. In April 2023, the European Parliament has taken its position to embody hyperloop in article 44 of the **TEN-T regulation**. This inclusion will also support working towards a legislative proposal for a regulatory framework for hyperloop in 2024, as announced in the European Commission's 2023 work program. The **EU regulatory framework for hyperloop** will facilitate interoperability of hyperloop across Europe and will spur the convergence of technologies developed by various hyperloop technology developers. Standardization is already happening, albeit at a slow pace. Therefore, hyperloop in Europe needs a breakthrough.

Full-size European hyperloop system

The next essential step follows existing test & demonstration initiatives, such as the [European Hyperloop Center](#), with **a full-size hyperloop system for transportation of passengers and goods**. A new facility should include a track of at least 3 to 5 kilometers in length, which will be open to various technology developers and researchers in order to accelerate hyperloop development to a technology readiness level (TRL) that paves the way for deployment. To realize this potential, an estimated investment of 200 million € could make Europe frontrunner in the

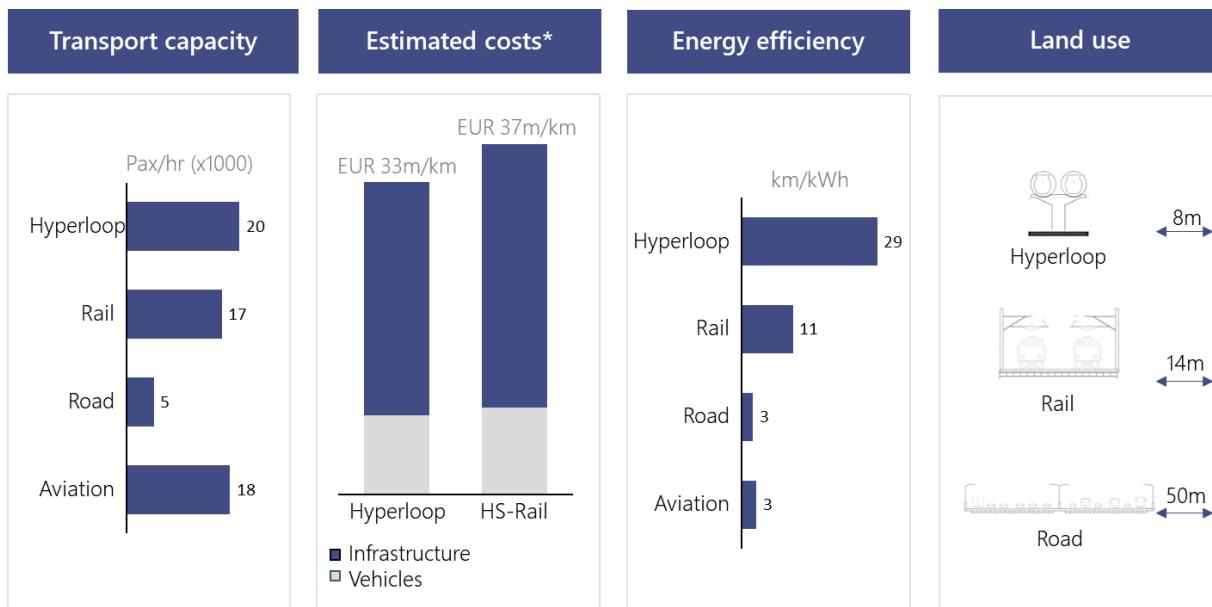


development: building a facility that enables the realization of hyperloop as a new transport mode for passengers and goods and one EU standard to be applied in the whole of Europe and beyond.

The Hyperloop Development Program calls for including hyperloop in the election program and to take the required steps to make available funds for a full-size European hyperloop system, of which the investment could be jointly covered by the European Union, its Member States, regional and local governments, and the private sector.

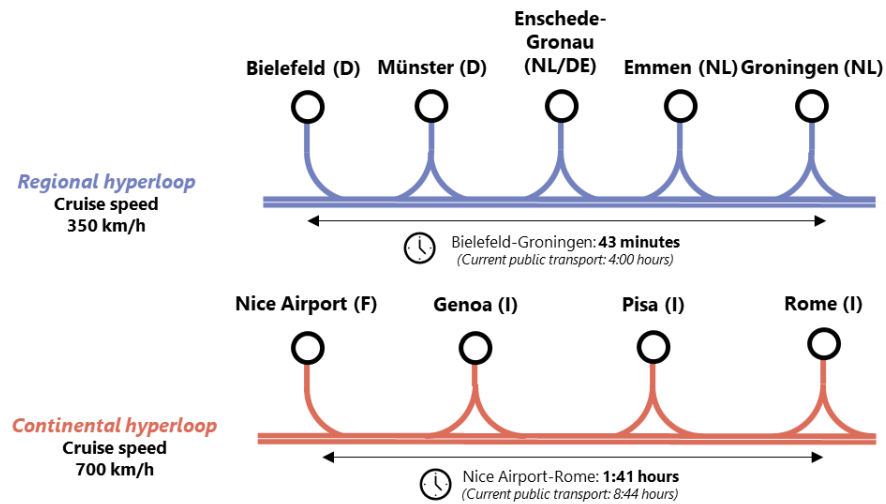
Implementation of hyperloop

Hyperloop is an energy-efficient and fast mode of land transportation for passengers and goods. Its infrastructure consists of a combination of stations and low-pressure tubes that can be implemented above ground on pillars, at-grade or underground in tunnels. The hyperloop's small physical footprint enables integration with existing infrastructure, making the most efficient use of available space. Inside the tubes, vehicles operate in an isolated environment providing protection from outside influences. Hyperloop offers the highest transport capacity. Energy use can be up to 10 times reduced in comparison with existing modalities. CAPEX costs are comparable to high-speed rail.



* Multimodal comparison based on CAPEX outline hyperloop vs. high-speed rail by Hardt Hyperloop and Deutsche Bahn E.C.O. Group (2022)

Hyperloop networks can revolutionize transit, offering capacity for local, regional, national, and continental travel. The network can be operated as a point-to-point service, or as an all-stops service, similar to a metro. Point-to-point services are possible through the utilization of lane switches, enabling seamless direct connections between origins and destinations. Here, vehicles can enter or exit a mainline at high speeds, ensuring a continuous flow with reduced deceleration requirements.



The above examples are potential hyperloop trajectories on a regional and continental scale and do not reflect existing (public) policy.

The [Hyperconnected Europe report](#) provides insight into a potential European hyperloop network. It demonstrates that two-thirds of continental flights and nearly 20% of long-haul road freight traffic could be unburdened by hyperloop.

About the Hyperloop Development Program

The Hyperloop Development Program (HDP) is a public-private partnership driven by national and regional governments, and a group of industry parties and knowledge & research institutions. Since its establishment in 2020, several organizations across Europe have joined the HDP. These include technology developers - such as Hardt Hyperloop (the Netherlands) and Nevomo (Poland) -, the German Institute for Hyperloop Technology, and Belgian construction group Denys. Together HDP partners are dedicated to developing hyperloop as a safe, sustainable, and viable mode of high-speed mobility, and to bring the hyperloop to realization. The HDP aims to prove the feasibility of hyperloop as a safe and sustainable low-emission transport mode through testing and demonstrating at the European Hyperloop Center from 2024. More information about hyperloop development can be found at www.hyperloopdevelopmentprogram.com.

Contact Hyperloop Development Program

Jan Willem Visser, Public Affairs Manager

+31 (0) 683835587

[✉ janwillem.visser@hyperloopdevelopmentprogram.com](mailto:janwillem.visser@hyperloopdevelopmentprogram.com)