

Uncovering infrastructure's role in driving a sustainable transportation industry



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Transportation remains one of the largest contributors to GHG emissions globally. The emissions intensity of various modes of transport can be tackled through improved fuel efficiency, alternative fuels, and new technologies. Whilst most of the attention focuses on what the operators and the manufacturers of planes, trains, ships and cars are doing to drive decarbonisation of transportation, we believe a third group in the transport value chain can play a truly impactful role: **transportation infrastructure operators.**

Our fundamental research efforts have uncovered numerous examples within the Global Listed Infrastructure (GLI) universe of how transportation infrastructure companies are having an impact beyond their own carbon emissions and helping to reduce emissions across the broader transportation landscape:

Infrastructure technology can drive fuel efficiency.

Upgraded engines, new materials and efficient transportation practises are all drivers of fuel efficiency, but a unique example of an infrastructure asset's role sits in the air navigation sector. By the end of December 2025, European Airspace is expected to operate under 'Free Route Airspace' a system designed to allow an airline to fly the shortest and most direct route, rather than using the less direct, pre-defined corridors traditionally used to fly through airspace.⁽¹⁾ Once fully implemented, an estimated 20mn CO₂ tonnes should be avoided. In Europe, the majority of Air Navigation Service Providers are public entities, resulting in numerous delays in the implementation of these new technologies. ENAV Spa, the sole listed air navigation services provider, was amongst the first air navigation services providers in Europe to launch this technology in 2016. Meanwhile, toll road operators have numerous tools to support fuel efficiencies. For example, Ecorodovias in Brazil is using digital tolling and high-speed weigh-in motion technologies, which simplifies the inspection of excess loads. This results in more fluid, safer trips and fewer emissions.

Infrastructure regulation can support the uptake of alternative fuels.

As carbon intensive fuels are replaced by cleaner alternatives, airports and their regulators can play a role in supporting the uptake of these otherwise costly fuels. Consider that sustainable aviation fuel (SAF) has been 4-6x more costly than jet fuel. However, at Heathrow Airport, the regulator is supporting half of this incremental cost in the form of an incentive for airlines. Aena, the operator of the Spanish airport system, is also actively pursuing such regulatory mechanisms in its conversations with the Spain Ministry of Transport. As these incentives are backed by regulation, we do not anticipate the airports' returns will be compromised.

Infrastructure companies can enable the procurement of SAF, biofuels and hydrogen.

In addition to the cost challenges of SAF take up, supply could become limited in the near future. Furthermore, there is a competition between the available feedstock for SAF vs other biofuels used in industries such as rail. Several companies in our GLI investment coverage are taking steps to help secure supply of these cleaner fuels. Companies with scale,

⁽¹⁾ <https://www.eurocontrol.int/concept/free-route-airspace>



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such as AENA, which operates a network of dozens of airports, are using this advantageous position to influence regional development and production. Other companies, such as Groupe AdP, the operator of the Paris airports, is investing directly in an SAF producer and a Sustainable Flight Fund, which is focused on technology breakthroughs in the field. In the U.S. rail industry, operators such as Canadian National Railway and Union Pacific are conducting trials with manufacturers to increase the current blend limits of biofuels and renewable fuels for locomotives, whilst at the same time trying to understand where supply will be and how to secure it. Efficiency, new fuels, hybrids and electrification will help transportation companies deliver solid steps in the path to net zero. Other drivers bridging the gap to net zero 2050 will also include some contribution from hydrogen, we believe largely through the 2035-2050 time period. Early infrastructure movers, such as AdP partnering with Air Liquide, Air France, and Airbus to create an aviation hydrogen hub, will prepare the sector in France and globally for the challenges and opportunities presented by hydrogen projects.

Infrastructure businesses can accelerate the electrification of transportation. As electric and hybrid technology evolves, the prospects improve for the decarbonisation

of road and rail infrastructure, in particular. However, the success of electric cars, trucks, and trains is not solely dependent on the evolution in battery technologies, but also on the availability of charging infrastructure. French toll road operator, Vinci, is often named as a leader in light vehicle charging equipment installation, with 1,600 charging points across 180 service areas. Seven times this level will be required by 2035, which leads us to believe further private capital will be required to deliver on these needs. In fact, Vinci has been contracted this year to deliver charging stations in Germany. More interestingly, we note that Vinci has started testing 'dynamic charging' technology, with one option inspired by the rail industry and a second which allows for induction charging via plates below a road surface, enabling even heavy vehicles to charge a battery whilst travelling. In the U.S. rail industry, UNP is partnering with ZTR, a rail tech company, to develop a hybrid locomotive that has a self-charging mode with intent on reducing fuel consumption by 80%. Transurban in Australia actively encourages road users to adopt EVs, hosting EV experience days, supporting launch events (e.g. Parliamentary Friends of Electric Vehicles and Future Fuels Transport group), and helping bring together expertise and advocacy to accelerate the transition to EVs.



By implementing innovative technologies, optimizing transportation systems, and supporting the adoption of cleaner fuels, infrastructure operators can help drive decarbonization across the entire transportation ecosystem. Their role in improving efficiency, building essential charging infrastructure, and facilitating alternative fuel usage places them at the heart of emission reduction efforts. As key players in the transition to a low-carbon future, infrastructure companies are well-positioned to have a far-reaching impact on achieving global sustainability goals.

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