



ESG Insights

December Focus: Attaining Net Zero Targets This Week: Decarbonising Transport

- *Transport is a large contributor towards global carbon-dioxide emissions, which are currently expected to continue rising due to greater volumes of travel.*
- *A targeted approach to decarbonization must be employed across a range of transport modes in order to reach net-zero emissions, especially given projected transport growth in Asia.*

OVERVIEW

Transport is responsible for 24% of direct carbon dioxide emissions from fuel combustion, over both long-haul transport such as aviation and shipping, as well as short-distance transport such as cars and buses. Although transport emissions have been suppressed by the COVID-19 pandemic, the IEA posits that if demand returns to pre-COVID levels, global CO₂ emissions would increase by over 1.5%. Despite constant improvements in vehicle efficiency and reductions in emissions, these gains are more than offset by greater volumes of travel. In terms of transport modes, 72% of global transport emissions come from road vehicles, which accounted for 80% of the rise in emissions from 1970-2010. Maritime shipping, on the other hand, emits around 940 million tonnes of CO₂ annually and is responsible for about 2.5% of global greenhouse gas (GHG) emissions across all sectors.

Thus, as nations strive to reach net-zero emissions and build a cleaner, healthier future for their citizens, the decarbonisation of transport is crucial. This has been reflected in the increasing proliferation of electric vehicles over the past decade, as well as sustained research and development into decarbonising other polluting sectors such as aviation and shipping.

OUTLOOK

Asia is a key area of development in the transition to carbon-neutral transportation. China, Japan and South Korea - countries that make up two-thirds of total Asian emissions - have all made explicit their plans to be carbon neutral, and other ASEAN countries are likely to follow suit. ING forecasts that by the middle of the century, China, Japan and South Korea will spend a combined USD 12 TN to decarbonise their transport industries, supplying new fleets of battery electric vehicles, electric railways, hydrogen-powered trucks, sustainable fuel planes and ammonia burning ships. This investment is crucial given the rapid pace of growth in these areas - in China, for example, the number of passenger cars is expected to increase to 450 million in 2050, driven by increasing urbanisation and wealth. Asia's ability to meet global climate commitments will depend on whether sustainable, low-carbon transport can be implemented successfully. There are initiatives to this end, for example, the NDC Transport Initiative for Asia (NDC-TIA) seeks to provide resources and assistance to partner countries China, India and Vietnam, to promote a strong policy approach towards decarbonising transport.

OPPORTUNITY

Maritime shipping is a sector where there are plenty of investment opportunities - the shipping sector produces 2-3% of global CO₂ emissions, and the International Maritime Organisation (IMO) has set a target to cut carbon emissions in half by 2050, so novel solutions are required. Potential options for decarbonisation include hydrogen, ammonia, methanol, nuclear, and even wind-powered ships, although a preferred option has not yet been identified. To meet the ambitious goal set by the IMO, governments and businesses must invest the necessary capital to develop new technologies that can be quickly implemented at scale. Research into this sector is backed by policy support and government-funding. Singapore, for example, has established an International Advisory Panel on Maritime Decarbonisation, to develop strategies for the shipping industry, and ports in Japan, China and South Korea are promoting the fuelling of ships with LNG. China has also begun exploring methanol as a clean-burning marine fuel. A research report authored by the University Maritime Advisory Services (UMAS) states that the cumulative investment required to fully decarbonise shipping would be between USD 1.4TN and USD 1.9TN, to be raised between 2030 and 2050.

Electric vehicles are a comparatively more mature technology and offer one of the cheapest and easiest ways to reduce emissions. China has already secured the top spot in the global EV market, accounting for nearly 50% of sales, and by 2030 the IEA estimates that two of every three vehicles sold in China will be electric. Furthermore, supportive policies have incentivised Chinese EV manufacturers to pursue expansion into international markets - one example being a free trade agreement with ASEAN countries that makes EV imports tax-free. These measures will certainly increase demand for EVs in the Asia-Pacific region, with the market projected to rise from USD 58BN currently to USD 166BN in 2025, growing at a CAGR of 29.9%. As such, there are a litany of opportunities in both battery manufacturing and the development of charging infrastructure in the region. Thailand has taken a lead in battery manufacturing, with the Thai Board of Investment approving 10 battery manufacturing projects, allowing Honda, Mercedes, and Toyota to operate plants. In Indonesia, state-owned PLN intends to install at least 1000 EV charging stations by 2025.