Kuehne Climate Center, SLOCAT

Roadmap for Transformative Action on Freight Transport and Logistics

Consolidating Targets, Milestones, and Actions for Low-Carbon, Intermodal Freight

This roadmap outlines key actions for the transformation of freight transport and logistics, highlighting milestones to be achieved through **collective action of transport actors from 2026 to 2050.** With the aim of harnessing the momentum of the United Nations Decade of Sustainable Transport 2026-2035 to deliver on **intermodality, decarbonisation, efficiency and resilience** in freight transport, this roadmap supports **national and sub-national governments** (regional, national and local initiatives) and **companies** (freight operators, shippers, logistic companies etc.) to deliver impactful action. It draws on existing research and evidence from leading international stakeholders to offer a pragmatic pathway for **measurable progress**.

Structure of the Roadmap:

- Key measures and milestones,
- Timeline of action from 2026 to 2050, with emphasis on 2026-2035, and key milestones for 2035 and 2050 milestones,
- Responsible actors, and potential first movers,
- Examples of good practices across actors.

The roadmap emphasises the importance of establishing development strategies, securing investments, technologies and finance, and facilitating freight demand management. To achieve this, several critical enablers for intermodal, low-carbon, efficient and resilient freight transport and logistics are required, as outlined in the five categories of the **#TransformingFreightTransport** Manifesto:

Early implementation is essential to achieve milestones that put freight transport and logistics on track to meet the Paris Agreement goals, support the 2030 Agenda for Sustainable Development, and align with targets from global processes on international aviation and shipping. Where possible, the roles of specific stakeholders in delivering sustainable, low-carbon freight transport and logistics are outlined. **Stakeholders can use this roadmap** as a high-level guidance document to:

- design their own approaches on freight transport and logistics,
- assess where they are in the transition process and where progress is needed,
- signal the scale of transformation required across the sector.

The roadmap builds upon the *Compendium of Policies and Investments*, initiated by SLOCAT and Kuehne Climate Center, identifying 'best value' policies and investment approaches to deliver near-term results, while laying the foundations for long-term transformations of freight transport and logistics. The roadmap consolidates findings from multiple scenario modelling approaches and research studies that outline future low-carbon pathways for freight transport. It synthesises evidence on the levels of ambition, investment needs and milestone targets required to align the sector with global climate goals. This synthesis draws on publications released in recent years, each with its own underlying assumptions and areas of focus.

Together, the roadmap and compendium translate the vision of the *Manifesto for intermodal, low-carbon, efficient and resilient freight transport and logistics* into actionable steps. The manifesto, launched in 2024 at the first United Nations Global Supply Chain Forum by SLOCAT and Kühne Climate Center, in collaboration with ALICE, CONCITO, IDDRI, International Transport Workers' Federation, Smart Freight Centre, International Union of Railways (UIC), and World Resources Institute (WRI), mobilised more than 45 signatories.

Feedback

If you want to provide comments and feedback on the Roadmap for Transformative Action on Freight Transport and Logistics, please send an email to secretariat@slocatpartnership.org.

Disclaimer: This freight transport and logistics roadmap is a non-prescriptive conceptual framework outlining key transformative actions for the freight transport and logistics. While the roadmap presents a sequence of actions, it cannot fully account for the complexity of pathways and the interdependencies associated with specific measures. Actual implementation will vary depending on country context, institutional capacity, market maturity and actor readiness. Advanced economies may be able to adopt certain measures earlier, while others may require additional time and support to ensure feasibility and equity. The milestones presented should therefore be interpreted as indicative guidance rather than uniform requirements. All statements, values and figures are supported by references. It should also be acknowledged that the roadmap synthesises results from several different modelling tools, each of which is based on its own assumptions.

Roadmap for Transformative Action on Freight Transport and Logistics

Yellow box: actions
Blue box: milestones
Blue text: key moments

By clicking on the items, you will find more information.

	Actions	**Milestones**	***Key moments***
2026	⏩ Establish freight decarbonisation strategies. ⏩ Set freight greenhouse gas emission reduction targets.	🌟 Only electrified railways are constructed or only electric locomotives are introduced.	2026: First International Conference on Just Transition Away from Fossil Fuels
2027	⏩ Invest in new jobs for low-carbon freight transport and logistics. ⏩ Scale up deployment and reduce investment risks for near zero-emission technologies for road freight. ⏩ Mobilise finance for low-carbon maritime transport investments. ⏩ Invest in intermodal terminals and ports. ⏩ Introduce carbon pricing for all freight modes.	🌟 Every freight transport mode will be covered by a pricing mechanism.	***2027:*** *SDG Summit*

2028	⏩ Implement cross-border freight agreements focusing on efficient, low-carbon mode choices. ⏩ Digitalise freight handling.		***2028:*** *Conclusion of Second UNFCCC Global Stocktake*
2030	⏩ Raise carbon pricing aligned to necessary decarbonisation pathways. ⏩ Shift freight from roads to railways and/or inland waterways.	🌟 2030 low-carbon freight targets achieved. 🌟 Ensure a heightened role of freight in NDCs.	***2030:*** *NDCs 4.0 submission* *Conclusion of UN 2030 Agenda for Sustainable Development and the Sendai Framework for Disaster Risk Reduction* *ICAO's near-term goal of 5% reduction in CO_2 emissions by 2030* *IMO's intermediate GHG targets for shipping of at least 20%, (striving for 30%) below 2008 levels*
2035		🌟 Only electric vans are sold. 🌟 Every city is equipped with zero-emission zones and sustainable urban logistics plans.	***2035:*** *Conclusion of UN Decade of Sustainable Transport* *Global transport goal to reduce energy demand by 25% and shift a third to sustainable biofuels and renewable sources*

2040	⏩ Adapt universal access to open freight data. ⏩ Raise carbon pricing to high levels.	🌟 Only electric trucks are sold.	***2040:*** *IMO's intermediate GHG targets for shipping of at least 70%, (striving for 80%) below 2008 levels*
2050	⏩ Shift 45-50% of goods from road to railways and/or inland waterways.	🌟 Decarbonised freight transport achieved.	***2050:*** *ICAO's Collective Long-Term Global Aspirational Goal (LTAG) of net-zero carbon emissions* *IMO's targets to shipping to reach net-zero GHG emissions*

Freight transport and logistics roadmap

The following pages expand on the roadmap activities and milestones by providing detailed descriptions of each activity, the corresponding intervention area from the Compendium of Policies and Interventions (delivering quick wins and long-term transformations), the relevant stakeholders and supporting examples.

Establish freight decarbonisation strategies

Every stakeholder, including national and sub-national governments as well as companies, should have a freight decarbonisation strategy in place as soon as possible. All freight transport activities, whether policies, projects or programmes, should be assessed against national, regional and global goals on decarbonisation, sustainability, just transition principles and resilience. Such frameworks establish the legal and institutional basis for many of the subsequent measures introduced over the coming years, including end-of-life pathways for internal combustion engine freight vehicles. They create an enabling environment for coordinated action by freight actors by aligning decarbonisation ambition with implementation capacity. These frameworks function not only as governance instruments but also as delivery mechanisms that catalyse implementation.[1]

Stakeholders will further benefit from aligning their freight frameworks and strategies with global agreements, such as the 2030 Agenda for Sustainable Development, the Paris Agreement and the Sendai Framework for Disaster Risk Reduction 2015–2030.

Related intervention area:

CO_2 emission reduction targets for freight transport supporting overall transport decarbonisation by 2050 (1)

Stakeholders:

- First movers: Companies (to develop such strategies as soon as possible).
- Followed by: Governments (to develop national freight decarbonisation strategies in dialogue with private sector engagement)

Supporting examples:

→ The United Kingdom released in 2021 their Transport decarbonisation plan with the target to decarbonise their entire transport system by mid-century.[2]

[1] United Nations Economic and Social Commission for Asia and the Pacific (2024), Manual: sustainable and energy efficiency of the freight transport sector, https://www.unescap.org/kp/2024/manual-sustainable-and-energy-efficiency-freight-transport-sector.

[2] United Kingdom (2021), Transport decarbonisation plan, https://www.gov.uk/government/publications/transport-decarbonisation-plan.

- Over 200 multinational companies are committed to implement the Global Logistics Emission Council framework.[3]
- The Alliance for Logistics Innovation through Collaboration in Europe (ALICE) has released a framework for developing a roadmap towards zero-emission logistics by 2050, providing useful insights and solutions for stakeholders.[4]
- The Deep Decarbonization Pathways scientific network works with national climate policymakers and freight stakeholders to design and model freight decarbonisation strategies.[5]

Set freight greenhouse gas emission reduction targets

Ideally, freight greenhouse gas emissions should peak as soon as possible. The Paris-aligned scenario of the International Transport Outlook by the International Transport Forum (ITF) requires global freight transport emissions to peak at 3.9 gigatonnes of CO_2 equivalent in 2026 to achieve transport decarbonisation by 2050. To align with such decarbonisation scenarios, freight greenhouse gas emissions will need to decline by 75% by 2050 compared to 2019 levels. Without intervention, freight greenhouse gas emissions could increase by nearly 30% between 2019 and 2050.[6]

The International Energy Agency (IEA) provides pathways for individual freight transport modes. These pathways reflect more ambitious and deeper emission reductions than the ITF pathway.[7] However, neither scenario accounts for regional and national differences or the wide-reaching socio-economic consequences of decarbonisation, which would require a more bottom-up and nationally-driven approach building on national scientific communities.[8] These scenarios also have limited considerations for 'Avoid' and Shift' strategies that could deliver significant impacts at a lower cost.[9]

Stakeholders therefore need to set freight transport greenhouse gas reduction targets as soon as possible to support decarbonisation by 2050. Any delay in implementing interventions or continued inaction would significantly reduce the remaining carbon budget available to stay within the goals of the Paris Agreement. Under current climate ambitions, the carbon budget consistent with limiting warming to 1.5°C would already be exhausted by 2032.[10]

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[3] Smart Freight Centre (2025), Global Logistics Emission Council framework, Version 3.2, https://www.smartfreightcentre.org/en/our-programs/emissions-accounting/global-logistics-emissions-council/calculate-report-glec-framework/.

[4] ALICE (2019), Roadmap towards Zero Emissions Logistics 2050, https://www.etp-logistics.eu/wp-content/uploads/2019/12/Alice-Zero-Emissions-Logistics-2050-Roadmap-WEB.pdf

[5] Y. Briand et al. (2024), A pathway design framework for national freight transport decarbonization strategies, Climate Policy, https://doi.org/10.1080/14693062.2024.2412709

[6] ITF (2023), ITF Transport Outlook 2023, https://www.itf-oecd.org/itf-transport-outlook-2023

[7] IEA (2021), Net Zero by 2050, https://www.iea.org/reports/net-zero-by-2050

[8] Y. Briand et al. (2025), Net-zero compatible development pathways in Argentina, Brazil, China, India, Indonesia, Mexico and South Africa: lessons for short-term actions, https://doi.org/10.1080/14693062.2026.2624246

[9] SLOCAT (2026), Avoid-Shift-Improve Refocusing, https://slocat.net/asi and H. Dalkmann and C. Brannigan (2007), Transport and Climate Change, Module 5e: Sustainable Transport – A Sourcebook for Policy-Makers in Developing Cities, GIZ, https://changing-transport.org/wp-content/uploads/2007_dalkmann_brannigan_transportandclimatechange.pdf

[10] SLOCAT (2025), Transport, Climate and Sustainability Global Status Report – 4th edition, https://gsr4.slocat.net

At the Climate Change Conference COP30 in Belém, Brazil, 11 countries signed a declaration on resilient and low-emission transport for people, development and the planet. The declaration sets a goal to achieve, globally by 2035, a 25% reduction in overall energy demand and a shift to one third sustainable biofuels and renewable energy sources, recognising that each country's contribution to this global effort will reflect its national circumstances.[11]

Year	ITF Pathways pathways required to reduce freight transport CO_2 emissions (compared to 2019 levels)[12]	IEA Pathways for each transport mode (compared to 2020 levels)[13]
2030	8%	10% from heavy trucks 33% reduction from rail 14% reduction from shipping
2035	14%	28% from heavy trucks 44% from rail 37% from shipping
2040	31%	50% from heavy trucks 67% from rail 58% from shipping
2050	75%	89% from heavy trucks 88% from rail 85% from shipping

Related intervention area:
CO_2 emission reduction targets for freight transport supporting overall transport decarbonisation by 2050 (1)

Stakeholders:
- First movers: National/subnational governments in upper middle- and high-income countries;
- Followed by: National/subnational governments in lower middle- and low-income countries; companies and freight vehicle manufacturers.

Supporting examples:

[11] Changing Transport (2025), Eleven Countries Champion New Low-Emission Transport Declaration at COP30, https://changing-transport.org/eleven-countries-champion-new-low-emission-transport-declaration-at-cop30/
[12] ITF (2023), ITF Transport Outlook 2023, https://www.itf-oecd.org/itf-transport-outlook-2023
[13] IEA (2021), Net Zero by 2050, https://www.iea.org/reports/net-zero-by-2050

- New Zealand aims to reduce freight transport CO_2 emissions by 35% by 2035 compared to 2019 levels.[14]

🌟Only electrified railways are constructed or only electric locomotives introduced.

All new railway tracks, particularly on high-throughput corridors, should be electrified using overhead lines or conductor rail from 2026 onwards. Where traffic volumes are too low to make such electrification options economically viable, battery electric trains can be deployed.[15] Railways currently account for the lowest share of freight transport emissions, at 2.3%, but further improvements to rail infrastructure are an important enabler of modal shift from road to rail.[16]

Related intervention area:

Low-carbon freight transport infrastructure, operations, vehicles and renewable fuels (1)

Stakeholders:

- First movers: Governments (through national regulation) and railway entities (through procurement and construction regulations).

Supporting examples:

- As of 2025, already a dozen countries (e.g., Armenia, India, Laos, Singapore, Switzerland) have a near-complete electrified railway system in operation.[17]

Invest in new jobs for low-carbon freight transport and logistics

The workforce needs to be prepared for the transition towards freight decarbonisation, which implies deep systemic transformations, evolving demand patterns and structural changes in supply chains and logistics. Even with substantial emission reductions, the logistics workforce is already experiencing the negative impacts of climate change.[18]

The creation, adaptation and substitution of jobs must be ensured through a just transition and targeted capacity building. Over the coming years, working environments will change and companies will need to ensure sufficient flexibility to accommodate these changes for workers. For example, battery-powered vehicles will require different operational schedules due to charging needs and reduced maintenance requirements.[19]

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[14] New Zealand Ministry for the Environment (2022), Towards a productive, sustainable and inclusive economy: Aotearoa New Zealand's first emissions reduction plan. Chapter 10: Transport, https://environment.govt.nz/publications/aotearoa-new-zealands-first-emissions-reduction-plan/transport/

[15] IEA (2025), Rail, https://www.iea.org/energy-system/transport/rail.

[16] S. Speizer et al. (2024), Integrated assessment modeling of a zero-emissions global transportation sector, Nature Communications 15, 4439, https://doi.org/10.1038/s41467-024-48424-9.

[17] Wikipedia (2025), Railway electrification, https://en.wikipedia.org/wiki/Railway_electrification.

[18] Kuehne Climate Center (2025), Logistics in a +2°C world, https://www.kuehne-stiftung.org/fileadmin/user_upload/Kuehne_Climate_Center_-_Logistics_in_a_2_Degrees_World.pdf

[19] A.C. McKinnon (2024), Capability Building for the Greening of Logistics, Kühne Logistics University Hamburg, https://www.alanmckinnon.co.uk/uploaded/PDFs/Presentations/Capability%20building%20for%20greening%20logistics%20(Dar%20es%20Salaam%20conference%20%20McKinnon%20KLU)%20final.pdf

Related intervention area:

Data, research, technology, innovation and capacity building (5)

Stakeholders:
- First movers: Companies (invest in workforce skills, safety and trainings); educational institutions (develop freight and logistics programmes and courses)
- Followed by: Governments (funding programmes and standards).

Supporting examples:

- LEARN Logistics by Kühne Foundation supports capacity building in logistics and supply chain management in low- and middle-income countries.[20]
- The EV Skills Denmark India project project brings Danish and Indian students and teachers together to collaborate, exchange knowledge, and develop essential skills within e-mobility, including freight.[21]

Scale up deployment and reduce investment risks for near zero-emission technologies for road freight

Governments should accelerate the deployment of low-carbon solutions for road freight by supporting low-carbon technologies, particularly battery electric trucks and vans. They need to ensure a robust enabling environment that lowers investment risks for vehicle manufacturers and avoids major disruptions to existing assets. Scaling up deployment will require coordinated action on infrastructure development, energy supply, logistics and workforce skills.

Related intervention area:
Policies and regulations to promote the roll-out of a smart and interoperable recharging and refuelling infrastructure for zero emission fuels and renewable energy-powered freight transport vehicles (1)

Stakeholders:
- First movers: *Governments and freight vehicle manufacturers in upper middle- and high-income countries put in efforts towards low-carbon transport as soon as possible.*
- Followed by: Governments and companies elsewhere (to produce and import only zero-emission technologies)

Supporting examples:

- EU's Alternative Fuel Infrastructure Regulation (AFIR) aims for fast-charging stations, with a total output of 600 kW for heavy-duty vehicles, to be installed every 60 kilometres along highways by the end of 2025.[22]

[20] Kühne Foundation (2026), LEARN Logistics, https://learn-logistics.org/.
[21] Mento to Impact (2025), Driving the Renewable Future. https://mentortoimpact.dk/ev-project-india/
[22] IRENA (2025), Policies for advancing the renewables-based electrification of road transport, https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2025/Jun/IRENA_POL_Policies_electrification_road_transport_2025.pdf; European Commission (2024), Alternative Fuels Infrastructure, https://transport.ec.europa.eu/transport-themes/clean-transport/alternative-fuels-sustainable-mobility-europe/alternative-fuels-infrastructure_en.

Mobilise finance for low-carbon maritime transport investments

Policies should facilitate the deployment of low-carbon vessels by mobilising dedicated financial resources and creating enabling conditions for investment in low-carbon vessels and less greenhouse gas-intensive fuels. Such vessels should be deployed on major corridors by 2028, and no later than 2030.[23] Scaling up the production of low-carbon marine fuels will require rapid expansion. Financial support should help ensure competitive fuel prices and an economically feasible transition. [24] This can be achieved by encouraging private investment, guiding market forces and redirecting revenues from inefficient and polluting services. The earlier such measures are introduced, the easier it will be to achieve a large fleet of low-carbon vessels by 2040. Low-carbon vessels can also generate substantial revenues for shipbuilders and reduce operating costs for shipping companies.[25]

Related intervention area:

Earmarking climate finance for transport to address a country's long-term transport investment needs (2)

Stakeholders:
- First movers: International development finance institutions and governments.
- Followed by: Companies.

Supporting examples:

- In 2022, the Norwegian company Yara launched the Yara Birkeland, a fully electric, autonomous and low-carbon container ship.[26]
- Also in 2022, the Japanese shipping company Asahi Tanker launched the first of two all-electric vessels.[27]
- Since 2025, the Panama Canal reserves a slot for vessels meeting specific low-carbon emission requirements. It incentives the uptake of vessels capable of using low-carbon fuels.[28]

Invest in intermodal terminals and ports.

Intermodality is a key element of sustainable freight transport. Supporting investment in intermodal hubs can enable regional and national modal shifts towards more efficient and resilient transport modes, such as rail and waterborne transport. These investments should support modal share targets for 2030 and 2050 that are aligned with achieving carbon neutrality by 2050. Shifting the

[23] Getting to Zero Coalition (2019), Industry roadmap, https://assets.ctfassets.net/gk3lrimlph5v/R8y3ohX2sddnAFO7zfWDc/0d9cd4a007204155d7359594ba8d28c4/Getting_to_Zero_Coalition_Industry_Roadmap.pdf.
[24] Getting to Zero Coalition (2019), Industry roadmap, https://assets.ctfassets.net/gk3lrimlph5v/R8y3ohX2sddnAFO7zfWDc/0d9cd4a007204155d7359594ba8d28c4/Getting_to_Zero_Coalition_Industry_Roadmap.pdf.
[25] H.J. Cho, S. Ünalan and Z. Meng (2024), Economic benefits of building zero-emission capable vessels in East Asia, https://theicct.org/wp-content/uploads/2024/09/ID-205-%E2%80%93-ZE-vessels-working-paper-A4-60047-v4.pdf.
[26] Yara (2024), Yara Birkeland, two years on, https://www.yara.com/knowledge-grows/yara-birkeland-two-years-on/.
[27] Corvus Energy (n.d.), Asahi Tanker – World´s first zero emission, all electric tanker, https://corvusenergy.com/sucess-stories/asahi-tanker-world-s-first-zero-emission-all-electric-tanker.
[28] A. Ajdin (2025), Panama Canal earmarks slot for greener ships, Splash247, https://splash247.com/panama-canal-earmarks-slot-for-greener-ships/.

transport of goods from road to electrified rail and inland water transport is one of the most cost-effective measures to reduce CO_2 emissions from freight transport, while also lowering external costs related to crashes, air and noise pollution, congestion and habitat damage.[29]

Related intervention area:
Shift to the most efficient, low-carbon modes of transport and use of intermodal freight transport corridors across borders (1)

Stakeholders:
- First movers: Governments with strong reliance on regional trade corridors (such as landlocked countries).
- Followed by: Companies with global trade and any other national governments facilitating domestic and global trade.

Supporting examples:

- The EU regulation for the TransEuropean Transport (TEN-T) Network mandates that all 431 major urban nodes in the Union should have an intermodal freight terminal in operation before 2040.[30]

🌟Every freight transport mode will be covered by a pricing mechanism

Pricing, taxation, tolling and market-based measures provide financial incentives and increased accountability in support of more intermodal, low-carbon, efficient and resilient freight transport and logistics, while better reflecting the full costs of freight transport modes for society and the environment. Pricing and market-based mechanisms can help ensure that polluters pay for external costs, including environmental and health impacts. Such measures shifts financial burden from tax payers to users while providing economic incentives for behavior and decisions favoring low-carbon approaches. Heavy-duty vehicles are the most polluting road vehicles and the largest contributors to road damage, with projections indicating a further increase in their impacts in the absence of effective policy intervention.[31]

Related intervention area:
Pricing and fiscality reflecting the entire costs (2)

Stakeholders:
- First movers: National and subnational governments in upper middle- and high-income countries.
- Followed by: National and subnational governments in lower middle- and low-income countries.

Supporting examples:

- By 2027, 81% of the road freight movement in the EU is expected to be covered by distance-based tolling.[32]

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[29] A. C. McKinnon and M. Petersen (2021), Measuring Industry's Temperature: An Environmental Progress Report on European Logistics, DOI: 10.13140/RG.2.2.32088.72961, https://www.researchgate.net/publication/348465509_Measuring_Industry%27s_Temperature_An_Environmental_Progress_Report_on_European_Logistics.
[30] https://data.consilium.europa.eu/doc/document/PE-56-2024-INIT/en/pdf
[31] ITF (2025), New Vehicle Technologies and Social Trends: Implications for Road User Charging, https://www.itf-oecd.org/new-vehicle-technologies-social-trends-road-user-charging
[32] ITF (2025), New Vehicle Technologies and Social Trends: Implications for Road User Charging, https://www.itf-oecd.org/new-vehicle-technologies-social-trends-road-user-charging

- In January 2025, Denmark implemented a kilometre-based and CO_2-differentiated road toll for all trucks heavier than 12 tonnes. The toll will expand to all trucks (3.5 tonnes and above) from January 2027 and then to the entire road network by 2028.[33]
- London's Ultra Low Emission Zone (ULEZ) adds a daily charge of GBP 12.50 for vans (and other vehicles under 3.5 tonnes) which do not meet the ULEZ emission standards. Trucks above 3.5 tonnes that do not meet specific emission standards face LEZ charges of GBP 100 to 300 per day.[34]

Introduce carbon pricing for all freight modes

Carbon pricing across all energy used to power freight transport can address the lack of commercial viability of decarbonisation solutions by creating demand certainty, stimulating supply and establishing markets that accelerate the transition to decarbonised freight.[35] Effective carbon pricing frameworks typically combine a carbon tax, fuel excise taxes and a carbon price derived from an emissions trading system. In most countries, road transport is already subject to fuel excise taxation.[36]

Closely related, though not formally considered a carbon pricing instrument, is the International Maritime Organization (IMO) Net-Zero Framework. The framework aims to introduce performance-based greenhouse gas intensity targets for ships above 5,000 gross tonnage. It proposes a two-tier compliance structure with specific greenhouse gas fuel intensity thresholds. Ships that exceed these targets will be required to purchase remedial units, while ships performing below the direct compliance target will generate tradable surplus units.[37] *Under the current draft approach, tier 1 remedial units would be priced at USD 100 per tonne of CO_2 equivalent, while tier 2 remedial units would be priced at USD 380 per tonne of CO_2 equivalent.*[38] Adoption of the Net-Zero Framework is expected in 2028, subject to approval by IMO member states following a one-year delay in the decision-making process.[39]

Related intervention area:
Pricing and fiscality reflecting the entire costs (2)

Stakeholders:
- First movers: National and subnational governments that already have some type of carbon pricing instrument which might not necessarily cover (freight) transport.
- Followed by: National and subnational governments that still have to introduce any kind of carbon pricing.

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[33] Sund & Bælt (2025), Kilometer-based tolls for trucks (2025), https://vejafgifter.dk/en

[34] Transport for London (2026), Ultra Low Emission Zone, https://tfl.gov.uk/modes/driving/ultra-low-emission-zone; P. Zsófia (2022), HGVs will pay London's current LEZ charges under extended ULEZ scheme, Trans.info, https://trans.info/en/ulez-expanded-london-wide-hgvs-pay-lez-charges-315398

[35] ITF (2022), Carbon Pricing in Shipping International Transport, https://www.oecd.org/content/dam/oecd/en/publications/reports/2022/12/carbon-pricing-in-shipping_0cc1863c/250921ec-en.pdf

[36] OECD (2025), Effective Carbon Rates 2025: Recent Trends in Taxes on Energy Use and Carbon Pricing, OECD Series on Carbon Pricing and Energy Taxation, https://doi.org/10.1787/a5a5d71f-en

[37] Y. Han (2025), IMO Approves First-Ever Global Carbon Pricing for Shipping — But Is It Enough?, https://forourclimate.org/insights/50

[38] IMO (2025), Draft revised MARPOL Annex VI, https://wwwcdn.imo.org/localresources/en/MediaCentre/HotTopics/Documents/Circular%20Letter%20No.5005%20-%20Draft%20Revised%20Marpol%20Annex%20Vi%20%28Secretariat%29.pdf

[39] DNV (2025), Decision on the IMO Net-Zero Framework delayed for one year, https://www.dnv.com/news/2025/decision-on-the-imo-net-zero-framework-delayed-for-one-year/

Supporting examples:

- At least 95 national and subnational governments (mostly in Asia, Europe and North America) have implemented carbon pricing instruments, as of 2025.[40]
- By 2028, the EU Emissions Trading System 2 (ETS2) will be operationalised and include road transport under the 'cap and trade' system. Similar approaches can be replicated in other regions in a timely manner.[41]

Implement cross-border freight agreements focusing on efficient, low-carbon mode choices

Countries should work towards cross-border freight agreements that address sustainability, decarbonisation, vulnerability, adaptation and resilience. Such agreements can ensure shared governance and build on common standards and joint implementation mechanisms. They can also facilitate plans to transport goods by rail and waterborne transport, thereby supporting intermodality. This, in turn, can lead to effective corridor-level demand management and improved modal choices.[42] It is estimated that demand management could reduce emissions from harder-to-abate transport sectors by up to 20% by 2050.[43]

Related intervention area:

Shift to the most efficient, low-carbon modes of transport and use of intermodal freight transport corridors across borders (1)
Management of freight transport demand and trade development (3)

Stakeholders:
- First movers: *Governments (regional agreements reflecting shared governance) and cargo owners with already well-established corridors*.
- *Followed by: Governments and companies in regions with low-intensity cross-border freight activity.*

Supporting examples:

- The ASEAN region works towards wide-reaching regional freight agreements by 2030.[44]

[40] World Bank (2026), State and Trends of Carbon Pricing Dashboard, https://carbonpricingdashboard.worldbank.org/compliance/instrument-detail
[41] European Commission (2025), ETS2: buildings, road transport and additional sectors, https://climate.ec.europa.eu/eu-action/carbon-markets/ets2-buildings-road-transport-and-additional-sectors_en; International Carbon Action Partnership (2026), EU reaches agreement on 2040 climate target, postpones ETS 2 by one year, https://icapcarbonaction.com/en/news/eu-reaches-agreement-2040-climate-target-postpones-ets-2-one-year
[42] ITF (2022), Mode Choice in Freight Transport, https://www.oecd.org/content/dam/oecd/en/publications/reports/2022/02/mode-choice-in-freight-transport_667ea2c1/3e69ebc4-en.pdf
[43] https://www.energy-transitions.org/wp-content/uploads/2020/08/ETC_MissionPossible_FullReport.pdf
[44] ASEAN (2024), ASEAN Guidelines on Urban Freight Transport, https://asean.org/wp-content/uploads/2024/11/ASEAN-Guidelines-UFT_ISBN.pdf.

Digitalise freight handling

Digitalisation in freight transport can be implemented in various forms, such as automated logistics operations, route optimisation, online load-matching platforms and space management, among other options. Digitalisation is widely regarded as one of the most promising enablers, particularly for lower-income countries..[45] Digital tools can support a shift towards less carbon-intensive modes, increase vehicle load and occupancy rates, reduce costs and improve operational efficiency.[46] Network optimisation is widely considered feasible and offers significant potential to reduce emissions.[47]

Related intervention area:

Multimodal data-focused interfaces, digital platforms and new approaches, enabling transparency and exchange (5)

Stakeholders:
- First movers: Companies to digitalise their inventories and operations;
- Followed by: Governments to incentivise platform development fostering cooperation and exchange.

Supporting examples:

- → By 2027, the EU will implement the Electronic Freight Transport Information (eFTI) Regulation enabling a digital and paperless handling of goods.[48]
- → ASEAN guidelines for urban freight to target 50% of freight operators to adopt IoT and AI by 2030.[49]

🌟2030 low-carbon freight targets achieved.

In addition to the global pathways outlined under the action 'Set freight greenhouse gas emission reduction targets', the following mode-specific targets should be achieved by 2030:

- Rail:
  - 65% share of electricity in energy consumption[50]
  - 47% of rail lines electrified[51]
- Shipping:

[45] A. C. McKinnon (2023), The Decarbonization of Logistics in Lower Income Countries, Mobility and Transport Connectivity Series, World Bank, http://hdl.handle.net/10986/40530

[46] Touratier-Muller, N. and J. Jaussaud (2021), Development of Road Freight Transport Indicators Focused on Sustainability to Assist Shippers: An Analysis Conducted in France through the FRET 21 Programme, Sustainability 13, no. 17: 9641. https://doi.org/10.3390/su13179641

[47] World Economic Forum (2009), Supply Chain Decarbonization, The Role of Logistics and Transport in Reducing Supply Chain Carbon Emissions, https://www3.weforum.org/docs/WEF_LT_SupplyChainDecarbonization_Report_2009.pdf

[48] https://www.etp-logistics.eu/towards-paperless-freight-transport-system-in-the-eu/

[49] ASEAN (2024), ASEAN Guidelines on Urban Freight Transport, https://asean.org/wp-content/uploads/2024/11/ASEAN-Guidelines-UFT_ISBN.pdf.

[50] IEA (2021), Net Zero by 2050, https://www.iea.org/reports/net-zero-by-2050.

[51] IEA (2021), Net Zero by 2050, https://www.iea.org/reports/net-zero-by-2050.

        - 5% zero-emission fuels, incl. 8% biofuels, 6% ammonia and 4% hydrogen[52]
        - 50% reduction in average GHG fuel intensity compared to 2019 levels[53]
        - Large trade ports should provide low-carbon fueling infrastructure, enabling the primary use of low-carbon fuels across main shipping routes.[54]
    - Road transport
        - Wide provision of EV charging units (40 million EV public charging units by 2030) .[55]
        - 37% of heavy-duty trucks electrified[56]
        - 13% share of biofuels in energy consumption[57]

These values are modelled at the global level based on the cited sources. Efforts by each country should reflect national circumstances. A more ambitious transition would enable the transport sector to make a stronger contribution to economy-wide decarbonisation.

Related intervention area:
Low-carbon freight transport infrastructure, operations, vehicles and renewable fuels (1)

Stakeholders:
- Governments and freight vehicle manufacturers

Supporting examples:

- In the EU, truck manufacturers are mandated to cut the average emissions of new trucks 45% by 2030, 65% by 2035 and 90% by 2040.[58]
- At the regional level, the EU aims for 'near zero emission urban logistics' and 'essentially CO_2-free city logistics' in major urban centres by 2030.[59]
- Heavy truck's energy demand will plateau on 2022 levels (27 EJ) until 2030, and then decrease (e.g. 26 EJ in 2035).[60]
- Maritime transport's total demand in tonne-miles will plateau in 2030s due to changes in the global economy (home-shored production, localised supply chains, less transport of fossil fuels).[61]

🌟 Ensure a heightened role of freight in NDCs

Freight transport actions have remained largely overlooked in NDC submissions in 2020 and 2025. As

[52] IEA (2023), Net Zero Roadmap, 2023 Update, https://www.iea.org/reports/net-zero-roadmap-a-global-pathway-to-keep-the-15-c-goal-in-reach
[53] ICCT (2025), Vision 2050: Fuel standards to align international shipping with the Paris Agreement, https://theicct.org/publication/vision-2050-fuel-standards-to-align-international-shipping-with-the-paris-agreement-mar25/
[54] Zero-Emission Shipping (2022), Industry Roadmap for Zero-Emission Shipping, https://mission-innovation.net/wp-content/uploads/2022/04/Zero-Emission-Shipping-Mission-Roadmap-1-1.pdf.
[55] IEA (2021), Net Zero by 2050, https://www.iea.org/reports/net-zero-by-2050
[56] IEA (2021), Net Zero by 2050 , https://www.iea.org/reports/net-zero-by-2050
[57] IEA (2021), Net Zero by 2050, https://www.iea.org/reports/net-zero-by-2050
[58] European Parliament (2024), Deal on new rules to reduce CO2 emissions from trucks and buses, https://www.europarl.europa.eu/news/en/press-room/20240118IPR16893/deal-on-new-rules-to-reduce-co2-emissions-from-trucks-and-buses
[59] https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52011DC0144
[60] IEA (2023), Net Zero Roadmap, 2023 Update, https://www.iea.org/reports/net-zero-roadmap-a-global-pathway-to-keep-the-15-c-goal-in-reach
[61] DNV (2025), DNV Energy Transition Outlook 2025, https://www.dnv.com/energy-transition-outlook/2025/.

of 15 January 2026, of the 110 NDCs 3.0 submitted, only 45 NDCs, representing 41% of all submissions, included mitigation actions related to freight transport or a combination of freight and passenger transport. Parties to the Paris Agreement therefore need to place greater emphasis on freight transport in their 2030 NDC submissions.[62]

Most importantly, even if all current NDCs 3.0 were fully implemented, the world would still be heading towards global warming of 2.3–2.5°C above pre-industrial levels by the end of the century. Deeper and more rapid greenhouse gas emission reductions are required to reduce the severe impacts of climate change.[63]

Stakeholders:
- First movers: Governments (across all income groups but the NDC has to reflect its common but differentiated responsibilities and respective capabilities, in the light of different national circumstances).

Supporting examples:

- Costa Rica's NDC outlines high investments in the freight sector. The country plans to invest USD 6.2 billion in sustainable logistics (unconditional) and USD 840 million in freight rail (conditional).[64]
- Djibouti's NDC aims to increase the number of electric tricycles powered by solar energy to replace gasoline-powered tricycles for goods transport.[65]
- Kyrgyzstan's NDC is committed to the creation of 'Green Trade Corridors' with a focus on rail and electric transport.[66]
- Sri Lanka's NDC seeks to modernise its railway services by expanding infrastructure, electrifying railways, establishing urban freight hubs and developing port–rail freight corridors.[67]

Raise carbon pricing aligned to necessary decarbonisation pathways

Pricing measures are needed to reflect the costs imposed by each freight transport mode on society and the environment. Such measures can guide market forces towards the most sustainable services across supply chains.

[62] GIZ and SLOCAT (2026), NDC Transport Tracker, https://changing-transport.org/tracker/
[63] UN Environment Programme (2025), Emissions Gap Report 2025, https://www.unep.org/resources/emissions-gap-report-2025
[64] MINISTERIO DE AMBIENTE Y ENERGÍA (2025), Contribución Nacionalmente Determinada 2025-2035, https://unfccc.int/sites/default/files/2025-11/CND-2025-2035.pdf
[65] République de Djibouti (2025), CONTRIBUTION DÉTERMINÉE AU NIVEAU NATIONAL DE DJIBOUTI (CDN de DJIBOUTI), https://unfccc.int/sites/default/files/2025-11/CDN%20revisee_Djibouti_Novembre%202025.pdf
[66] Kyrgystan (2025), NATIONALLY DETERMINED CONTRIBUTION OF THE KYRGYZ REPUBLIC, https://unfccc.int/sites/default/files/2025-10/NDC3.0_Kyrgyzstan_English_30-09-2025%20%282%29.pdf
[67] Sri Lanka (2025), NATIONALLY DETERMINED CONTRIBUTIONS 3.0 (2026 – 2035), https://unfccc.int/sites/default/files/2025-09/Sri%20Lankas%20Nationally%20Determined%20Contributions%203.0%20%282026-2035%29%20submitted%2022.09.2025%20%281%29.pdf

By 2030 at the latest, comprehensive carbon pricing instruments should be implemented in every country and applied across all polluting transport modes. Where such instruments are already in place, carbon pricing levels can be increased to further support decarbonisation efforts.

Related intervention area:
Pricing and fiscality reflecting the entire costs (2)

Stakeholders:
- First movers: Governments (to raise carbon prices and ensure a functioning carbon market)
- Followed by: Companies (to comply with regulations)

Supporting examples:

- In the case of maritime transport, a proposal that could put the sector on a decarbonisation pathway points to a carbon price of at least USD 300 per tonne CO_2 by 2030.[68] It then has to gradually increase by 2050.

Shift freight from roads to railways and/or inland waterways

Shifting the transport of goods from road to electrified rail and inland water transport constitutes one of the most cost-effective measures to reduce CO_2 emissions from freight transport, while also offering to lower the external costs linked to accidents, air and noise pollution, congestion, and habitat damage.[69] A modal shift of freight depends on various factors (geographic context, infrastructure, types of goods, demand etc.).

Related intervention area:
Shift to the most efficient, low-carbon modes of transport and use of intermodal freight transport corridors across borders (1)

Stakeholders:
- First movers: Cargo owners and logistic companies (to ensure intermodality and modal shift strategies)
- Followed by: Governments (to develop infrastructure and provide incentives)

Supporting examples:

- **India** aims to raise the share of freight transported via railways from 27% in 2022 to 45% by 2030/31.[70]

[68] ITF (2022), Carbon pricing in shipping, https://www.itf-oecd.org/sites/default/files/docs/carbon-pricing-shipping.pdf.
[69] Bullock, R., Lawrence, M. and J. Moody (2023), Unlocking Green Logistics for Development, Mobility and Transport Connectivity Series, World Bank, http://documents.worldbank.org/curated/en/099102423134510604/P1748631851e145c112a61483d1abea15143644fd1e1; McKinnon, A. C. and M. Petersen (2021), Measuring Industry's Temperature: An Environmental Progress Report on European Logistics, DOI: 10.13140/RG.2.2.32088.72961. https://www.researchgate.net/publication/348465509_Measuring_Industry%27s_Temperature_An_Environmental_Progress_Report_on_European_Logistics
[70] Ministry of Railways (2022), National Rail Plan aims to increase share of freight traffic from current percentage of 27 to 45 by 2030, https://www.pib.gov.in/PressReleaseIframePage.aspx?PRID=1883514.

➔ **France** targets a rail freight share of 18% by 2030 and 25% by 2050 of rail freight.[71]

🌟 Only electric vans are sold, while 65% of new trucks are electric

Only battery electric vans should be sold from 2035 onwards, allowing for a limited delay in markets facing higher barriers. Electric heavy trucks should reach a global share of 65% of new vehicle sales by 2035.[72]

Related intervention area:
Low-carbon freight transport infrastructure, operations, vehicles and renewable fuels (1)

Stakeholders:
- First movers: Governments and freight vehicle manufacturers in upper middle- and high-income countries;
- Followed by: Governments and freight vehicle manufacturers in lower middle- and low-income countries;

Supporting examples:

- In the EU, 100% of new van sales will be zero-emission by 2035.[73] Truck manufacturers are mandated to cut the average emissions of new trucks by 65% by 2035.[74]
- Urban freight fleet in ASEAN to be composed of 40% eco-friendly vehicles and 25% of freight transport shifted to multimodal solutions by 2035.[75]

🌟Every city is equipped with zero-emission zones and sustainable urban logistics plans

Urban freight policies should be guided by sustainable urban logistics plans (SULPs) or sustainable urban mobility plans (SUMPs). By 2035, cities should have the legal frameworks in place to introduce zero-emission freight zones.

Related intervention area:

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[71] Briand, Y., Combes, F., Nierat, P. and H. Waisman (2020), How the Rail Freight Development Strategy can strengthen the sector's ambition in France, https://www.iddri.org/sites/default/files/PDF/Publications/Catalogue%20Iddri/D%C3%A9cryptage/202012-IB0620-EN-freight%20france.pdf

[72] IEA (2023), Net Zero Roadmap, 2023 Update, https://www.iea.org/reports/net-zero-roadmap-a-global-pathway-to-keep-the-15-c-goal-in-reach

[73] European Council (2024), Fit for 55, https://www.consilium.europa.eu/en/policies/green-deal/fit-for-55/#:~:text=The%20European%20climate%20law%20makes,EU%20climate%2Dneutral%20by%202050.&text=What%20is%20the%20Fit%20for%2055%20package%3F

[74] European Parliament (2024), Deal on new rules to reduce CO2 emissions from trucks and buses, https://www.europarl.europa.eu/news/en/press-room/20240118IPR16893/deal-on-new-rules-to-reduce-co2-emissions-from-trucks-and-buses

[75] ASEAN (2024), ASEAN Guidelines on Urban Freight Transport, https://asean.org/wp-content/uploads/2024/11/ASEAN-Guidelines-UFT_ISBN.pdf.

Zero-emission zones and sustainable urban logistics plans (3)

Stakeholders:
- First movers: Local governments to implement regulations and zones within their jurisdiction.

Supporting examples:

- ASEAN urban freight guidelines recommend complete alignment of freight policies with SUMPs/SULPs frameworks by 2035.[76]

🌟 Only electric trucks are sold

Only battery electric medium- and heavy-duty vehicles should be sold globally from 2040 onwards, allowing for a limited delay in markets facing higher barriers.[77]

Related intervention area:

Targets to phase out internal combustion engine vans and trucks and achieve sales of new electric or fuel cell electric freight vehicles (1)

Stakeholders:
- First movers: Governments and freight vehicle manufacturers in upper middle- and high-income countries.
- Followed by: Governments and freight vehicle manufacturers in lower middle- and low-income countries.

Supporting examples:

- New fossil-fuelled ICE truck sales end in 2040 in advanced economies and China, and in 2045 in the rest of the world.[78]
- California (United States) requires all medium- and heavy-duty trucks to be zero-emission by 2042, enabled through a sales ban of fossil fuel-powered vehicles in 2035.[79]
- In the EU, truck manufacturers are mandated to cut the average emissions of new trucks by 90% by 2040.[80]

[76] ASEAN (2024), ASEAN Guidelines on Urban Freight Transport, https://asean.org/wp-content/uploads/2024/11/ASEAN-Guidelines-UFT_ISBN.pdf.
[77] CALSTART (2023), Global Memorandum of Understanding on Zero-emission Medium- and Heavy-duty Vehicles, https://globaldrivetozero.org/mou-nations/
[78] IEA (2023), Net Zero Roadmap, 2023 Update, https://www.iea.org/reports/net-zero-roadmap-a-global-pathway-to-keep-the-15-c-goal-in-reach
[79] California Air Resources Board (n.d.), New California requirements for on-road and off-road heavy-duty vehicles, https://ww2.arb.ca.gov/new-california-requirements-road-and-road-heavy-duty-vehicles
[80] European Parliament (2024), Deal on new rules to reduce CO2 emissions from trucks and buses, https://www.europarl.europa.eu/news/en/press-room/20240118IPR16893/deal-on-new-rules-to-reduce-co2-emissions-from-trucks-and-buses

Adapt universal access to open freight data

All freight and logistics stakeholders and public authorities should have open data systems in place.

Related intervention area:
Mandatory disclosure through open data and transparency standards (4)

Stakeholders:
- First movers: Governments (to raise carbon prices and ensure a functioning carbon market)
- Followed by: Companies (to comply with regulations)

Supporting examples:
- → ASEAN cities will ensure that they have open freight data systems by 2040.[81]

Raise carbon pricing to high levels

By 2040, comprehensive carbon pricing instruments should be further strengthened to ensure that polluting transport modes are phased out as soon as possible.

Related intervention area:
Pricing and fiscality reflecting the entire costs (2)

Stakeholders:
- First movers: Governments (to raise carbon prices and ensure a functioning carbon market)
- Followed by: Companies (to comply with regulations)

Supporting examples:
→ Studies point to a potential carbon price in maritime transport of USD 673-874 per tonne of CO_2 by 2040 to be aligned to a decarbonisation pathway.[82]

🌟 Decarbonised freight transport achieved

By 2050, the share of oil use in transport is expected to decline to around 10%,[83] while electricity accounts for nearly 45% of total final energy consumption. Hydrogen-based fuels are projected to account for 28%, and bioenergy for 16%.[84] End-of-life strategies for internal combustion engine vehicles will be in effect, enabling a swift transition to low-carbon vehicles.

The following global targets by mode should be achieved:
- → For rail transport:
  - 96% share of electricity and hydrogen in total energy consumption in rail by 2050[85]

[81] ASEAN (2024), ASEAN Guidelines on Urban Freight Transport, https://asean.org/wp-content/uploads/2024/11/ASEAN-Guidelines-UFT_ISBN.pdf.
[82] ITF (2022), Carbon pricing in shipping, https://www.itf-oecd.org/sites/default/files/docs/carbon-pricing-shipping.pdf.
[83] IEA (2021), Net Zero by 2050, https://www.iea.org/reports/net-zero-by-2050
[84] IEA (2021), Net Zero by 2050, https://www.iea.org/reports/net-zero-by-2050
[85] IEA (2021), Net Zero by 2050, https://www.iea.org/reports/net-zero-by-2050

        - 65% of rail lines electrified by 2050[86]
    - For shipping:
        - 93% low-carbon fuel adaptation **by 2046.**[87]
        - By 2025, 19% biofuel use, 44% ammonia use, and 19% hydrogen use[88]
    - For road transport:
        - Wide provision of EV charging units (200 million EV public charging units by 2050) and hydrogen refuelling units (90,000 units by 2050).[89]
        - 41% biofuel blending in oil products in 2050.[90]

These values are modelled at the global level based on the cited sources. Efforts by each country should reflect national circumstances. A more ambitious transition would enable the transport sector to make a stronger contribution to economy-wide decarbonisation.

Related intervention area:
Low-carbon freight transport infrastructure, operations, vehicles and renewable fuels (1)

Stakeholders:
- First movers: Governments (to raise carbon prices and ensure a functioning carbon market)
- Followed by: Companies (to comply with regulations)

🌟Shift 45-50% of goods from road to railways and/or inland waterways

Further shifts of goods away from road transport are important to accommodate projected increases in demand. These shifts can be enabled through integrated freight transport plans at national and sub-national levels. Improved planning is a core element of demand management approaches, which can reduce emissions from harder-to-abate transport sectors by up to 20% by 2050.[91]

Related intervention area:
Shift to the most efficient, low-carbon modes of transport and use of intermodal freight transport corridors across borders (1)

Stakeholders:
- First movers: Cargo owners and logistic companies (to ensure intermodality and modal shift strategies).
- Followed by: Governments (to develop infrastructure and provide incentives).

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[86] IEA (2021), Net Zero by 2050, https://www.iea.org/reports/net-zero-by-2050
[87] Global Maritime Forum (2025), A guide to the Net-Zero Framework's reward mechanism, https://globalmaritimeforum.org/news/a-guide-to-the-net-zero-frameworks-reward-mechanisms/; Safety4Sea (2021), Shipping decarbonization requires 5% zero emission fuels by 2030, study reveals, https://safety4sea.com/shipping-decarbonization-requires-5-zero-emission-fuels-by-2030-study-reveals/
[88] IEA (2023), Net Zero Roadmap, 2023 Update, https://www.iea.org/reports/net-zero-roadmap-a-global-pathway-to-keep-the-15-c-goal-in-reach
[89] IEA (2021), Net Zero by 2050, https://www.iea.org/reports/net-zero-by-2050
[90] IEA (2021), Net Zero by 2050, https://www.iea.org/reports/net-zero-by-2050
[91] Energy Transitions Commission (2018), Mission Possible - Reaching Net-Zero Carbon Emissions from Harder-to-abate sectors by mid-century, https://www.energy-transitions.org/wp-content/uploads/2020/08/ETC_MissionPossible_FullReport.pdf

Supporting examples:

- **In the EU,** more than 50% of road freight over 300 km should shift to other modes such as rail or waterborne transport by 2050, facilitated by efficient and green freight corridors. To meet this goal will also require appropriate infrastructure to be developed.[92]

[92] European Commission (2011), White Paper, Roadmap to a Single European Transport Area – Towards a competitive and resource efficient transport system, https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52011DC0144