# Reader's guide

## How to read the *ITF Transport Outlook 2021*

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| Chapter 1<br>***Reshaping transport for a cleaner environment and fairer societies*** | Understand the broader theme of this *Transport Outlook*:<br>• Introduces the realities of climate change and inequality, and the role of transport in both.<br>• Recommends three policy priorities for equitable and sustainable transport systems, policy alignment, collaboration and a focus on accessibility.<br>• Summarises the short and long-term impacts of Covid-19 on transport. Covered in more detail in Chapters 3 to 5<br>• Population trends including urbanisation, gender and ageing<br>• Economic trends including GDP growth and trade, and the assumptions made in the ITF models |
| Chapter 2<br>***Pathways to decarbonise transport by 2050*** | An overview of modelling results<br>• Presents an aggregate summary of transport demand, $CO_2$ emissions and equity considerations under the three policy scenarios across all policy sectors |
| Chapter 3<br>***Urban passenger transport: Cities can make mobility sustainable, equitable and resilient*** | A detailed look at an equitable and sustainable transition for each transport sector. Topics covered include:<br>• The state of decarbonisation in the sector and key strategies for the future<br>• Impacts of Covid-19 on the sector in the short term, and the opportunities and challenges ahead<br>• Details on the policy scenarios for the specific chapter<br>• Projections for transport activity under policy scenarios<br>• Projections for $CO_2$ emissions (and local pollutants in Chapter 3) under policy scenarios<br>• The equity impacts of the policy scenarios and a discussion on making sure decarbonisation policies are equitably implemented<br>• Policy recommendations |
| Chapter 4<br>***Non-urban passenger transport: A pivotal sector for greening transport*** | |
| Chapter 5<br>***Freight transport: Bold action can decarbonise movement of goods*** | |

## Glossary

The following table defines key terms used in the *ITF Transport Outlook 2021* including transport modes, transport policy measures and exogenous factors considered in each of the policy scenarios, scenario definitions and more.

| Term | Definition |
|---|---|
| **3D printing** | An additive printing technology that creates 3D products through the successive addition of very thin layers of material. |
| **Active and micromobility** | In the context of this *Transport Outlook,* walking, cycling, scooters and all forms of e-micromobility that are privately owned or shared. |
| **Active transport modes** | Travel undertaken by foot, bicycle or other human-powered modes. |
| **Air connectivity** | Refers to the density, extensiveness, and directness of destinations in a transport network. |
| **Autonomous vehicle** | A vehicle operated by a driving system that either assists or replaces humans in the driving task. Automation can be of different degrees according to the portion of the operations the driving system can conduct without human intervention. |
| **Biofuel** | Fuels that are directly or indirectly produced from organic material, i.e. biomass, such as plant materials or animal waste. In this publication, biofuel refers to liquid biofuels, such as ethanol or biodiesel. |
| **Car** | A road motor vehicle, other than a moped or a motorcycle, primarily designed to carry one or more persons. This includes SUVs and is equivalent in the text to passenger light-duty vehicles (PLDVs). |
| **City** | Used as a generic term to designate all urban agglomerations. The boundaries of a city in the Transport Outlook tend to go beyond administrative boundaries (see *Functional urban area*). |
| **Congestion** | The relative travel time-loss at the peak traffic hour on the road network due to slower travel speeds. |
| **Direct emissions** | Tank-to-Wheel/-Wake emissions. |
| **Eco-driving** | Driver training whereby drivers are trained to adopt a more fuel-efficient driving style. |
| **E-commerce** | The sale or purchase of goods or services, conducted over computer networks by methods specifically designed to receive or place orders. |
| **Freight transport demand/activity** | A measure of the volume of freight travel, measured in tonne-kilometres. |
| **Functional urban area (FUA) or macro FUA** | Macro FUAs are aggregations of FUAs defined by the joint EC-OECD Cities in the World project and identified in the UN DESA World Urbanization Prospect 2018 project (United Nations, 2019; OECD/European Commission, 2020). |
| **Gig economy** | Work characterised by short-term contracts and freelance work. For example, in the transport sector, drivers in the app-based ridesharing and delivery industry are considered gig workers. |
| **Indirect emissions** | Well-to-tank emissions as well as those associated with the construction of infrastructure, manufacturing of vehicles etc. |
| **Inter-city travel** | Transport activity happening between cities/urban areas. |
| **Local pollutants** | Elements of ambient air pollution, including emissions of mono-nitrogen oxides (NOx), sulphate (SO4) and fine particulate matter (PM2.5). |
| **Mobility as a service (MaaS)** | Digital platforms that enable demand-responsive route optimisation across modes, including dockless micro-mobility modes. |

| Term | Definition |
|---|---|
| **Mode** | Refers to the method of transport service. E.g. road, rail, waterway, air or private car, powered two-wheelers, bus, metro, or urban rail. |
| **Mode split/mode share** | Percentage of total passenger-kilometres or trips accounted for by a single mode of transport. Values should specify whether mode split/share is calculated based on trips of passenger-kilometres. Percentage of total freight tonne-kilometres accounted for by a single-mode. |
| **Motorcycle** | Powered two-wheeled vehicles, motorcycles and scooters, equivalent in this text to two-wheelers. |
| **New Policies Scenario** | The New Policies Scenario serves as the IEA baseline scenario. It takes account of broad policy commitments and plans that have been announced by countries, including national pledges to reduce greenhouse gas emissions and plans to phase out fossil-energy subsidies, even if the measures to implement these commitments have yet to be determined. |
| **Paratransit** | Public transport-like services operating under unclear regulatory frameworks. Paratransit is more common in developing countries where they serve a significant role in the transport system, operating in parallel to formal services. The term is also used in the United States and Canada to mean on-demand transport services, typically used by the elderly or those with mobility restrictions who find it difficult to use fixed-route systems. However, these services are not included in the Transport Outlook's definition of paratransit. |
| **Passenger transport demand/activity** | A measure of the volume of passenger travel, measured in passenger-kilometres. |
| **Passenger-kilometres (pkm)** | Unit of measurement for passenger transport activity representing the transport of one passenger over a distance of one kilometre. |
| **Physical Internet** | An open, shared global logistics system. It takes asset sharing and collaboration to its maximum potential. It is one global transport network using shared hubs. Such a system would require new standardised modular-packaging units, common protocol and tools, and shared logistics and digital assets. |
| **Private vehicles** | Private motorised vehicles including motorcycles and cars. |
| **Public transport** | Public transport services served by bus, metro, tram, and rail. |
| ***Recover* scenario** | The least ambitious policy scenario modelled in this *Transport Outlook*. *Recover*, our current trajectory, includes existing commitments for decarbonisation and assumes governments prioritise economic recovery by reinforcing established economic activities. |
| **Regional travel** | Transport activity happening outside urban areas (rural, peri-urban areas). |
| ***Reshape* scenario** | An ambitious policy scenario modelled in this *Transport Outlook*. *Reshape*, assumes a strong set of decarbonisation policies, characterised by pro-active policy action which responds to environmental challenges in the transport sector and supports the United Nations Sustainable Development Goals (UN SDGs). |
| ***Reshape*+ scenario** | The most ambitious policy scenario modelled in this *Transport Outlook*. The *Reshape*+ scenario further reinforces some of the policies of *Reshape* based on opportunities for decarbonisation presented by the pandemic, such as encouraging certain trends and changes in travel behaviour. It enables the world to reach climate change mitigation goals faster and with more certainty. |
| **Shared mobility** | In the context of this *Transport Outlook,* this includes taxis, taxi-buses, and ridesharing. The modelled shared mobility results do not include shared micromobility (see 'active and micromobility'). |
| **Shared transport** | If discussing both together, shared mobility and shared vehicles are sometimes referred to as shared transport. |

| Term | Definition |
|---|---|
| **Shared vehicles** | Shared ownership schemes for cars and motorcycles. |
| **Slow steaming** | Slow steaming is reducing the speed to decrease fuel consumption, saving costs and cutting emissions. Mostly discussed in the context of maritime transport, but it can be generalised to other non-urban freight transport modes. |
| **Tank-to-wheel emissions** | Emissions generated from the use of transport vehicles. Also known as tailpipe emissions. It does not include well-to-tank emissions, which make up part of the total emission pathway (well-to-wheel). |
| **Teleworking** | Carrying out work at a location that is remote from the employer's office while staying connected to the office via network technologies. |
| **Three-wheeler** | Powered three-wheeled vehicles, such as auto-rickshaws in India. |
| **Tonne-kilometres (tkm)** | Unit of measurement of goods transport which represents the transport of one tonne of goods over a distance of one kilometre. |
| **Trade regionalisation** | Current developments might indicate a more regionalised trade system in the future with increased trade exchanges within regions or trade blocks and a relative decrease of longer distance intra-regional trade. Emerging economies have gained a larger share in global trade and increasingly trade with each other. One of the major trends in trade policy is the continuous increase in preferential trade agreements at a regional level. Especially in Asia, intra-regional trade has increased in relative and absolute terms. For example, the share of Chinese exports directed to emerging and developing Asian countries has grown considerably in the last decade, accelerating in the most recent years. |
| **Transit-oriented development** | A dense development with access to public transport within walking distance and characterised by a mix of residential, employment, commercial and other uses. |
| **Two-wheelers** | Powered two-wheeled vehicles, motorcycles and scooters; equivalent in this text to motorcycles. |
| **Vehicle-kilometre** | A unit of measurement for freight and passenger transport demand that represents the movement of a single vehicle over a distance of one kilometre. |
| **Well-to-tank emissions** | Emissions generated from the production and transport of fuel (or another energy source such as electricity) for transport vehicle use. |
| **Well-to-wheel emissions** | The total emissions associated with transport vehicle use. Including well-to-tank (indirect) and tank-to-wheel (direct) emissions. |

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