Reader's guide

How to read the ITF Transport Outlook 2023

Chapter 1 **The outlook for transport: Speedy recovery, new uncertainties**	An overview of the context in which this Outlook was developed, including: • the most pressing political, economic and demographic factors influencing transport demand and policy-making processes • a review of what impacts were observed due to Covid.
Chapter 2 **Decarbonising transport: Scenarios for the future**	An overview of the assumptions underpinning the two policy scenarios explored in Chapters 3-6 (the Current Ambition and High Ambition scenarios) and the key results for demand and emissions projections.
Chapter 3 **Managing transport demand: Offering attractive choices**	A detailed look at the demand management and mode-shift policy measures included in the two policy scenarios.
Chapter 4 **Cleaner fleets: The key to decarbonising transport**	A detailed look at the evolution of maritime, aviation and road vehicles and fuels and the policies required to increase low- and zero-emission transport.
Chapter 5 **Liveable cities: The broader benefits of transport decarbonisation**	Examines indicators for co-benefits of decarbonisation policies, including equity considerations. The indicators include: • emissions of other air pollutants • road safety • accessibility and affordability • congestion and space consumption.
Chapter 6 **Investing in the future: The financial implications of decarbonising transport**	A consideration of some financial aspects of the Current Ambition and High Ambition scenarios. The chapter looks at the investment needs of infrastructure required to cater to demand under the two scenarios, the investment needs for the charging networks potentially needed to support the uptake of electric vehicles, and the future of diminishing fuel-tax revenues.

Glossary

The following table defines key terms used in the *ITF Transport Outlook 2023* including transport modes, transport policy measures and exogenous factors considered in each of the policy scenarios, scenario definitions and more.

Term	Definition
Active mobility and micromobility	In the context of this edition of the *ITF 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.
"Decide and provide"	An approach to transport planning that involves making investments that are strategically aligned to a vision of the future transport system, in contrast to the "predict and provide" approach, which involves providing infrastructure in response to existing or projected demand (Lyons et al., 2015[1]).
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 (UN DESA, 2019[2]; OECD/European Commission, 2020[3]).
Income classifications	The classifications in this report are based on the World Bank's *World Development Index* (2022[4]). A reporting region is denoted as "Low-income", "Lower-middle-income", "Upper-middle-income" or "High-income" based on the World Bank category into which the majority of the economies in the region fit.
Intercity 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 micromobility modes.
Mode	Refers to the method of transport service. For example, road, rail, waterway, air or private car, powered two-wheeler, 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.
Motorcycle	Powered two-wheeled vehicles, motorcycles and scooters, equivalent in this text to two-wheelers.
Net Zero	According to the United Nations, "net zero means cutting greenhouse gas emissions to as close to zero as possible, with any remaining emissions re-absorbed from the atmosphere, by oceans and forests for instance" (UN, n.d.[5]).
Informal public transport (PT)	Public transport-like services operating under unclear regulatory frameworks. Paratransit is more common in developing countries where such services play 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 *ITF Transport Outlook* definition of paratransit.

Passenger transport demand/activity	A measure of the volume of passenger travel, measured in passenger-kilometres.
Passenger-kilometre	Unit of measurement for passenger transport activity representing the transport of one passenger over a distance of one kilometre.
"Predict and provide"	An approach to transport planning that involves making infrastructure investment decisions in response to existing or projected demand.
Private motorised vehicles	Private vehicles including motorcycles and cars.
Proxy indicator for crash risk	An indicator developed by the ITF to estimate the risk of potential conflicts between pairs of travel modes (e.g. pedestrians and passenger cars) using the same street. These indicators account for total vehicle volumes, the difference in average travel speed between the modes, and the degree of longitudinal separation between the modes. However, they do not include potential conflict with urban freight vehicles.
Public transport	Public transport services served by bus, metro, tram, and rail.
Regional travel	Transport activity happening outside urban areas (i.e. in rural, peri-urban areas).
Shared mobility	In the context of the *ITF 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.
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.
Sustainable aviation fuel (SAF)	Liquid drop-in fuels that are compatible with existing aircraft.
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 vehicle, such as auto-rickshaws in India.
Tonne-kilometre	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-wheeler	Powered two-wheeled vehicle, motorcycle or scooter; 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.

Reporting regions

The following table defines the regions referred to in the modelling for the *ITF Transport Outlook 2023.*

Name/acronym	Reporting region
Europe	European Economic Area and surrounding countries, including accession states to the European Union
ENEA	East and Northeast Asia
LAC	Latin America and the Caribbean
MENA	Middle East and North Africas
SEA	Southeast Asia
SSA	Sub-Saharan Africa
SSWA	South and Southwest Asia
TAP	Transition economies and other Asia Pacific
UCAN	United States, Canada, Australia and New Zealand

References

Lyons, G. et al. (2015), *Future Demand: How could or should our transport system evolve in order to support mobility in the future?*, Te Manatū Waka Ministry of Transport, Wellington, https://www.transport.govt.nz/assets/Uploads/Report/fd-final-report.pdf. [1]

OECD/European Commission (2020), *Cities in the World: A New Perspective on Urbanisation*, OECD Publishing, Paris, https://doi.org/10.1787/d0efcbda-en. [3]

UN (n.d.), *Net-Zero Coalition*, https://www.un.org/en/climatechange/net-zero-coalition (accessed on 5 May 2023). [5]

UN DESA (2019), *World Urbanization Prospects: The 2018 Revision*, UN Department of Economic and Social Affairs, Population Division, New York, https://population.un.org/wup/. [2]

World Bank (2022), *World Development Indicators: Country Income Classifications*, https://datahelpdesk.worldbank.org/knowledgebase/articles/378834-how-does-the-world-bank-classify-countries (accessed on 7 November 2022). [4]