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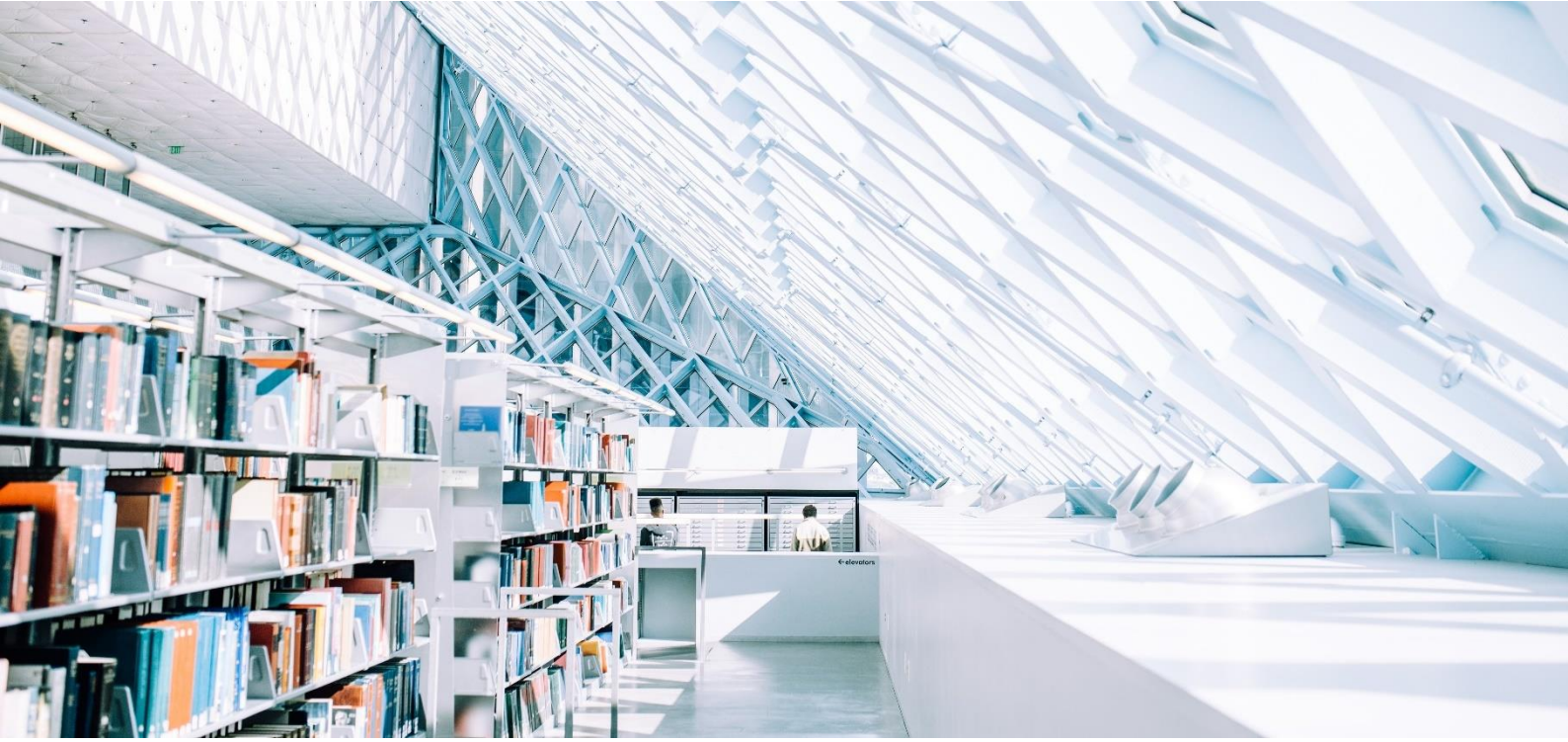
METRO VEHICLES – GLOBAL MARKET TRENDS

Forecast, Installed Base, Manufacturers, Infrastructure and Rolling Stock Projects

2024



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METRO VEHICLES – GLOBAL MARKET TRENDS
Forecast, Installed Base, Manufacturers, Infrastructure and Rolling Stock Projects

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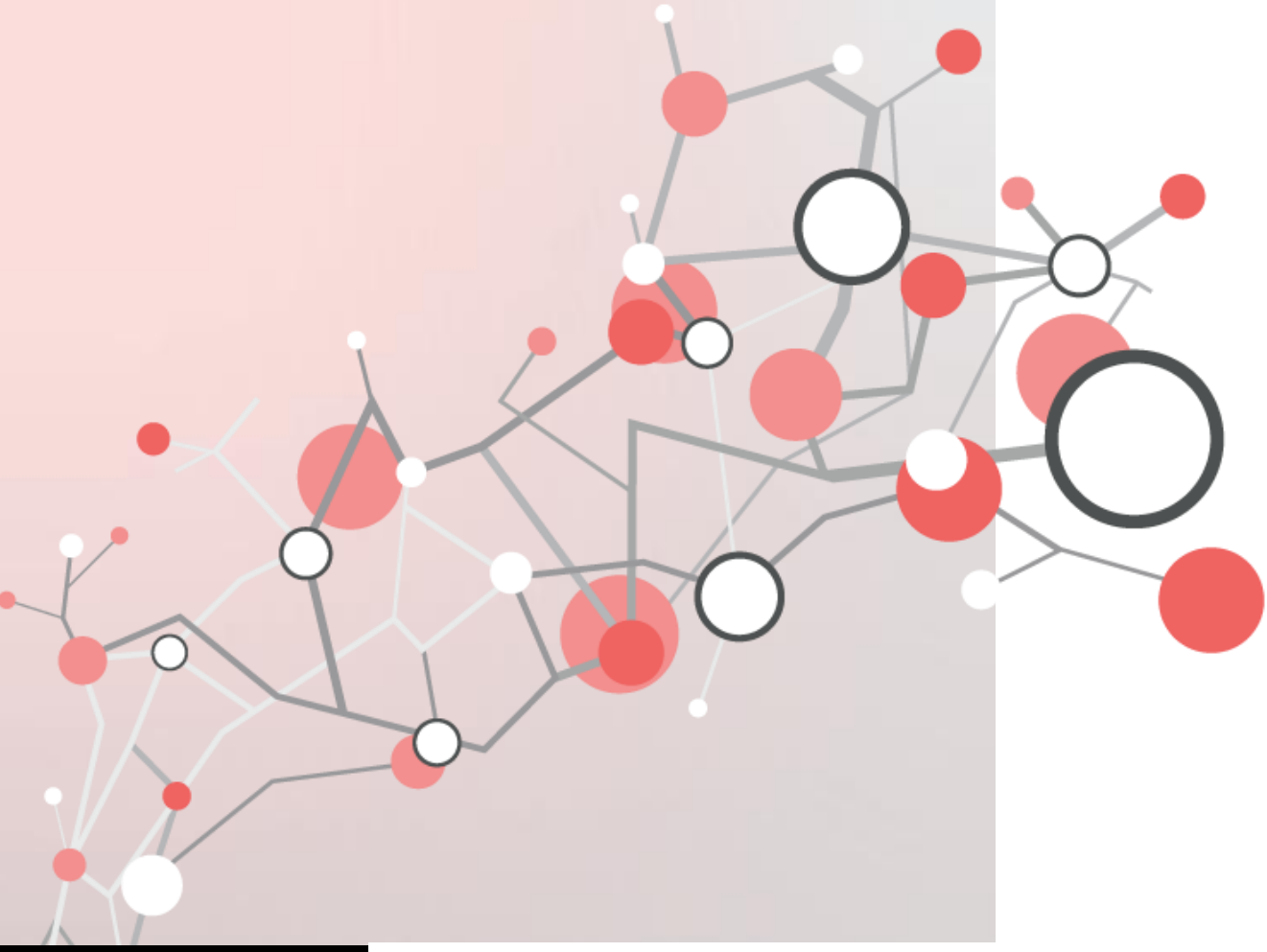

1 Executive Summary

Executive Summary

Market Overview

In an era marked by population growth, rapid urbanization, and an increasing emphasis on environmentally sustainable transportation solutions, the global metro market continues to evolve and expand. Despite experiencing short-term declines in the aftermath of the Covid-19 pandemic, the market for metro vehicles is poised for significant growth in the coming years. Recent data indicates a slight decline in the metro vehicle market, attributed to fluctuations in the original equipment manufacturer (OEM) market since its peak in 2020. However, projections suggest a robust growth trajectory, with the market volume expected to reach nearly EUR XX billion annually by 2030 and EUR XX billion by 2035.

In this comprehensive MultiClient study, SCI Verkehr offers insights into the longer-term market development up to 2035, forecasting persistent growth for the metro vehicle market. While the growth of the OEM market for new vehicles is expected to slow down after 2027 before gaining momentum again in 2032, the after-sales market is anticipated to benefit from the increased fleet size, driving its growth. The shifting dynamics of the metro market are evident in the changing landscape of OEM and after-sales markets. While the share of the OEM market has been declining in recent years, the after-sales market has surged, particularly in regions like Asia, Europe and North America. The growing fleet size, coupled with the demand for services, is a key driver of this trend.

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Market overview worldwide per region

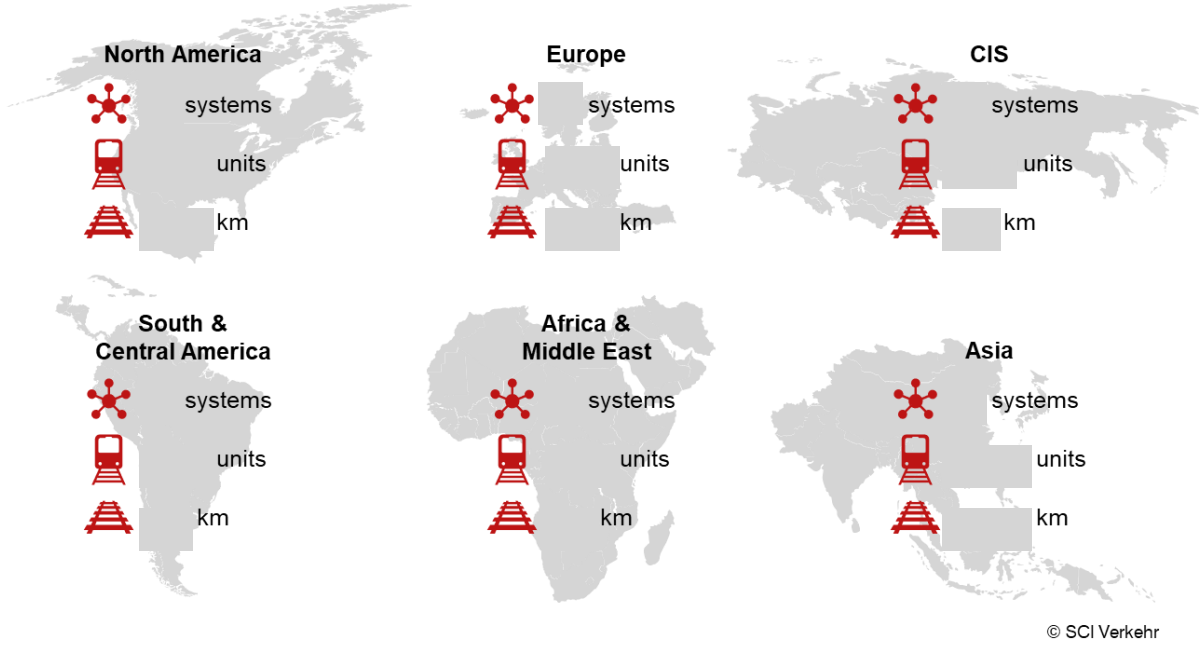
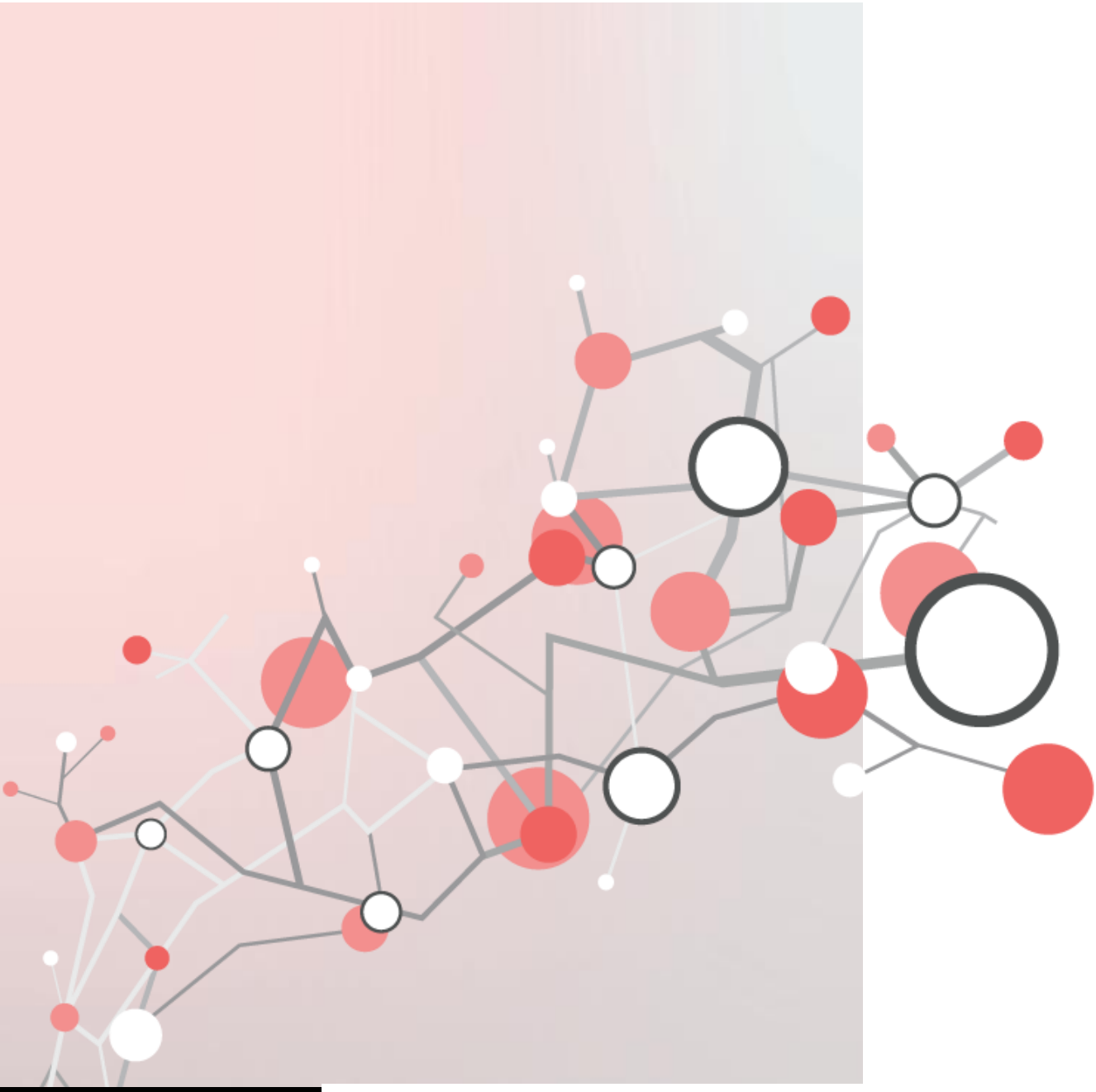


Figure 1: World: Metro market overview per region



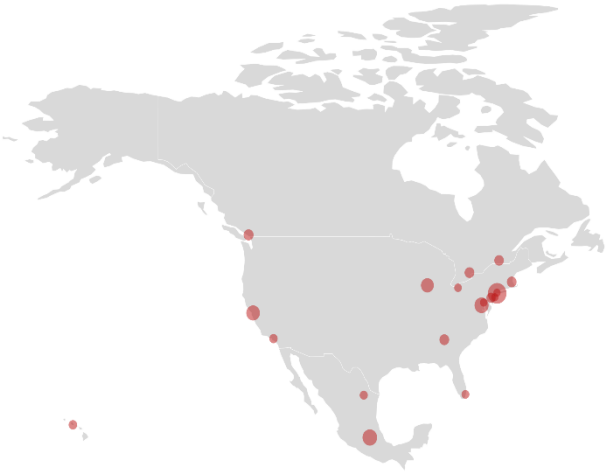
4 The market for metro vehicles in North America

2 North America

2.1 Total market

2.1.1 Market overview

North America



Metro network (km)				XX
Amount of metro systems				XX
	Size		**Avg. age** (years)	**CAGR** (2023-2027)
	Cars	Units		
Fleet ↗	XX	XX	XX	XX %
	Market volume (EUR million)			**CAGR** (2023-2027)
	2023		2027	
OEM ↑	XX		XX	XX %
After-sales ↑	XX		XX	XX %

Figure 2: North America: Metro market overview

North America is a large and still growing market with numerous metro systems (a total of 19 systems). Most of the systems are in the USA, which mainly localize on the coastlines and around the Great lakes. With XX, the XX th metro system will not open until 2023. Canada possesses metro systems in its largest cities Toronto, Montreal, and Vancouver. The metro in Vancouver is a driverless, elevated system. Mexico has three metro systems in Mexico City, Monterrey, and Guadalajara.

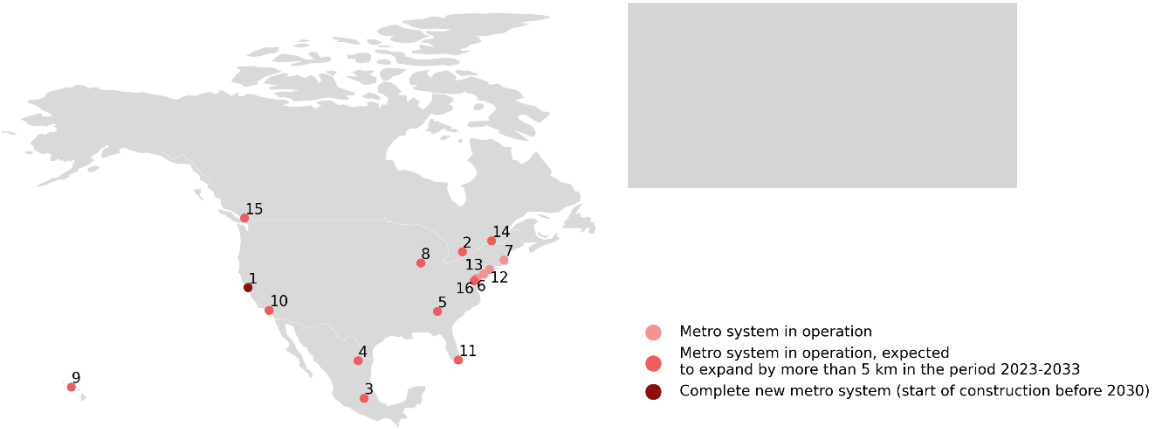


Figure 3: North America: Metro systems overview

North American metro systems are very heterogeneous. XX is one of the largest metros in the world. The cities of XX, XX and XX are also among the top 25 largest systems in the world. In addition, the three Canadian systems as well as the new metro in XX, the system in XX and XX are large metro systems. The remaining metros each have a fleet of less than XX units and a network length of less than XX km.

Rank	Country	City	Cars	Units	Average age	Route length in km	Operator
1	USA	New York					MTA New York City Transit
2	Mexico	Mexico City					Sistema de Transporte Collective
3	USA	Chicago					Chicago Transit Authority
4	USA	Washington					Washington Metropolitan Area Transit Authority
5	Canada	Montreal					Societe de Transport de Montreal
6	Canada	Toronto					Toronto Transit Commission
7	USA	San Francisco					San Francisco Bay Area Rapid Transit District (BART)
8	USA	Boston					Massachusetts Bay Transportation Authority
9	USA	Atlanta					Metropolitan Atlanta Rapid Transit Authority
10	Canada	Vancouver					(Vancouver) British Columbia Rapid Transit Company Ltd.

2.1.2 Infrastructure

As of 2023 the North American metro network amounted to almost XX km. In the past two years, nearly XX km of expansions have been completed in Washington, Los Angeles and Mexico City. In addition, the first phase of the Honolulu metro was completed and an XX km long section was opened.

Until 2035, the North American metro system is expected to grow by XX km to almost XX km, representing an annual growth rate of around XX %. However, delays in planning and construction processes can occur such as for the most recent planned opening in Honolulu, Hawaii, which was delayed by more than two years.

Metro system in operation in North America
(in km)

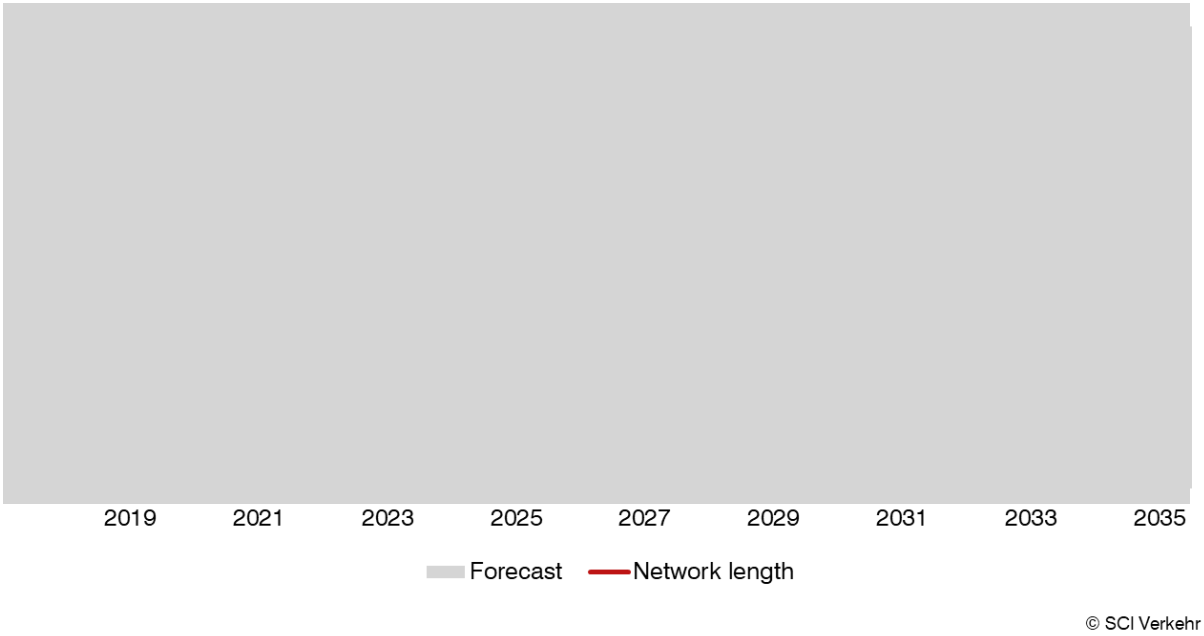


Figure 4: North America: Metro system infrastructure development

Since the infrastructure development of the US metro systems is dealt with in a separate chapter, the following will only cover infrastructure projects outside the USA. SCI Verkehr has identified infrastructure expansions with a total length of 150 km in Canada and Mexico that will be able to further boost the demand for vehicles until 2035. Thereby, the infrastructure expansions are split almost equally between Canadian and Mexican metro systems. The Canadian networks are expected to grow by 80 km towards the end of the 2030s, with most projects being advanced in Toronto, while the Mexican network is projected with an increase of 70 km, mainly lead by Mexico City.

Country	City	Project title	Distance in km	Expected completion	Project status
Canada	Montreal				
	Toronto				
	Vancouver				
Mexico	Mexico City				
	Monterrey				

Montreal: XX

Toronto: XX

Vancouver: XX

Mexico City: XX

2.1.3 Fleet

The North American fleet is dominated by the United States that host nearly XX % of the metro fleet in the region. Within the United States, MTA New York City Transit is the largest operator of metro vehicles in the region accounting for more than half of the US fleet and for more than one third of the entire fleet in North America. The metro system of New York City is not only the largest network and operator in the region, but also the largest metro system regarding its fleet in units.

The Sistema de Transporte Collectivo, as metro operator in Mexico City, operates most of the Mexican metro fleet. When considering the number of metro cars, Mexico City is among the 15 largest metro systems on the global scale.

Within the ten largest operators of metro vehicles in North America, the three Canadian networks of Montreal, Toronto and Vancouver are also included.

Fleet per market area in North America 2023
(units)

Figure 5: North America: Metro fleet per country 2023

The age distribution of metro vehicles in North America shows a wide distribution of ages with a median age of XX years. Procurement have increased continuously since the 1990s, mainly due to US vehicles. But outside the USA, the highest figure in over XX years was also reached for the 5-year span of 2019-23, with an average of almost XX vehicles delivered per year. However, there are still more XX metro units that have reached their economic life and exceed the age of XX years. In Canada and Mexico in particular, XX of the almost XX metro units are older than XX years.

Age structure in North America 2023 by USA and others
(based on procurement year; ~5,240 units)

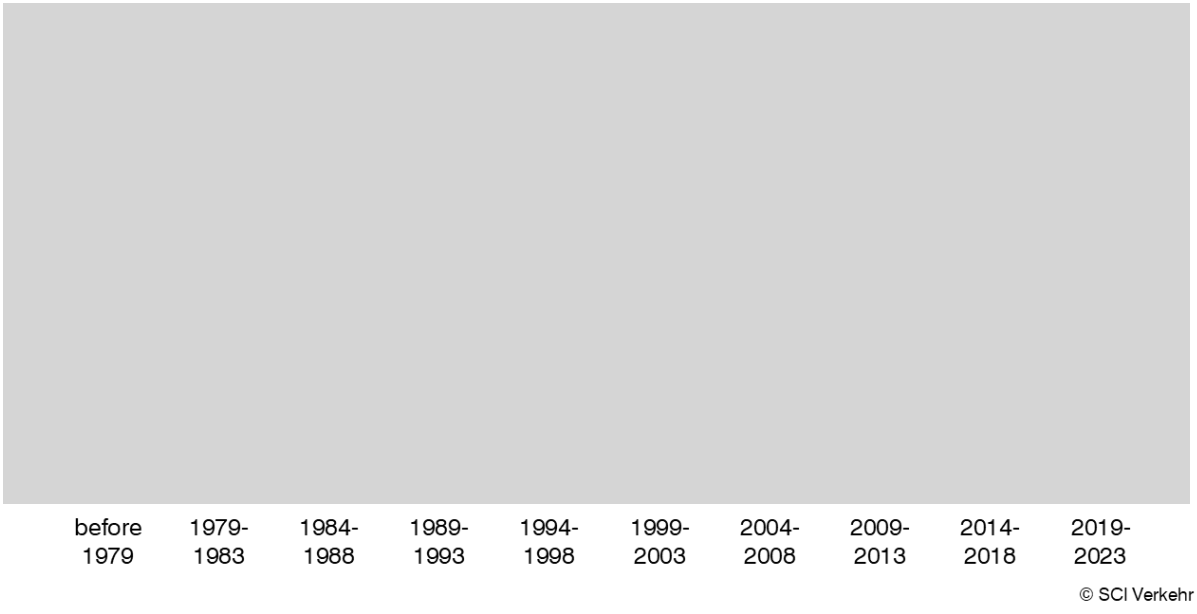


Figure 6: North America: Metro fleet age structure 2023

2.1.4 Manufacturers

The market share for metro vehicles in North America has been dominated by the XX for many years, however, in the last five years XX has gained the largest market share, accounting for XX of the market. XX's share shrank to XX.

Market shares per manufacturer in North America from 2019-2023
(in % of units)

Figure 7: North America: Market shares of manufacturer from 2019-23

Manufacturer	Activity (Brief description)	Units delivered

Various contracts for new metro vehicles have already been awarded in the region for the coming years. As expected, XX has a strong presence in Canada with signed contracts for XX. However, XX has been awarded the contract for XX new units for XX. XX, however, will continue to deliver the new vehicles in XX. It is currently not known which manufacturers will meet Mexico City's urgent need for new vehicles. Developments in the USA are discussed in a separate chapter.

2.1.5 Market volume & development

As previously outlined, the market volume and development until 2035 for the North American market is projected to further grow given the aging installed base that still requires further modernisation. Within the second half of the 2020s, market volume measured in EUR will range above EUR XX billion annually, however, in the early 2030s is expected to slightly decline. Moreover, the announced infrastructure expansions until 2030, will further drive market volume. The market for after-sales is expected to constantly increase.

Market Volume in North America
(in EUR million)

Figure 8: North America: Market volume

Drivers	Brief description	Relevance	Trend
Fleet structure	–		
Infrastructure development	–		
Financial resources	–		
Mobility demand	–		
Environment and sustainability	–		

Relevance for procurement: ▮▮▮ = very high, ▮▮▯ = high, ▮▯▯ = medium, ▮▯▯ = low, ▯▯▯ = none

5-year trend: ↑ = strongly increasing, ↗ = increasing, → = constant, ↘ = decreasing ↓ = strongly decreasing

In the region, SCI Verkehr has identified the following procurements for metro vehicles outside the US in the upcoming years.

Country	City	Units	Cars	Type	Delivery	Remarks
Canada						
Mexico						