

# 2024 EMTA BAROMETER

on Public Transport in Metropolitan Areas





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### **A FRESH LOOK AT EUROPEAN PUBLIC TRANSPORT**

I am delighted to present the 2024 edition of the EMTA Barometer, a comprehensive resource for public transport statistics in Europe. This year, we welcome five new public transport authorities (PTAs) representing the regions of Athens, Brussels, Bucharest, Sofia, and Toulouse. The now 35 EMTA members orchestrate daily mobility for over 106 million people across Europe.

Since its launch in 2002, the Barometer has been a cornerstone for local public transport data. This year is particularly exciting! For the first time, the report is published within six months of the most recent data (2023), offering a major boost in timeliness. With special care given to quality assurance and data comparability, this 2024 edition represents a leap forward. A heartfelt thank you goes to all EMTA members for their data contributions. Special recognition goes to the Barometer working group and committee for their dedication.

This report sheds light on the significant changes since 2020. These include new travel patterns impacting ridership, staff shortages affecting service delivery and costs, diverse fare policies, imbalanced economics, and efforts to decarbonise bus fleets.

But a static report can't fully showcase the rich 11-year data series, now including three additional years. Explore our new online dashboard for full and open-data access: [bit.ly/emta-barometer](https://bit.ly/emta-barometer)

Our figures depict a challenging economic environment that coincides with a crucial time for public transport when it must undergo major transformations. These include digitalisation, decarbonisation, increased resilience, and a renewed push for modal shift. This report highlights the slow pace of bus fleet decarbonisation in many regions, suggesting a significant funding gap remains. In this "new normal" of public transport economics, coupled with transition challenges, the question of funding becomes more critical than ever.

## EXECUTIVE SUMMARY

Public transport ridership in 2023 increased by 10% year-on-year, yet still remains below 2019 levels for most EMTA members.

Public transport operation costs average around 1% of local GDP in most metropolitan areas. However, strong inflation and staff shortages have contributed to a surge in costs: most PTAs report an 11% or greater cost increase from 2019 to 2023.

Low ridership and high cost naturally reduce the percentage of operating cost that is funded by fare revenue, what is called fare coverage, down to about 40%. Since 2019, most EMTA members have seen at least an 8-point decline in fare coverage. Policies towards cheaper public transport, observed in Germany, Austria and Spain, have contributed to lowering the fare coverage even further.

The process of decarbonising the bus fleet is happening faster in the North of Europe than elsewhere. For many regions, it has not even started.

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**1**

# About the Public Transport Authorities

# Who are EMTA members?

Metropolitan public transport authorities (PTAs) are set up to orchestrate mobility services in and beyond the core city, addressing the major problem of delivering public transport in suburban and rural areas. To do so, the geographical footprint of the PTA service area is on average 15 times greater than that of the main city.

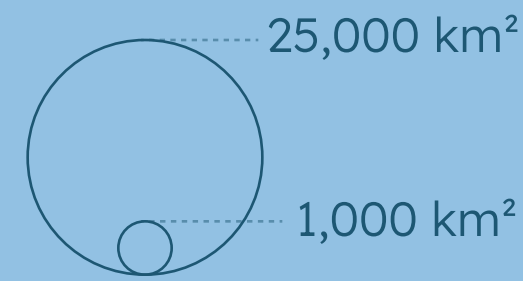
## EMTA IN 2023

AREA  
**204,246** km<sup>2</sup>

GDP  
**4,279** Billion Euros

## Surface of EMTA members - 2023

- Main City Surface
- PTA Area Surface



How to read ? The area of the circle is proportional to the surface area.

# What is the population of PTA areas?

The population of PTA areas is on average more than twice (2.2 times) that of the main city, with a cumulated population of 106 million over the 35 EMTA members.

## EMTA IN 2023

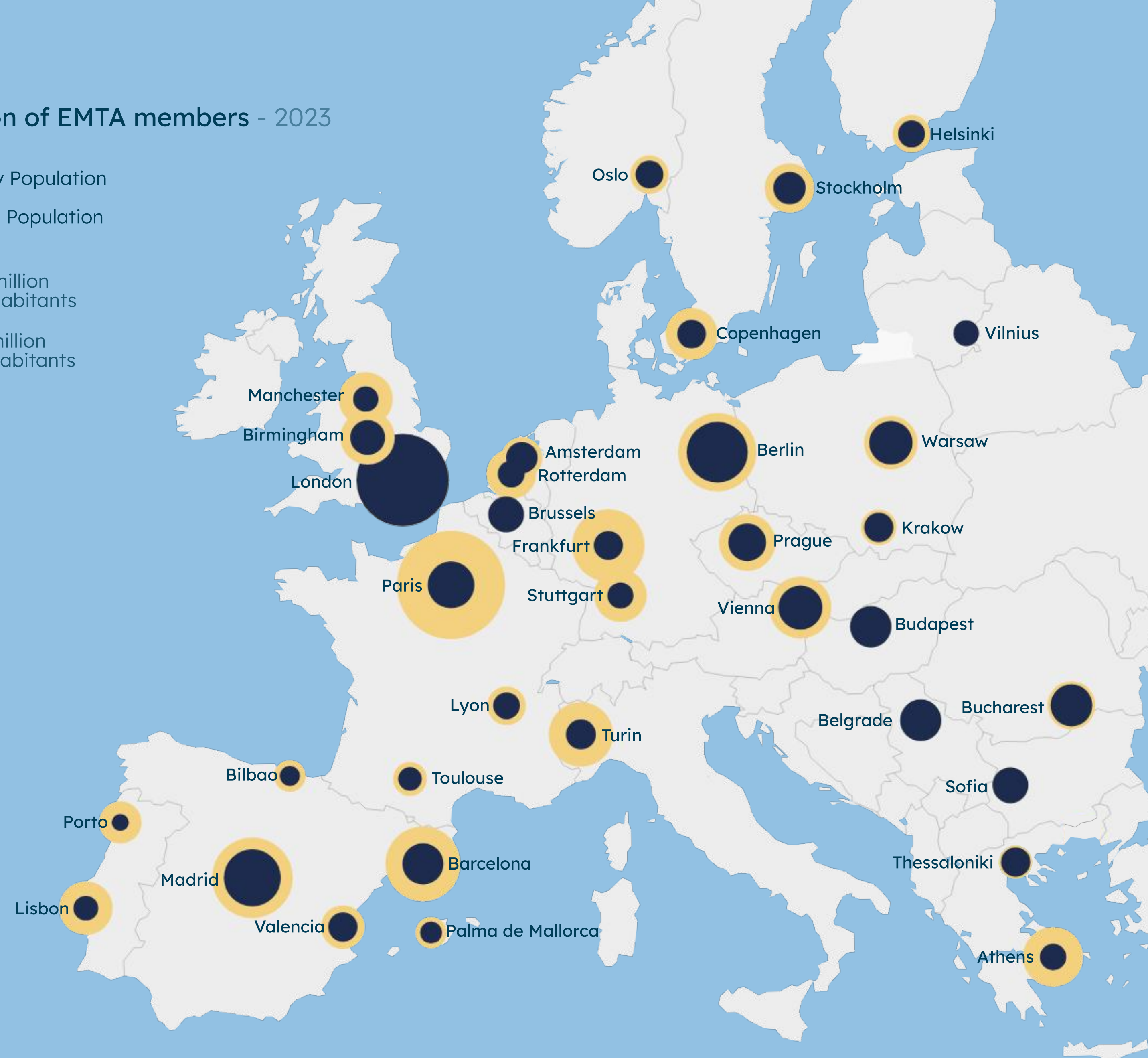
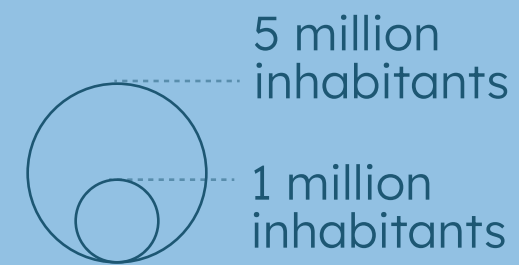
INHABITANTS  
**106** million

DENSITY  
**520** inhabitants/km<sup>2</sup>

## Population of EMTA members - 2023

● Main City Population

● PTA Area Population



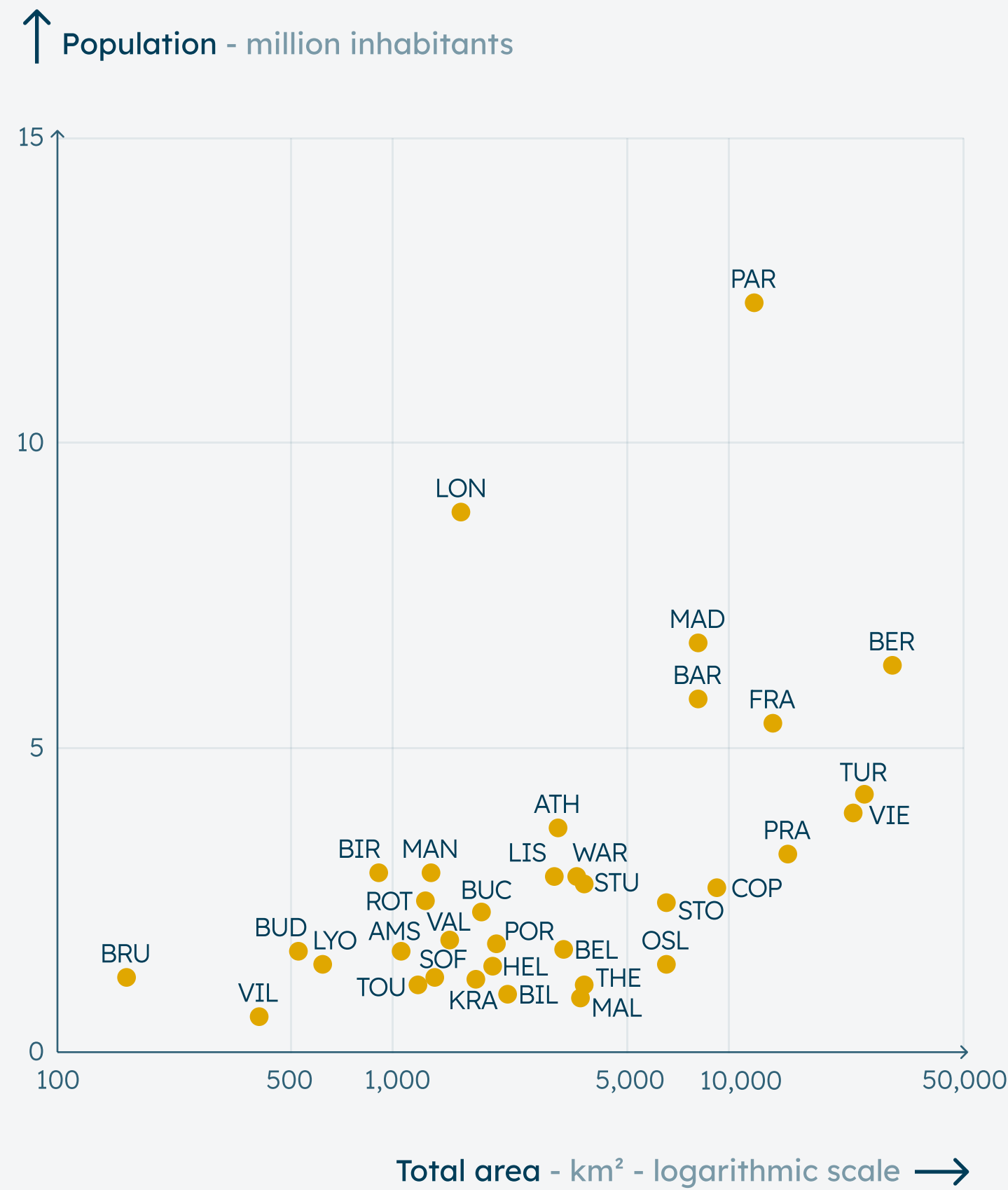
**How to read ?** The area of the circle is proportional to the number of inhabitants.

# How different are the PTAs?

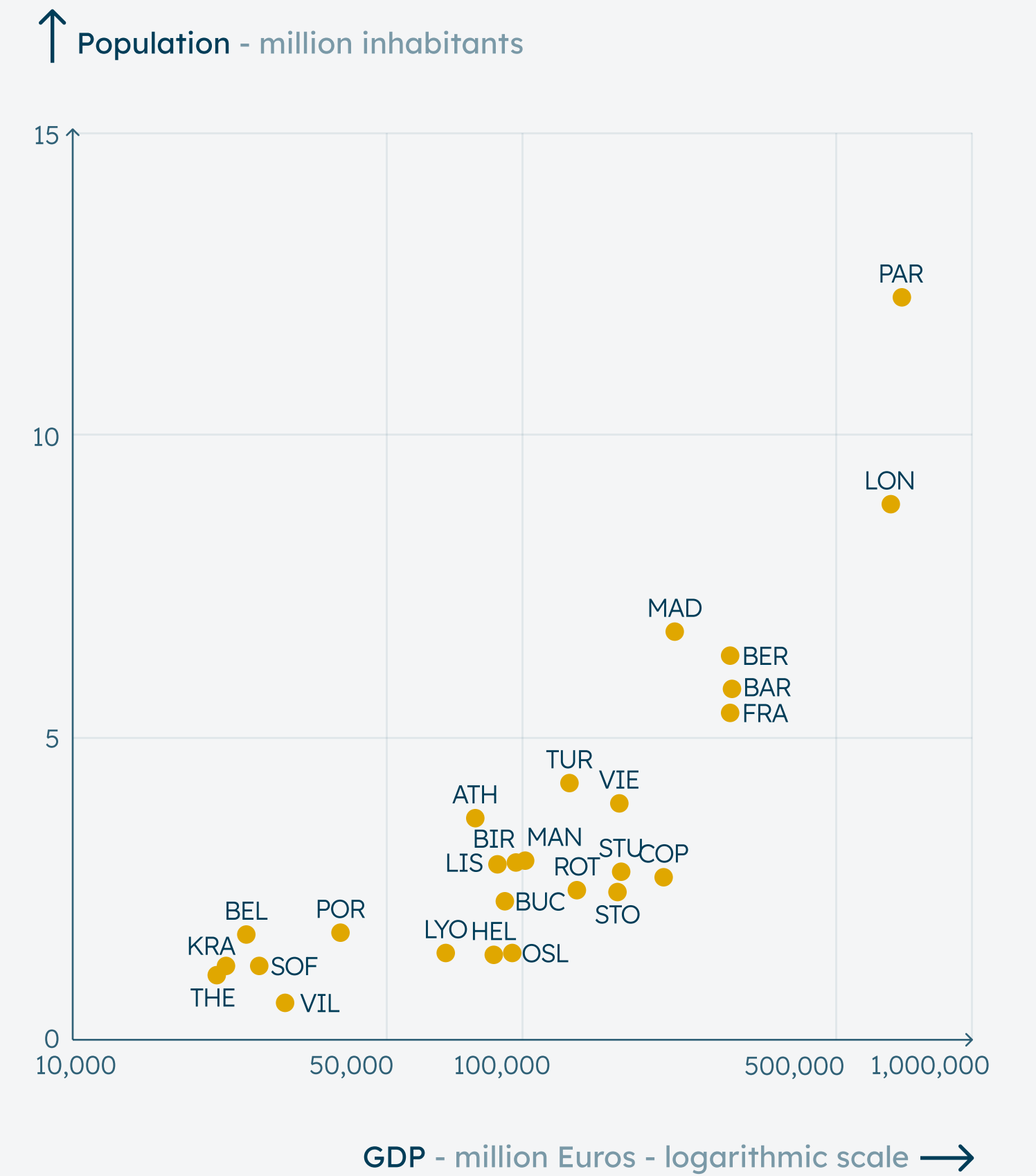
The PTA areas of Paris and London are home to more than 12 and close to 9 million people respectively, making them the most populated in the EMTA network and also the richest, each producing circa 700 billion Euros worth of GDP in 2023.

The PTAs of Berlin, Turin and Vienna are the largest in size, all above 20,000 km<sup>2</sup>. One must naturally keep in mind such differences when making comparisons between PTAs.

## Comparing PTA areas - 2023



**How to read ?** Berlin is the largest PTA area with a surface of 30,546 km<sup>2</sup> and a population of 6,4 million inhabitants.



**How to read ?** Paris is the most populated and the most wealthy PTA area with more than 12 million inhabitants and a GDP of 702,000 million Euros.

Label	Authority	Main City	Population PTA area inhabitants	Population main City inhabitants	Population City / PTA %	Surface PTA area km <sup>2</sup>	Surface main City km <sup>2</sup>	Surface City / PTA %	Pop. Density PTA area inhabitants/km <sup>2</sup>	Pop. Density main City inhabitants/km <sup>2</sup>	GDP PTA area million Euros	GDP per capita PTA area Euros
AMS	Vervoerregio Amsterdam	Amsterdam	1,654,621	934,927	57 %	1,059	219	21 %	1,562	4,269		
ATH	Athens Urban Transport Organization (OASA S.A.)	Athens	3,673,933	643,000 P	18 %	3,088	38	1 %	1,190	16,921	78,000	21,231
BAR	Autoritat Del Transport Metropolità	Barcelona	5,806,619	1,655,956	29 %	8,154	102	1 %	712	16,269	292,474	50,369
BEL	Secretariat For Public Transport	Belgrade	1,681,405 P	1,681,405 P	100 %	3,234	3,234	100 %	520	520	24,209 P	14,398
BER	Verkehrsverbund Berlin-Brandenburg	Berlin	6,350,900	3,773,142	59 %	30,546	891	3 %	208	4,234	290,695	45,772
BIL	Consortio de Transportes de Bizkaia	Bilbao	950,000 P	350,000 P	37 %	2,215	41	2 %	429	8,537		
BIR	Transport for West Midlands	Birmingham	2,953,816 P	1,157,603 P	39 %	911	271	30 %	3,242	4,272	99,930 P	33,831
BRU	Brussels Mobility	Brussels	1,244,015	1,244,015	100 %	162	162	100 %	7,679	7,679		
BUC	Bucharest-Ilfov Public Transport Intercommunity Development Association (TPBI)	Bucharest	2,290,125	1,725,271	75 %	1,823	240	13 %	1,256	7,189	91,824	40,096
BUD	Centre for Budapest Transport	Budapest	1,671,004	1,671,004	100 %	525	525	100 %	3,183	3,183		
COP	Movia Public Transport	Copenhagen	2,702,033	758,328	28 %	9,201	99	1 %	294	7,675	207,988	76,975
FRA	Rhein-Main Verkehrsverbund GMBH	Frankfurt	5,408,188 P	784,664 P	15 %	13,583	248	2 %	398	3,164	290,864 P	53,782
HEL	Helsingin seudun liikenne (HSL)	Helsinki	1,395,693	674,500	48 %	1,969	215	11 %	709	3,137	86,460 P	61,948
KRA	Zarząd Transportu Publicznego (ZTP)	Krakow	1,215,808 P	804,237	66 %	1,745	327	19 %	697	2,460	22,000 P	18,095
LIS	Transportes Metropolitanos de Lisboa	Lisbon	2,899,670	560,429	19 %	3,015	100	3 %	962	5,604	87,368	30,130
LON	Transport for London	London	8,866,180 P	8,866,180 P	100 %	1,605	1,605	100 %	5,524	5,524	657,749 P	74,186
LYO	SYTRAL mobilités	Lyon	1,451,405	661,583	46 %	622	63	10 %	2,333	10,501	68,000	46,851
MAD	Consortio Regional de Transportes de Madrid	Madrid	6,732,223	3,293,024	49 %	8,102	610	8 %	831	5,398	219,000	32,530
MAL	Consorti de Transports de Mallorca	Palma de Mallorca	940,332	430,640	46 %	3,636	209	6 %	259	2,060		
MAN	Transport for Greater Manchester	Manchester	2,934,637 P	575,500 P	20 %	1,295	117	9 %	2,266	4,919	97,742 P	33,306
OSL	RUTER AS	Oslo	1,430,119	717,710	50 %	6,529	190	3 %	219	3,777	95,000	66,428
PAR	Île-de-France Mobilités	Paris	12,283,527	2,163,616	18 %	12,065	105	1 %	1,018	20,606	702,000	57,150
POR	Area Metropolitana do Porto	Porto	1,764,974 P	238,298 P	14 %	2,041	41	2 %	865	5,812	39,179 P	22,198
PRA	Regionální Organizátor Pražské Integrované Dopravy	Prague	3,237,604	1,384,732	43 %	15,162	496	3 %	214	2,792		
ROT	Metropoolregio Rotterdam/Den Haag	Rotterdam	2,475,263	671,125	27 %	1,256	342	27 %	1,970	1,962	132,667	53,597
SOF	Sofia Urban Mobility Centre (SUMC)	Sofia	1,228,646	1,228,646	100 %	1,345	1,345	100 %	913	913	26,000	21,162
STO	Region Stockholm	Stockholm	2,454,821	988,943	40 %	6,512	187	3 %	377	5,282	162,669	66,265
STU	Verband Region Stuttgart	Stuttgart	2,782,758	617,726	22 %	3,653	207	6 %	762	2,984	165,000 P	59,294
THE	Thessaloniki Transport Authority SA (TheTA)	Thessaloniki	1,089,819	799,986	73 %	3,677	112	3 %	296	7,143	20,870	19,150
TOU	Tisséo Collectivités	Toulouse	1,096,825	504,078	46 %	1,198	118	10 %	916	4,272		
TUR	Agenzia Mobilità Piemontese	Turin	4,248,638	846,610	20 %	25,374	130	1 %	167	6,512	127,000	29,892
VAL	Autoritat de Transport de Valencia	Valencia	1,886,270	807,693	43 %	1,481	139	9 %	1,274	5,811		
VIE	Verkehrsverbund Ost-Region	Vienna	3,921,104	1,917,528	49 %	23,550	414	2 %	167	4,632	165,000	42,080
VIL	JUDU – Susisiekimo paslaugos	Vilnius	593,033	593,033	100 %	401	401	100 %	1,479	1,479	29,836 P	50,311
WAR	Zarząd Transportu Miejskiego	Warsaw	2,897,337	1,861,644	64 %	3,512	517	15 %	825	3,599		





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## 2

# Multimodal networks

# Which transport modes are the subject of data reporting?

Most public transport authorities (PTAs) have a mandate to procure all or most transport services. Some however lack the mandate to procure some services: it happens for example in places where urban buses are procured by a municipality, or where regional trains are procured by a regional/national government.

This makes it harder to report timely and accurate figures for the EMTA barometer for such services on which the PTA has limited control. Such services can therefore be excluded from the barometer reporting scope, which is illustrated by the figure here.

Also excluded from the reporting scope are bike sharing, car-sharing and car-pooling. Walking and cycling are reported through modal shares only.

PTA's data reporting scope - 2023

		Regional Bus	Urban bus	Regional Rail	Commuter Rail	Light Rail	Tram	Metro	Other
Amsterdam	AMS			-	-	-			-
Athens	ATH	-		-	-	-			-
Barcelona	BAR			-		-			-
Belgrade	BEL	-		-		-		-	
Berlin	BER					-			
Bilbao	BIL	-	-	-	-	-	-	-	-
Birmingham	BIR	-		-		-		-	
Brussels	BRU	-		-	-	-			-
Bucharest	BUC			-	-	-		-	
Budapest	BUD	-		-	-	-			-
Copenhagen	COP	-		-		-	-		
Frankfurt	FRA					-			-
Helsinki	HEL			-					
Krakow	KRA	-		-	-	-		-	-
Lisbon	LIS			-					
London	LON	-		-					-
Lyon	LYO	-		-	-	-			
Madrid	MAD			-			-		-
Manchester	MAN	-		-		-		-	-
Oslo	OSL			-	-	-			
Palma de Mallorca	MALL			-		-	-		-
Paris	PAR			-		-			-
Porto	POR	-		-	-		-	-	-
Prague	PRA			-	-	-			
Rotterdam	ROTT			-	-	-			-
Sofia	SOF	-		-	-	-			-
Stockholm	STO		-	-			-		
Stuttgart	STU						-	-	-
Thessaloniki	THE			-	-	-	-	-	-
Toulouse	TOU	-		-	-	-			
Turin	TUR					-			
Valencia	VAL				-	-			-
Vienna	VIE	-	-	-	-	-	-	-	-
Vilnius	VIL	-		-	-	-	-	-	-
Warsaw	WAR	-				-			-

# How many lines in each network?

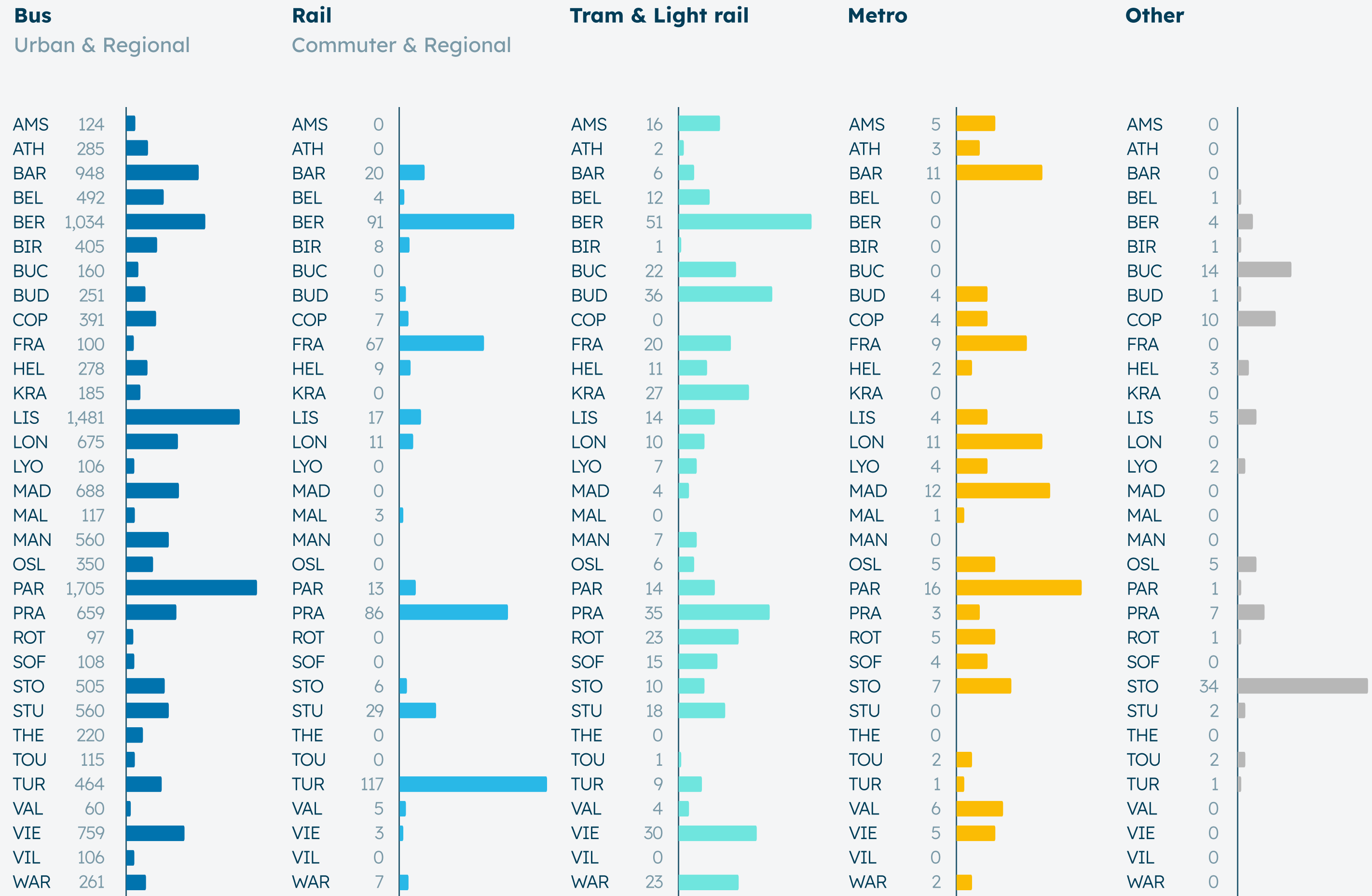
Statistics on the number and length of lines are the only ones that are not limited to the reporting scope of each PTA.

**EMTA IN 2023**

NUMBER OF LINES  
**> 15,000**

NETWORK LENGTH  
**> 31 million km**

## Number of public transport lines per mode - 2023





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**3**

## **Modal Shares & Car Ownership Rate**

# How do people travel?

Public transport rarely is the dominant mode of transport at the metropolitan level. This is largely due to the difficulty of competing with private car use in low density suburban and rural areas.

Walking and cycling together represent more than a third of trips, without even counting the walking and cycling stages to and from public transport stops.

## EMTA IN 2023

**PUBLIC TRANSPORT**  
21% of journeys

**MOTORISED VEHICLES**  
42% of journeys

**WALKING**  
31% of journeys

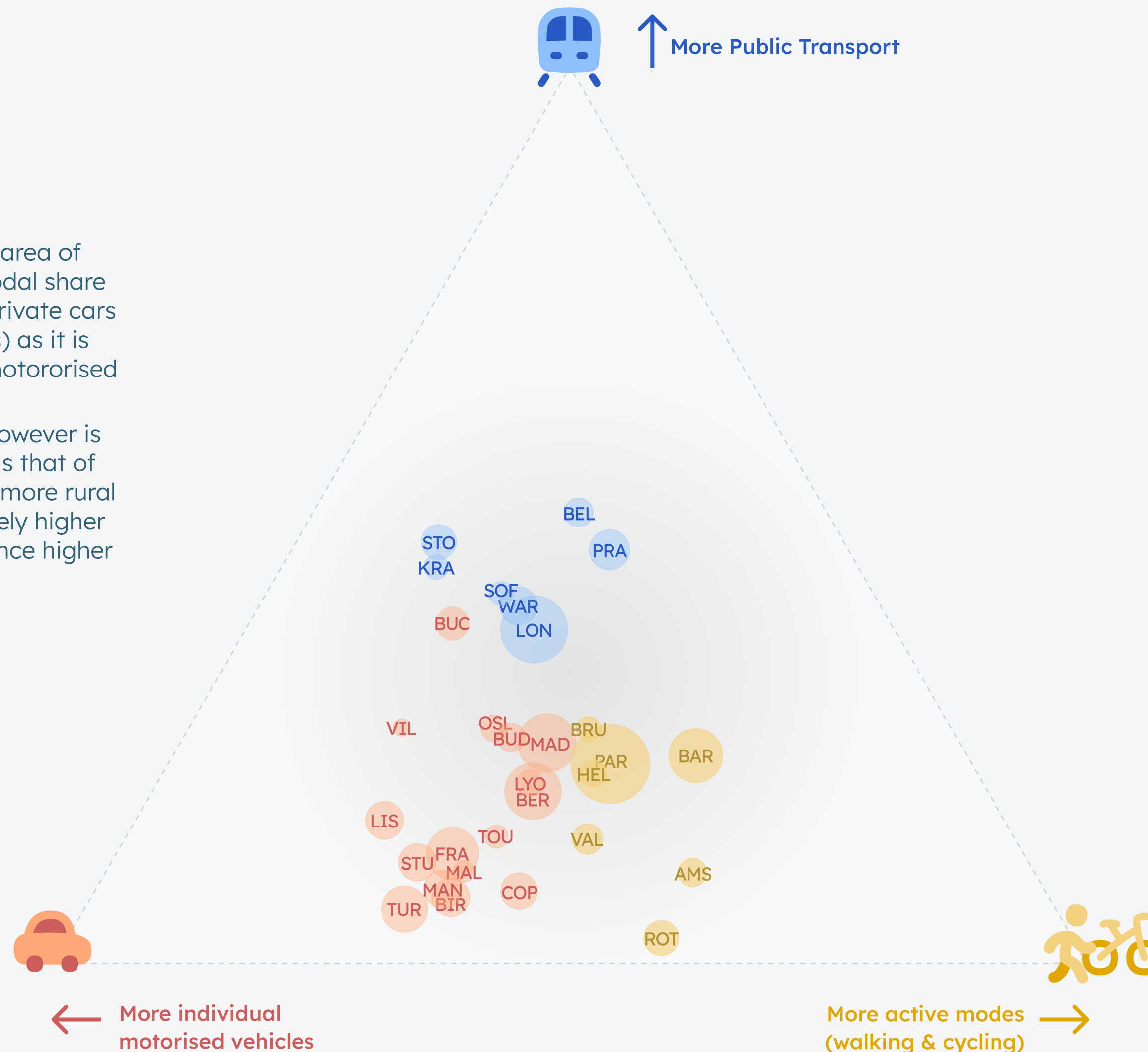
**CYCLING**  
6% of journeys

## Breakdown of daily journeys per transport modes - Last available year

**How to read ?** The PTA area of Turin has the highest modal share of motorised vehicles (private cars and powered 2-wheelers) as it is plotted closest to the "motorised vehicle" corner.

One important caveat however is that larger areas, such as that of Turin, inevitably contain more rural populations, with relatively higher car-dependence and hence higher car use.

Number of inhabitants



# How do people travel?

The PTA areas of Barcelona, Belgrade and Prague stand out: cars and motorcycles are used for less than 30% of trips. This low car-use is enabled and stimulated by a high volume of public transport supply measured as vehicle-kilometres per unit population, as explored later in this report. The effect of other factors, such as land-use, is certainly substantial and will be explored in future editions.

This is an opportunity to remind the reader of the difficult comparison of travel survey results whose figures are particularly sensitive to the survey method. Active travel is often under-estimated due to the difficulty to recall short walking trips, and due to the various cutoff methods used to dismiss short-distance trips.

Label	Main City	Average number of daily journeys	Modal share of Motorised Vehicles	Modal share of Public Transport	Modal share of Cycling	Modal share of Walking	Cars per 1,000 inhabitants PTA area	Cars per 1,000 inhabitants main City
AMS	Amsterdam	4.750.000	33 %	10 %	32 %	25 %	632	448
ATH	Athens							
BAR	Barcelona	12.701.836	26 %	23 %	2 %	49 %	453 P	453 P
BEL	Belgrade	3.010.000 P	24 %	50 %	1 %	24 %	409	409
BER	Berlin	18.900.000	44 %	19 %	13 %	24 %	431	338
BIL	Bilbao							
BIR	Birmingham	6.846.379	58 %	7 %	2 %	33 %	391 P	343 P
BRU	Brussels	4.000.000 P	35 % P	26 % P	7 % P	30 % P	264 P	264 P
BUC	Bucharest		42 % P	38 % P	5 % P	14 % P	725	
BUD	Budapest	4.115.911 P	43 % P	25 % P	3 % P	29 % P	418	418
COP	Copenhagen	6.907.224	51 %	8 %	16 %	25 %	417	241
FRA	Frankfurt	2.100.000 P	55 % P	12 % P	9 % P	24 % P		
HEL	Helsinki	4.630.000	37 %	21 %	9 %	32 %	497	426
KRA	Krakow	2.231.459	41 %	44 %	4 %	10 %	714 P	727 P
LIS	Lisbon	5.385.300	60 %	16 %	1 %	23 %		
LON	London	24.680.000 P	35 % P	37 % P	4 % P	24 % P	544 P	544 P
LYO	Lyon		44 %	20 %	2 %	34 %		
MAD	Madrid	15.847.267	40 %	24 %	1 %	34 %	817	597
MAL	Palma de Mallorca	9.973.774 P	55 % P	10 % P	2 % P	33 % P	628 P	581 P
MAN	Manchester	4.877.235 P	58 % P	8 % P	2 % P	30 % P	388	275
OSL	Oslo	3.889.924	44 %	26 %	5 %	24 %	476	405
PAR	Paris	40.000.000 P	35 % P	22 % P	2 % P	41 % P	368 P	
POR	Porto							
PRA	Prague		23 %	46 %	2 %	29 %	655	734
ROT	Rotterdam	5.447.891 P	40 % P	3 % P	28 % P	24 % P	416	367
SOF	Sofia		36 %	41 %	1 %	22 %		
STO	Stockholm	3.341.000	39 %	47 %	6 %	7 %	267	195
STU	Stuttgart	8.626.550	59 % P	11 % P	6 % P	24 % P	600 P	474
THE	Thessaloniki							
TOU	Toulouse	531.056	50 %	14 %	5 %	29 %	609	470
TUR	Turin	8.217.863	63 %	6 %	3 %	28 %	682 P	605 P
VAL	Valencia	4.878.430	41 %	14 %	2 %	41 %	690	453
VIE	Vienna							
VIL	Vilnius	1.515.919	53 %	26 %	4 %	16 %	548	548
WAR	Warsaw	4.600.000 P	35 % P	40 % P	4 % P	21 % P	716 P	765 P

# Where are the highest car ownership rates?

There is no obvious relationship between car ownership and car use. It is remarkable however that among the wealthier PTA areas, most have a car ownership rate that is lower than average. Let this be a reminder that car ownership represents large costs to individuals, both for purchase and fuel, expenditures that rarely stimulate the local economy.

**EMTA IN 2023**

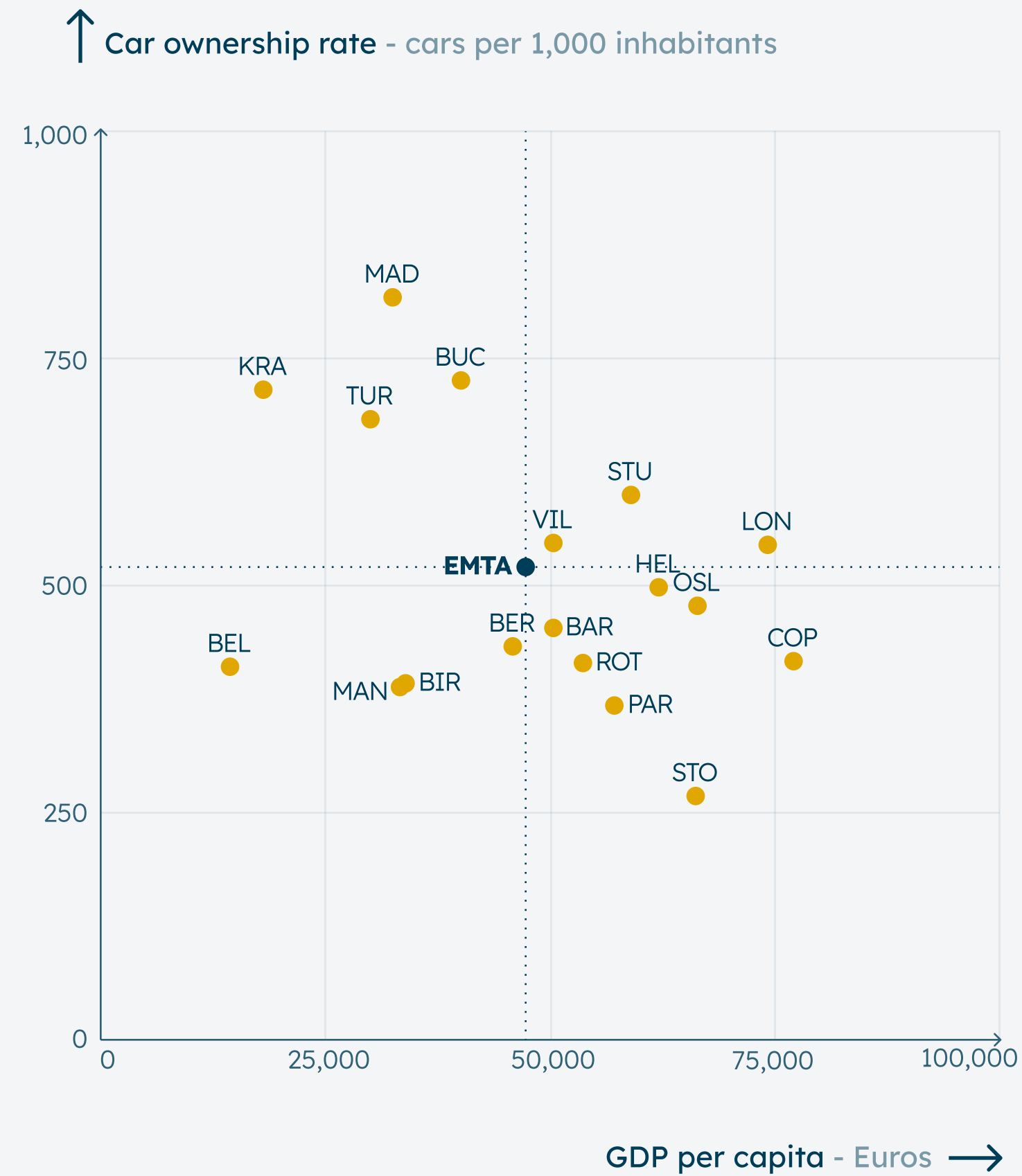
IN PTA AREAS

**520** cars per 1,000 inhabitants

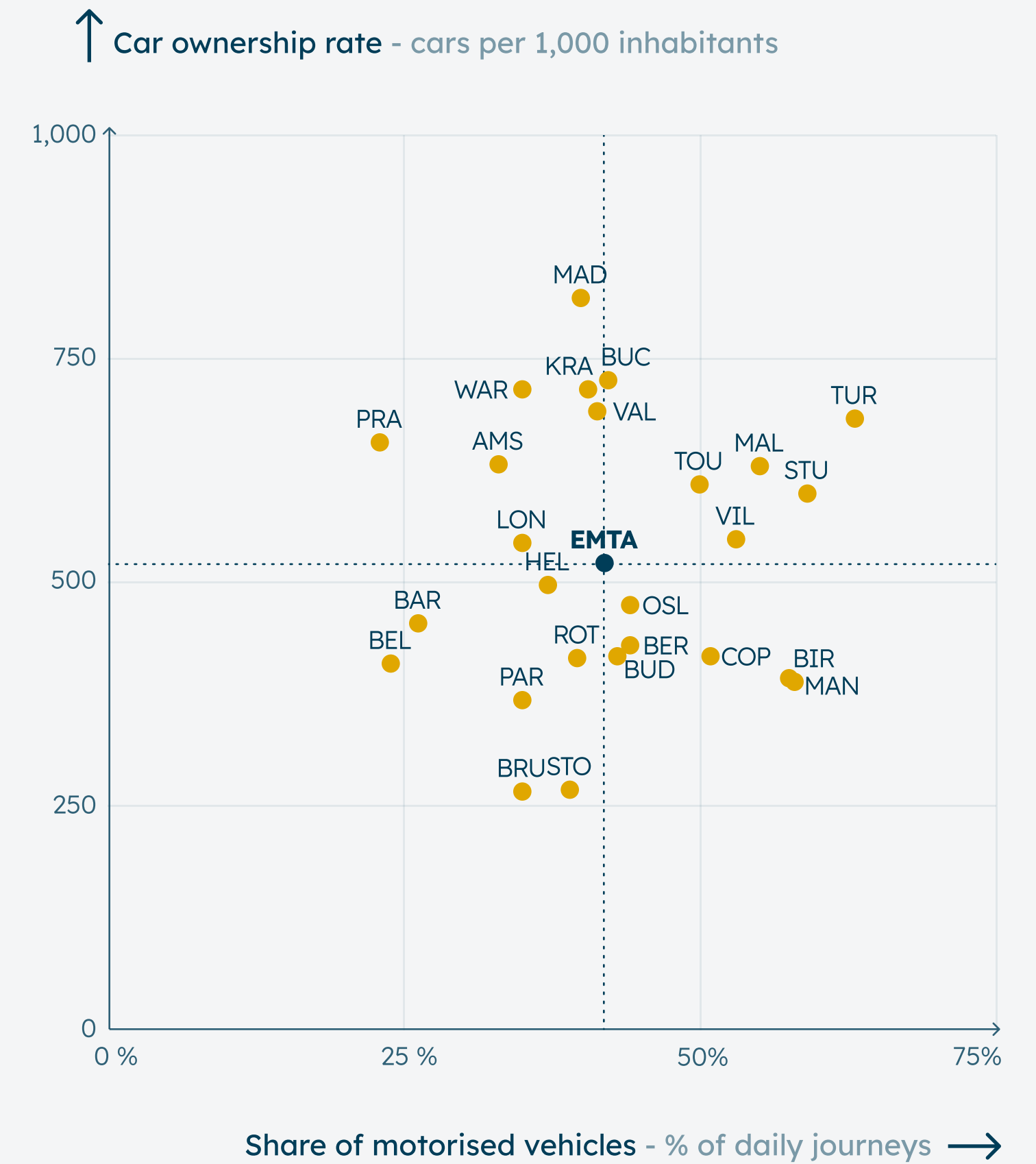
IN MAIN CITIES ONLY

**485** cars per 1,000 inhabitants

## Comparing PTAs areas car ownership rates - Last available year



**How to read ?** The PTA area of Copenhagen has the highest GDP per capita, and its car ownership rate is below the EMTA average.



**How to read ?** The highest car ownership is in the PTA area of Madrid with over 800 cars per 1,000 inhabitants, despite a below-average modal share for cars and motorcycles.



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**4**

## **Bus fleets electrification**



# What is the propulsion mix within bus fleets?

As of 2023, gas and diesel buses represent 70% of the bus fleets in EMTA PTA areas. The rest is essentially hybrid or electric.

This represents the technology choices for the urban and regional bus fleets combined. Specific urban and regional statistics are presented overleaf.

## EMTA IN 2023

**GAS & DIESEL**  
70% of bus fleet

**ELECTRIC**  
11% of bus fleet

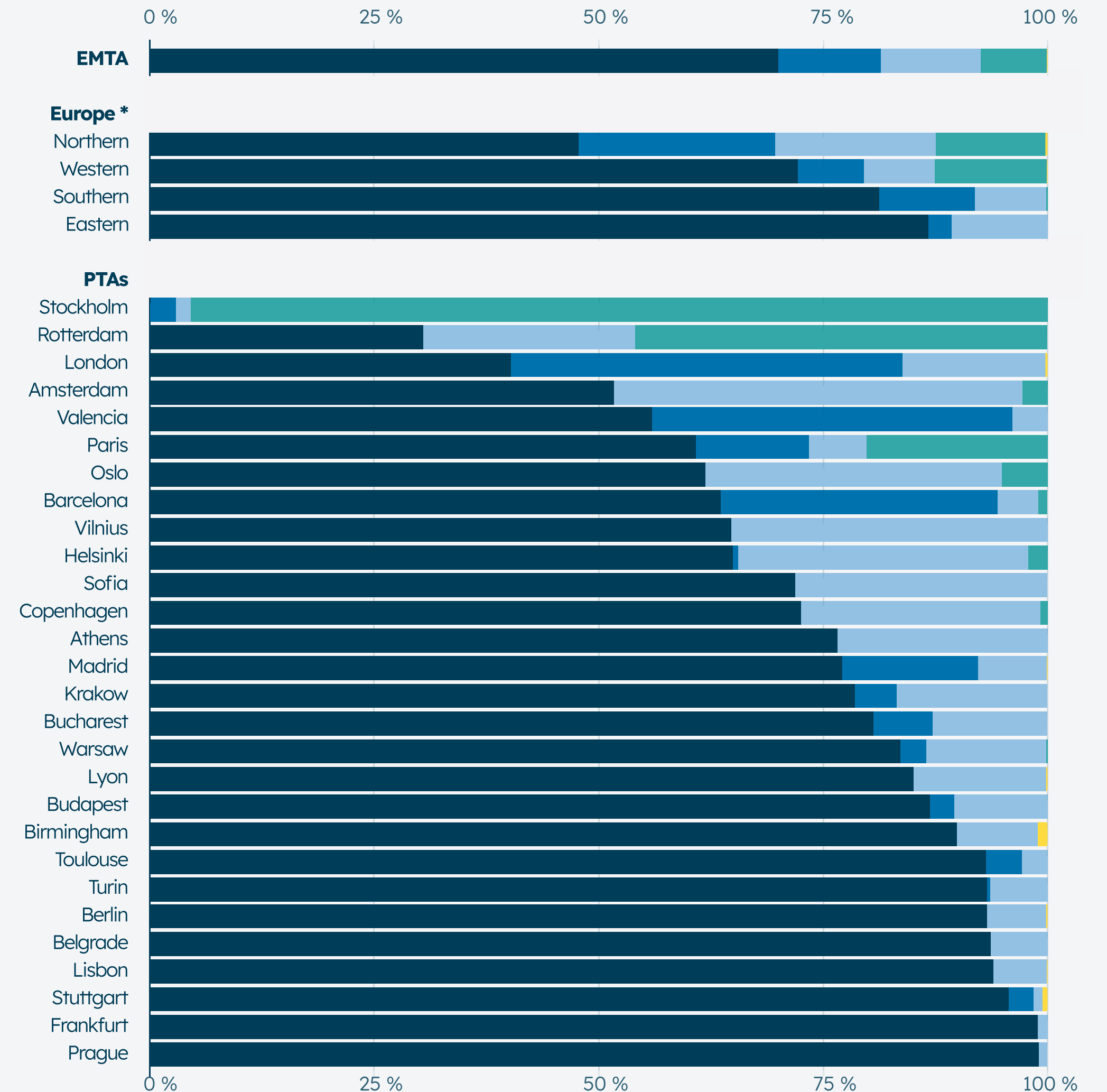
**BIODIESEL & BIOGAS**  
7% of bus fleet

**HYBRID ELECTRIC**  
11% of bus fleet

## Breakdown of bus fleets per propulsion mode - 2023

- **Gas & Diesel**  
 Diesel Euro VI, Diesel Euro III-V including EEV and older Diesel, Gas including CNG and LPG
- **Hybrid electric**  
 Plug-in hybrid electric and other hybrid electric vehicles
- **Electric**  
 Trolleybus, battery-electric vehicle with depot charging, battery-electric vehicle with opportunity charging
- **Biodiesel & Biogas**  
 biodiesel and biogas vehicles
- **Hydrogen**  
 Hydrogen fuel-cell vehicle

\* According to the United Nations Statistics classification



# What is the propulsion mix within bus fleets?

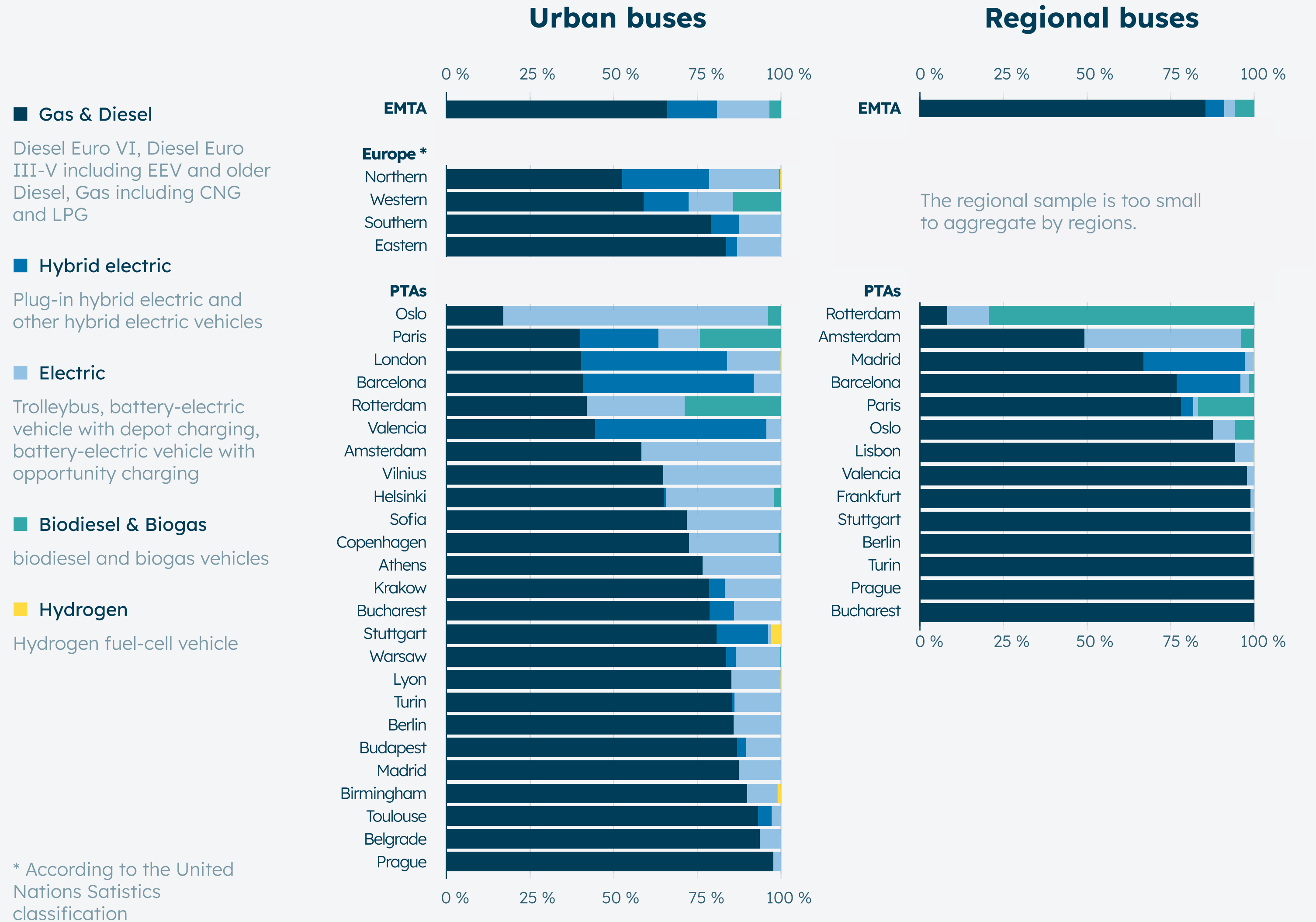
Barcelona, London and Valencia have the highest proportion of hybrid buses. Rotterdam and Paris have the highest proportion of biofuel-powered buses. Amsterdam, Oslo, Helsinki and Vilnius have the highest proportion of electric buses. A noticeable share of hydrogen-powered buses is found in Stuttgart and Birmingham.

The North of Europe has decarbonised faster than other regions. National support programmes have had a major influence on the pace of decarbonisation across EMTA members.

For change to occur all over Europe at pace, EMTA reiterates the call expressed last year<sup>1</sup> for greater EU funding on both rolling stock and infrastructure.

<sup>1</sup> <https://www.emta.com/news/co2-emissions-targets-on-buses-must-not-result-in-greater-car-use/>

## Breakdown of bus fleets per propulsion mode - 2023



# At what pace is the electrification of fleets happening?

Time series illustrate how some bus fleets (and hence depots) have transitioned towards biofuel in Rotterdam and Paris whilst biofuels were phased out in Madrid and Oslo.

Meanwhile Lyon and Athens among others, with their trolleybus networks, have had electric busses for decades already.

**■ Gas & Diesel**

Diesel Euro VI, Diesel Euro III-V including EEV and older Diesel, Gas including CNG and LPG

**■ Electric**

Trolleybus, battery-electric vehicle with depot charging, battery-electric vehicle with opportunity charging

**■ Hybrid electric**

Plug-in hybrid electric and other hybrid electric vehicles

**■ Biodiesel & Biogas**

biodiesel and biogas vehicles

**■ Hydrogen**

Hydrogen fuel-cell vehicle

## Breakdown of bus fleets per propulsion mode - Time series



# At what pace is the electrification of fleets happening?

## Breakdown of bus fleets per propulsion mode - Time series

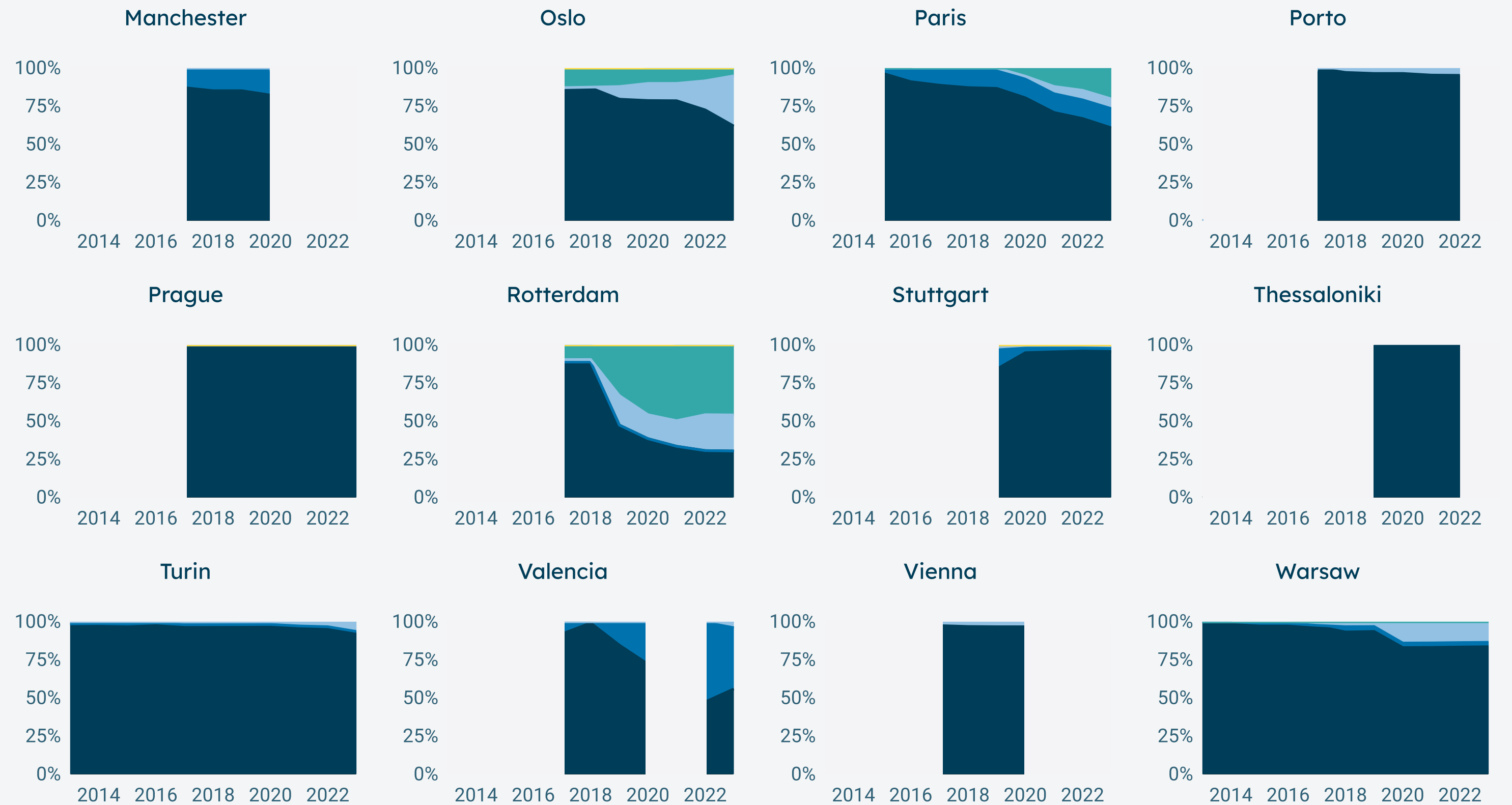
**Gas & Diesel**  
 Diesel Euro VI, Diesel Euro III-V including EEV and older Diesel, Gas including CNG and LPG

**Hybrid electric**  
 Plug-in hybrid electric and other hybrid electric vehicles

**Electric**  
 Trolleybus, battery-electric vehicle with depot charging, battery-electric vehicle with opportunity charging

**Biodiesel & Biogas**  
 biodiesel and biogas vehicles

**Hydrogen**  
 Hydrogen fuel-cell vehicle





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**5**

# Public Transport Supply & Demand

# What's the public transport supply by mode?

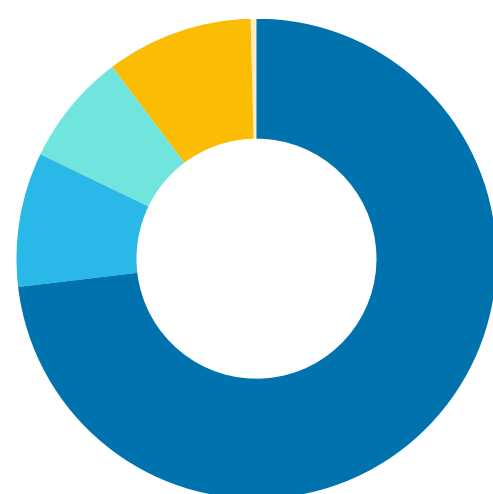
EMTA members orchestrate the operation of 4.7 billion kilometres by bus or train in a year. Of these vehicle-movements, 73% are made by bus.

**EMTA IN 2023**

VEHICLE-KM - ALL MODES

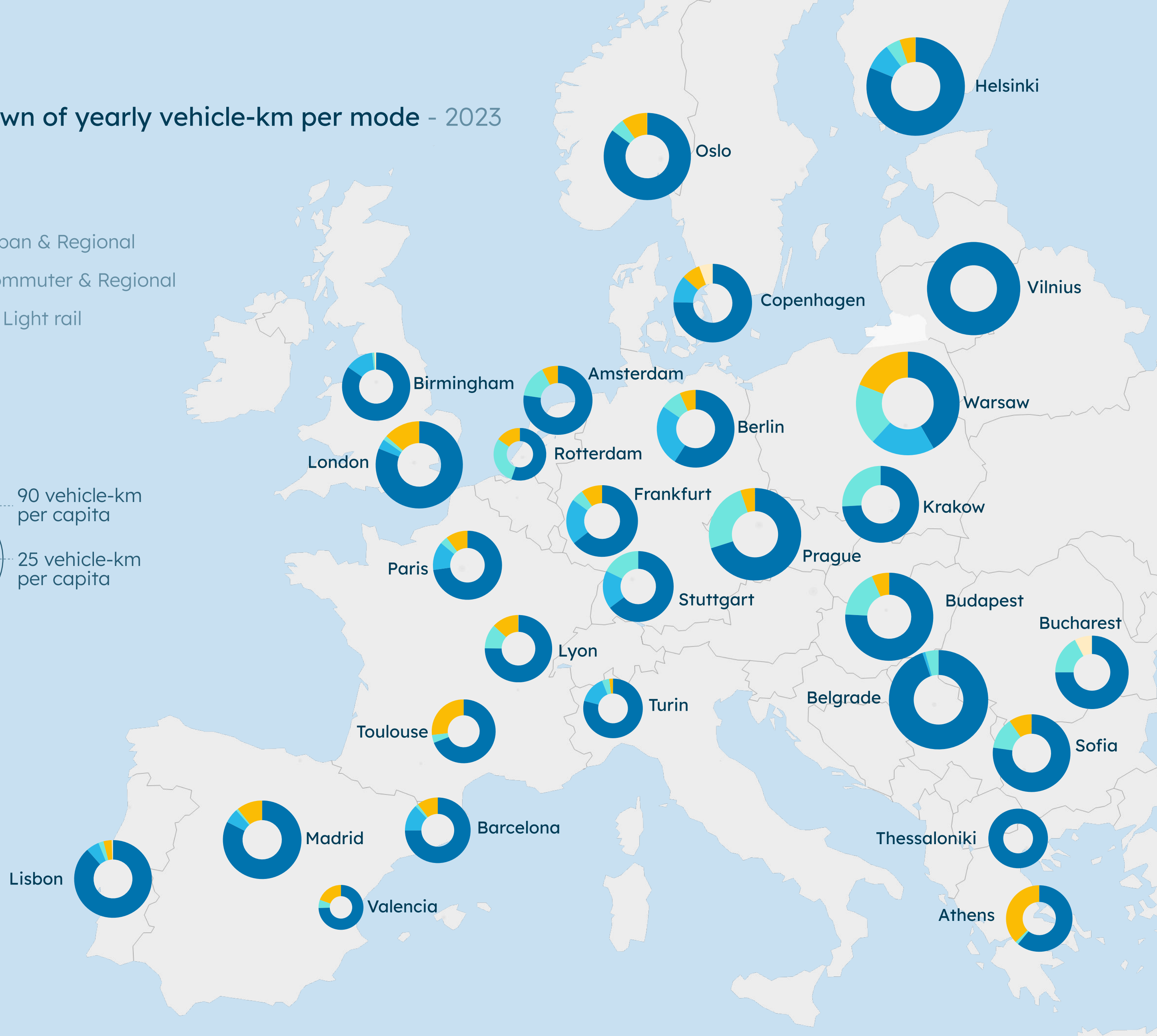
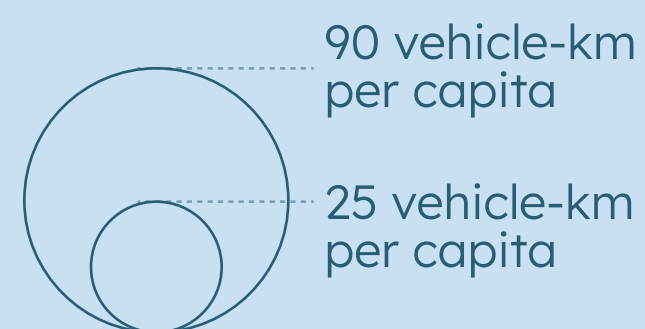
**4,705** million

- Bus **73 %**
- Rail **8 %**
- Tram & Light rail **9 %**
- Metro **10 %**



## Breakdown of yearly vehicle-km per mode - 2023

- Bus Urban & Regional
- Rail Commuter & Regional
- Tram & Light rail
- Metro
- Other



# What's the public transport demand by mode?

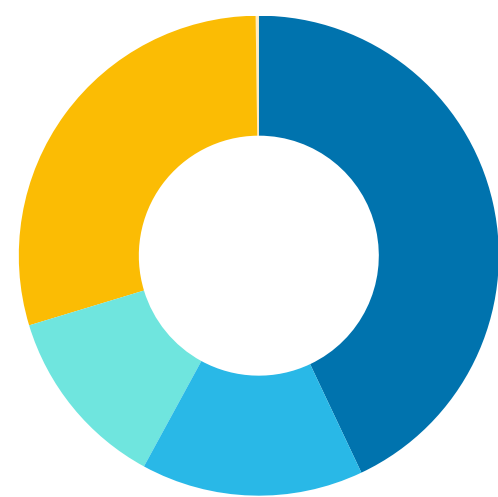
EMTA members facilitate 24 billion passenger journeys per year. Despite buses representing 73% of the kilometres produced, bus journeys make up only 43% of the boardings.

**EMTA IN 2023**

BOARDINGS - ALL MODES

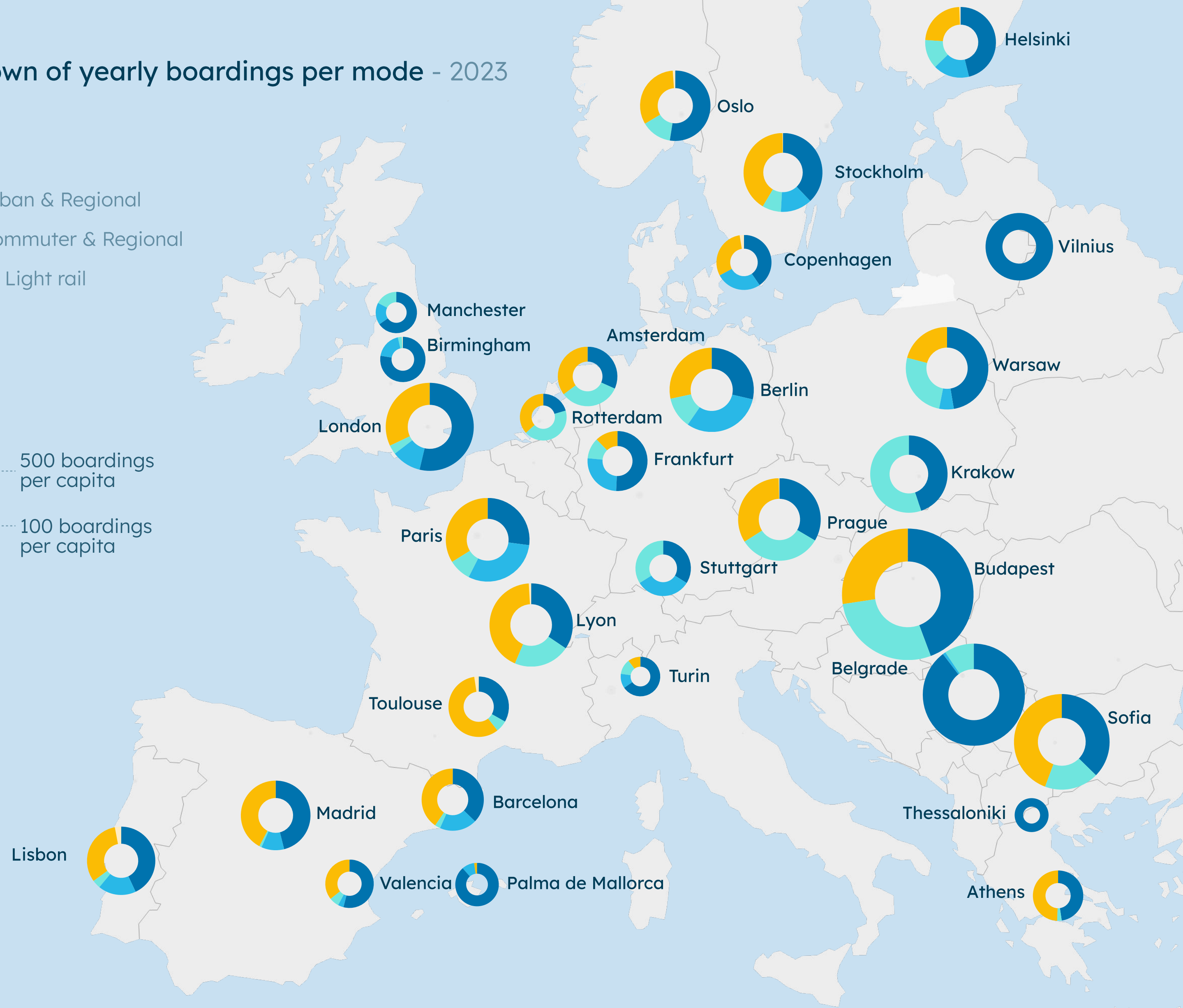
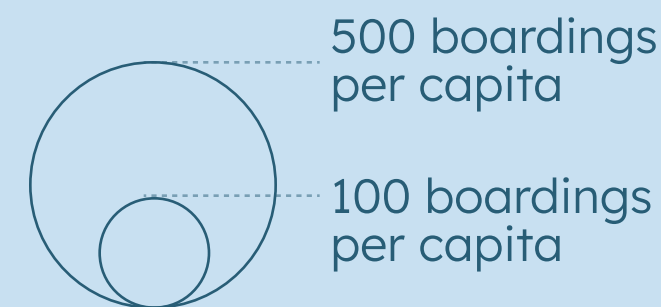
**24,356** million

● Bus	43 %
● Rail	15 %
● Tram & Light rail	12 %
● Metro	29 %



## Breakdown of yearly boardings per mode - 2023

- Bus Urban & Regional
- Rail Commuter & Regional
- Tram & Light rail
- Metro
- Other



**How to read ?** Toulouse is the only PTA area where metro represent more than 50% of boardings.

# How do 2023 results compare to 2022?

In most PTA areas, between 100 and 300 boardings were reported per unit population in 2023. At the high end of the range is Budapest, whose public transport area is limited to the city of Budapest alone and attracts large flows of commuters and visitors coming from municipalities located outside. Having this context in mind, most indicators that are normalised by population in Budapest will appear exceptionally high yet absolutely correct.

**EMTA IN 2023**

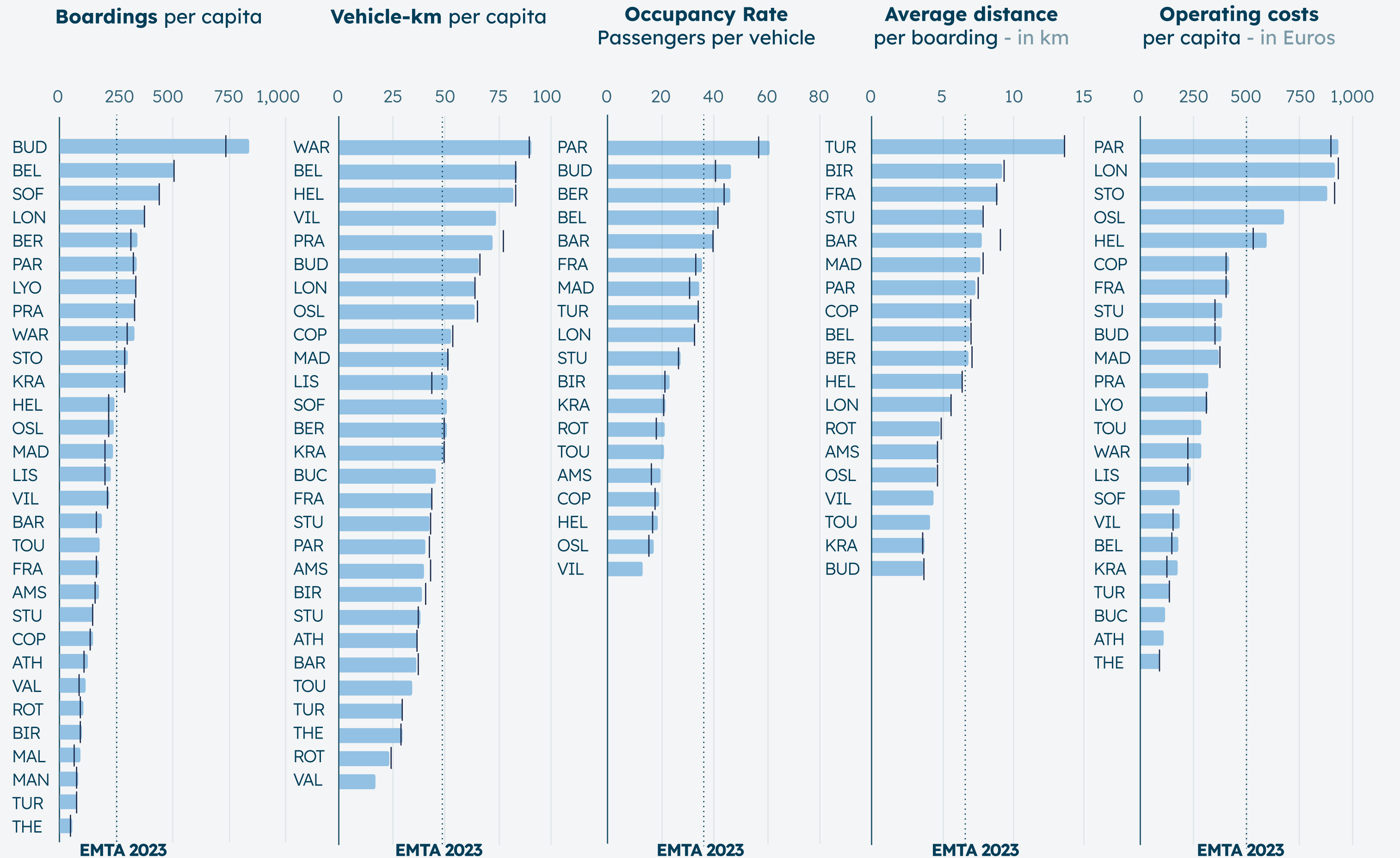
**BOARDINGS**  
254 per capita

**VEHICLE-KM**  
49 per capita

**OCCUPANCY RATE**  
37 passengers/vehicle

**AVERAGE DISTANCE**  
6.7 km per boarding

2023 results compared to | 2022



**How to read ?** Budapest PTA has the highest number of boardings per capita, with 837 boardings per inhabitant, increasing since 2022 (733 boardings per inhabitant). It's also the second highest average occupancy rate in 2023, also increasing.



In most PTA areas, between 30 and 70 vehicle kilometres per capita were operated in 2023. The Lisbon PTA has significantly increased its production of public transport services in 2023 thanks to the start of new contracts for metropolitan bus services. Elsewhere in Europe, there are reports of staff shortages and financial difficulties preventing PTAs from scheduling a significant service increase.

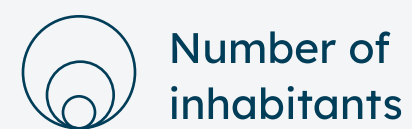
The average occupancy of buses and trains in 2023 was ranging 10 to 40 across EMTA members. Higher figures are observed in areas where rail services make up a higher share of the service production (Berlin, Turin, etc.), in areas where high-capacity buses are used, and in areas where passengers typically stand for short journeys hence maximising floor space utilisation.

The cost of operation for public transport services varies greatly across EMTA members, ranging 100 to 1000 Euros per unit population in 2023.

Label	Main City	Population PTA area	Boardings million	Boardings per capita	Vehicle-km million	Vehicle-km per capita	Occupancy passengers per vehicle	Avg. distance per boarding km	Operating Costs million Euros	Op. Costs per capita Euros
AMS	Amsterdam	1,654,621	284	172	66	40	20	4.6		
ATH	Athens	3,673,933	451	123	136	37			405	110
BAR	Barcelona	5,806,619	1,087	187	211 P	36	40	7.7		
BEL	Belgrade	1,681,405 P	848 P	504	140	84	42	6.9	301 P	179
BER	Berlin	6,350,900	2,181	343	321	51	46	6.8		
BIL	Bilbao	950,000 P								
BIR	Birmingham	2,953,816 P	293	99	115	39	23	9.2		
BRU	Brussels	1,244,015								
BUC	Bucharest	2,290,125			104	45			270	118
BUD	Budapest	1,671,004	1,399	837	110	66	46	3.6	640	383
COP	Copenhagen	2,702,033	396	147	142	53	19	7.0	1,130	418
FRA	Frankfurt	5,408,188 P	941	174	235	43	35	8.8	2,255	417
HEL	Helsinki	1,395,693	338	242	115	82	19	6.3	830	595
KRA	Krakow	1,215,808 P	352	289	60	50	22	3.7	213	175
LIS	Lisbon	2,899,670	655	226	148	51			691	238
LON	London	8,866,180 P	3,324 P	375	566 P	64	33	5.6	8,111 P	915
LYO	Lyon	1,451,405	487	336	55	38			460	317
MAD	Madrid	6,732,223	1,579	235	348	52	35	7.6	2,486	369
MAL	Palma de Mallorca	940,332	86	91						
MAN	Manchester	2,934,637 P	242	82						
OSL	Oslo	1,430,119	343	240	91	64	17	4.6	968	677
PAR	Paris	12,283,527	4,167	339	496	40	61	7.3	11,445 P	932
POR	Porto	1,764,974 P								
PRA	Praha	3,237,604	1,069	330	234	72			1,035	320
ROT	Rotterdam	2,475,263	262	106	59	24	21	4.8		
SOF	Sofia	1,228,646	544	442	62	51			231	188
STO	Stockholm	2,454,821	740	301					2,157	879
STU	Stuttgart	2,782,758	413	149	118	42	27	7.8	1,076 P	387
THE	Thessaloniki	1,089,819	61	56	32	30			100	92
TOU	Toulouse	1,096,825	194	177	38	34	21	4.1	317	289
TUR	Turin	4,248,638	321	76	126	30	34	13.6	590 P	139
VAL	Valencia	1,886,270	214	114	35	19				
VIE	Vienna	3,921,104								
VIL	Vilnius	593,033	131	220	44	74	13	4.4	111	188
WAR	Warsaw	2,897,337	955	329	262	90			832	287

# To what extent does the supply drive the demand for public transport?

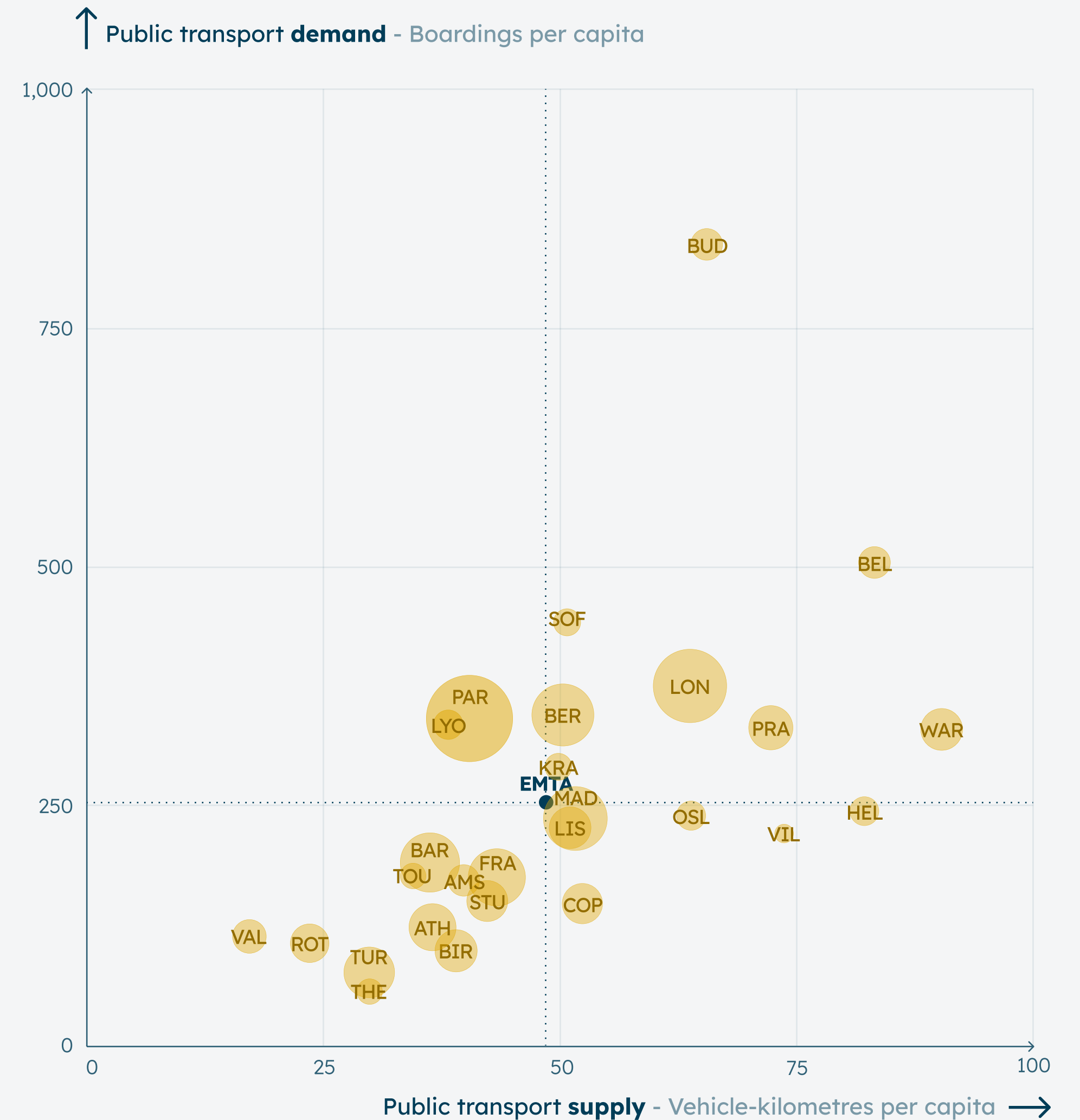
There is a natural relationship between a higher production (expressed as public transport mileage) and a higher ridership (expressed as the number of passenger boardings). One could argue that the relationship goes both ways, as supply drives demand and vice versa.



Number of inhabitants

**How to read ?** The PTAs in Belgrade and Warsaw orchestrate the highest public transport supply per unit population, measured as vehicle mileage per capita, and report higher than average ridership per unit population, measured as number of boardings per capita.

Comparing demand and supply across PTAs - 2023

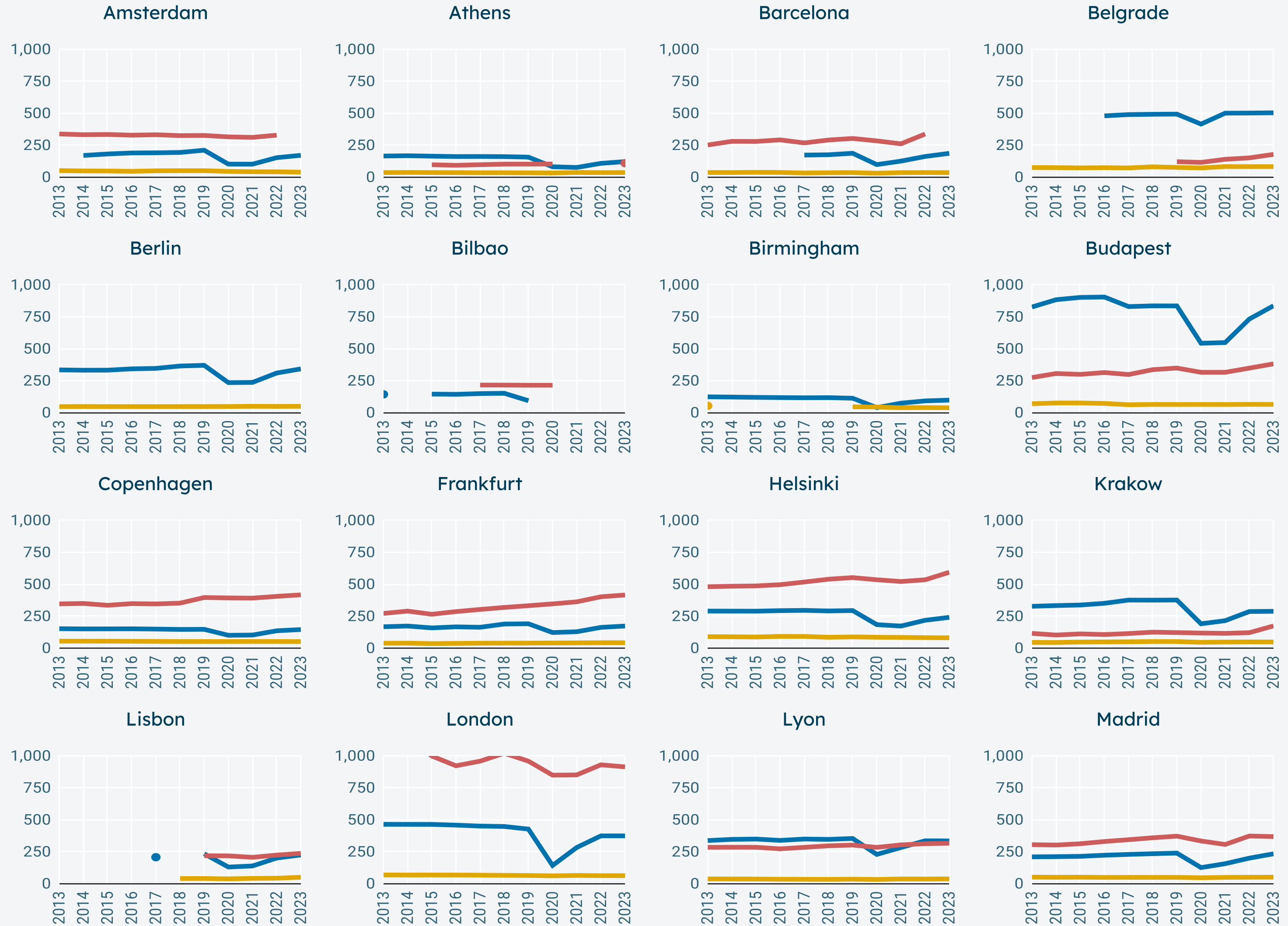


# How have supply and demand evolved over the past 10 years?

Of all the trendlines, the supply expressed in vehicle-km per capita is nearly flat, with Lisbon being the only PTA staging a significant increase in production between 2022 and 2023.

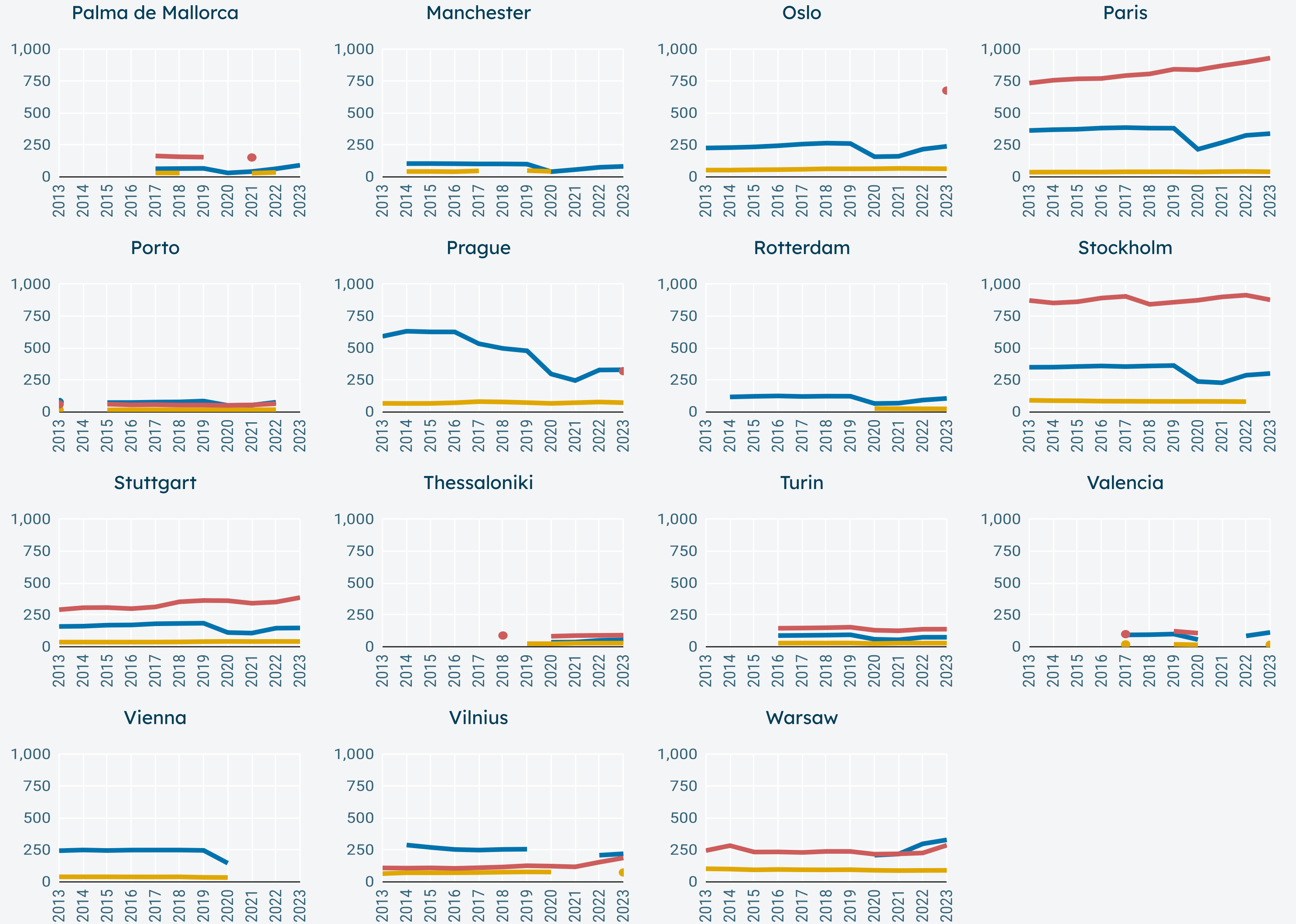
Before the Covid-19 pandemic, one could witness a steady rise in public transport ridership in the PTA areas of Krakow, Madrid, Oslo, Stuttgart and in many other PTA areas. The recovery of lost public transport ridership since 2020 is the focus of subsequent sections of this report.

● Boardings per capita ● Vehicle-km per capita ● Operating costs per capita - Time series



How have supply and demand evolved over the past 10 years?

● Boardings per capita ● Vehicle-km per capita ● Operating costs per capita - Time series



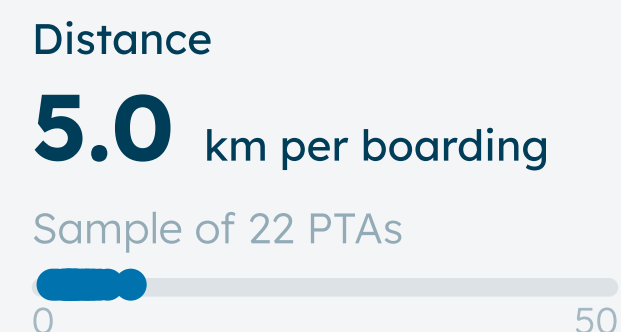
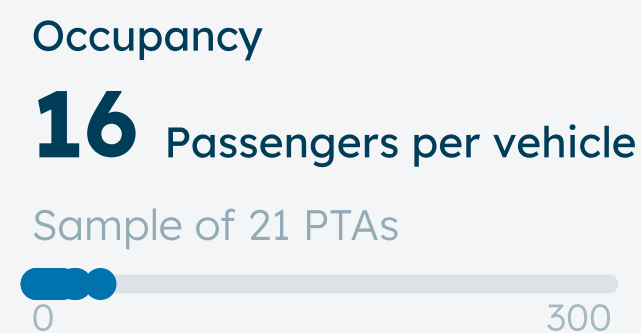
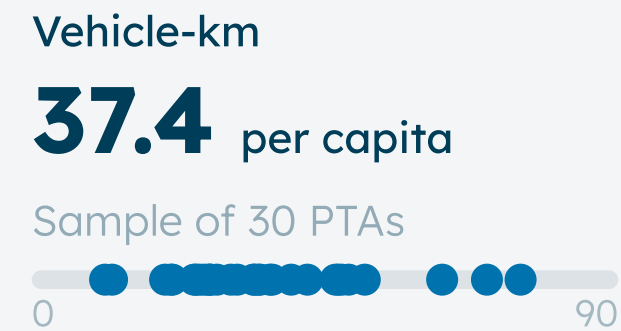
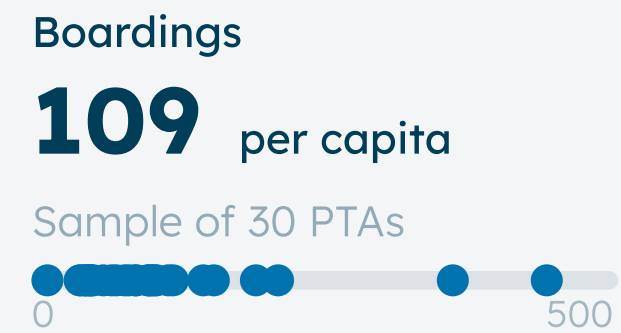
# What are the differences between transport modes?

This page introduces EMTA-level average statistics for each transport mode. The sample size is indicated below each figure and a plot represents the spread of values observed. For exact figures by transport mode and by PTA, please visit the EMTA barometer online dashboard.

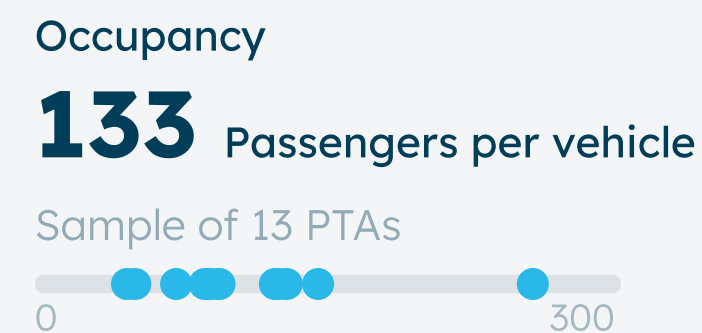
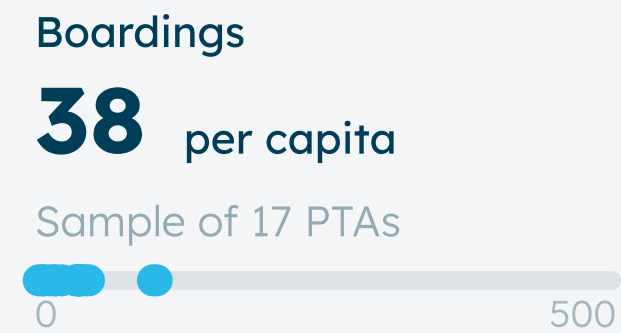
In 2023 and in PTA areas where metro services operate, one counts on average 75 boardings per capita, enabled by 5.0 operated kilometres per capita.

## Main indicators per transport modes - 2023

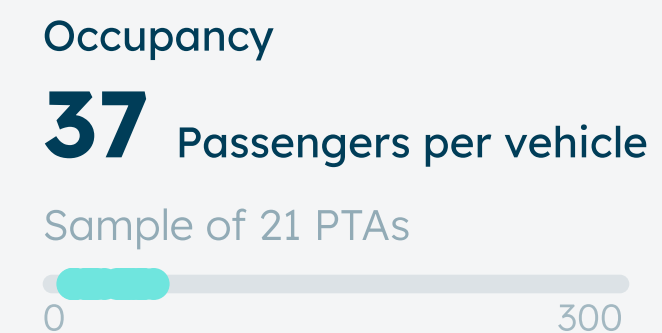
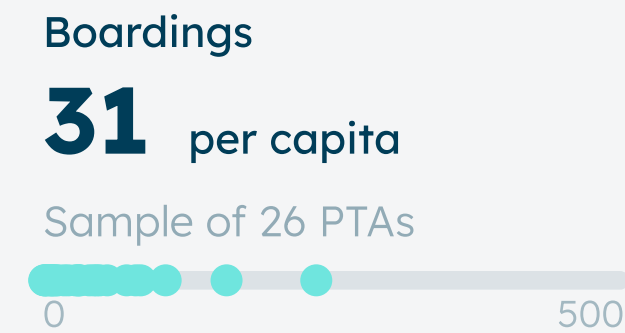
### Bus Urban & Regional



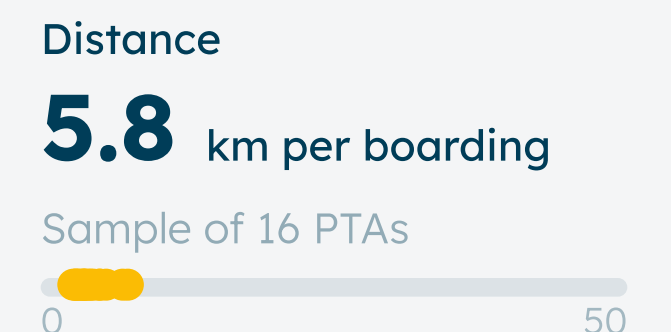
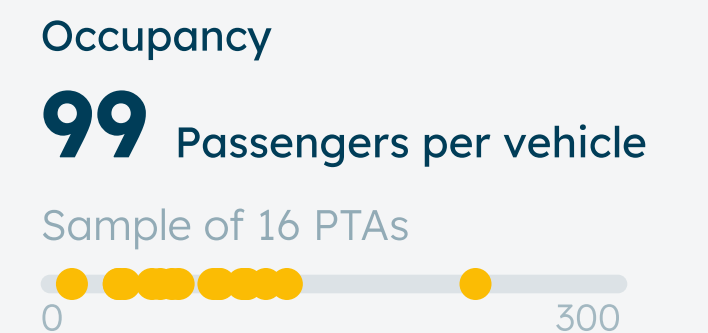
### Rail Commuter & Regional



### Light rail Tram & Light rail



### Metro





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## 6

# Operating Costs & revenues

# How does ticket sales revenues cover operating costs?

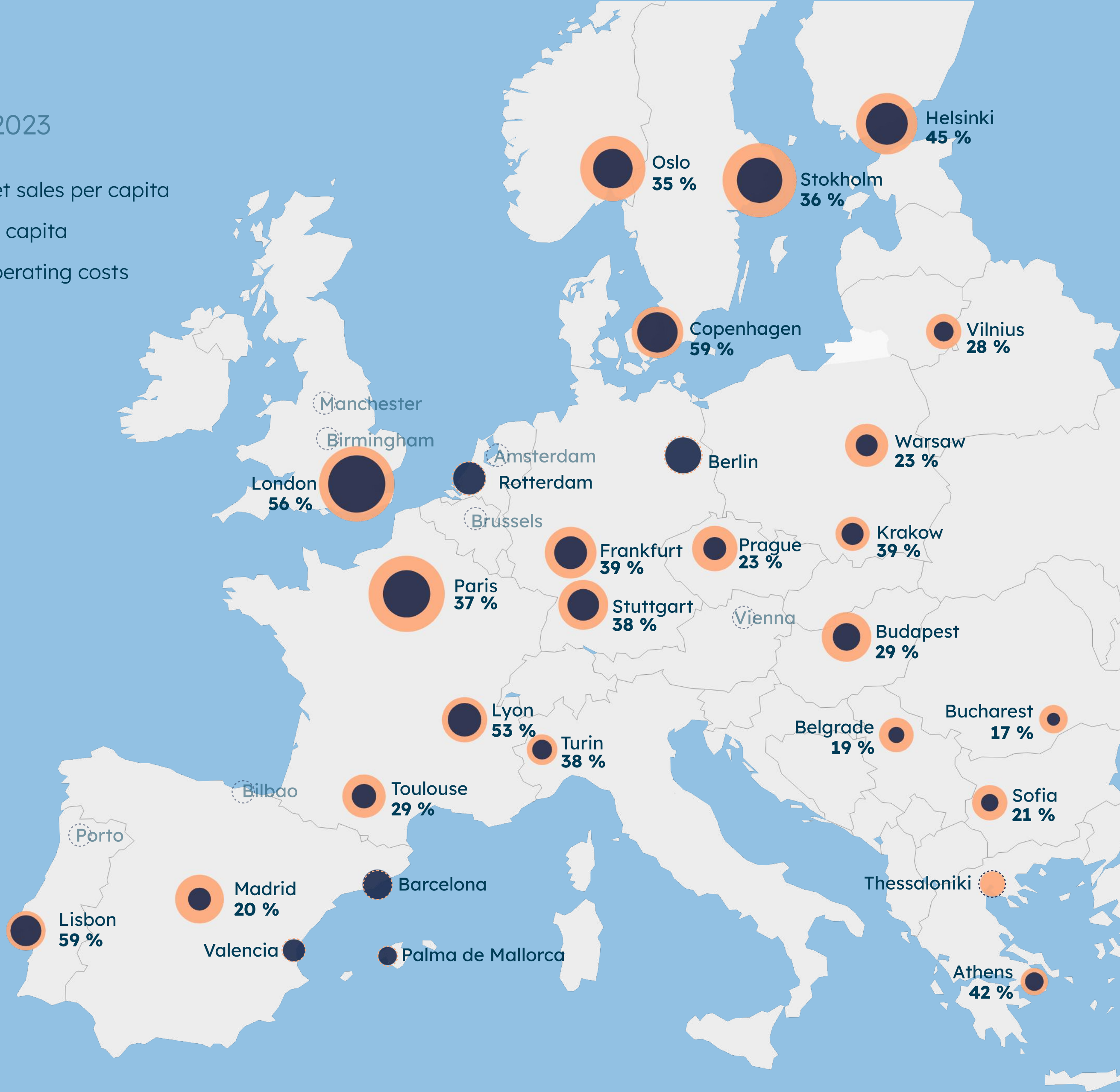
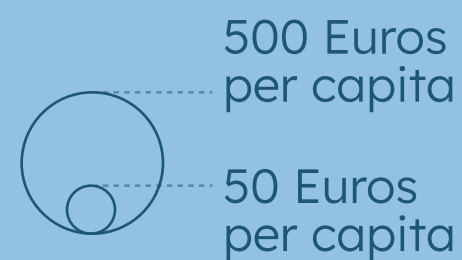
Most PTAs experienced an 8-point or greater drop in their percentage fare coverage since 2019. This is a very substantial and systemic change in PT funding.

In Madrid for instance, fare coverage dropped from 41% down to 20%, operating costs are unchanged but ticket revenue was halved, due to a discounted fare policy coordinated by the national government.

In Vilnius, Krakow and Warsaw, substantial drops in fare coverage are largely due to cost increases reflecting high inflation and spiking energy prices.

## Fare coverage - 2023

- Revenues from ticket sales per capita
- Operating costs per capita
- % Sales revenues / Operating costs
- Incomplete or unavailable data



How to read ? The area of the circles is proportional to the amount in Euros.

# What influences operating costs?

The cost of operations varies greatly across PTA areas, even normalised by population. Yet this cost follows a pattern across Europe: it is close to 1% of the total wealth produced in the PTA area.

The share of local GDP spent on public transport operations correlates with the ridership figures. The relationship suggests how much ridership would increase with larger budgets.

## EMTA IN 2023

### OPERATING COSTS

**€500** per capita

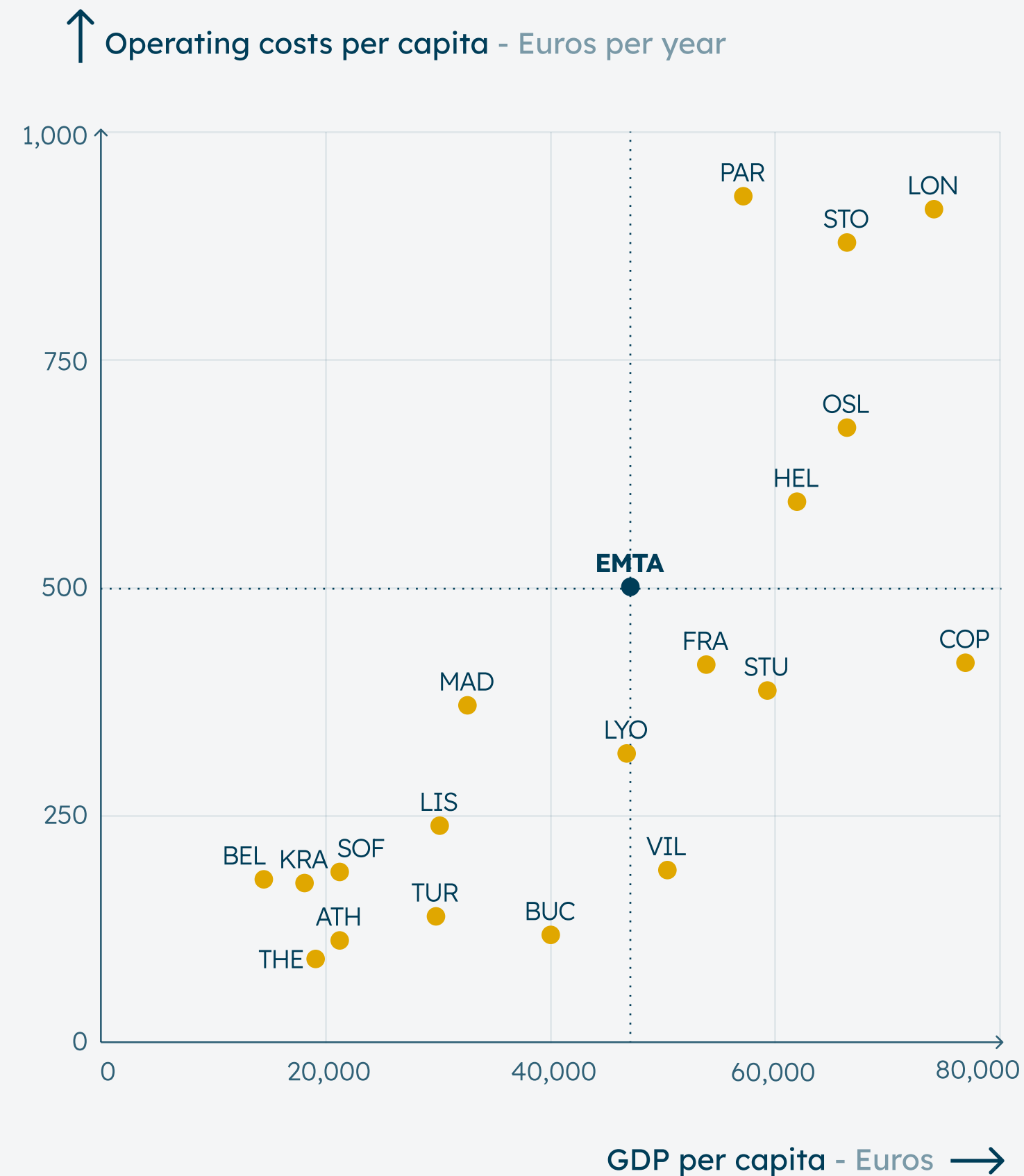
### COSTS / GDP

**1.07%** of GDP

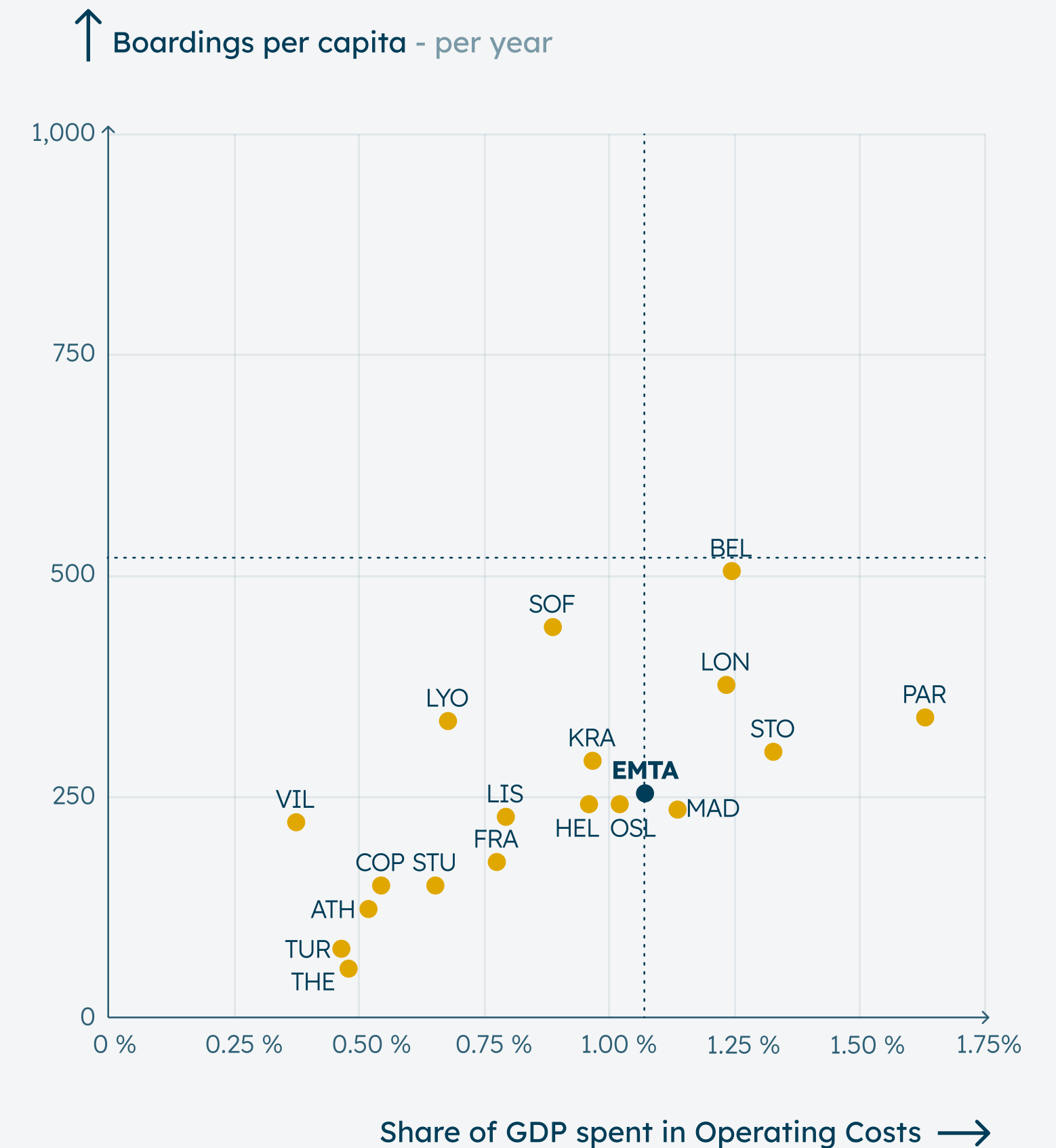
### FARE COVERAGE

**42%** of operating costs

## Comparing PTAs operating costs - 2023



**How to read ?** The PTA of London spent more than 800 Euros per capita on public transport operations in 2023, that compares to a local GDP per capita close to 80,000 Euros.



**How to read ?** The PTAs of Krakow, Helsinki and Oslo spent about 1% of the local GDP on public transport operations, enabling about 250 passenger boardings per unit population in 2023.

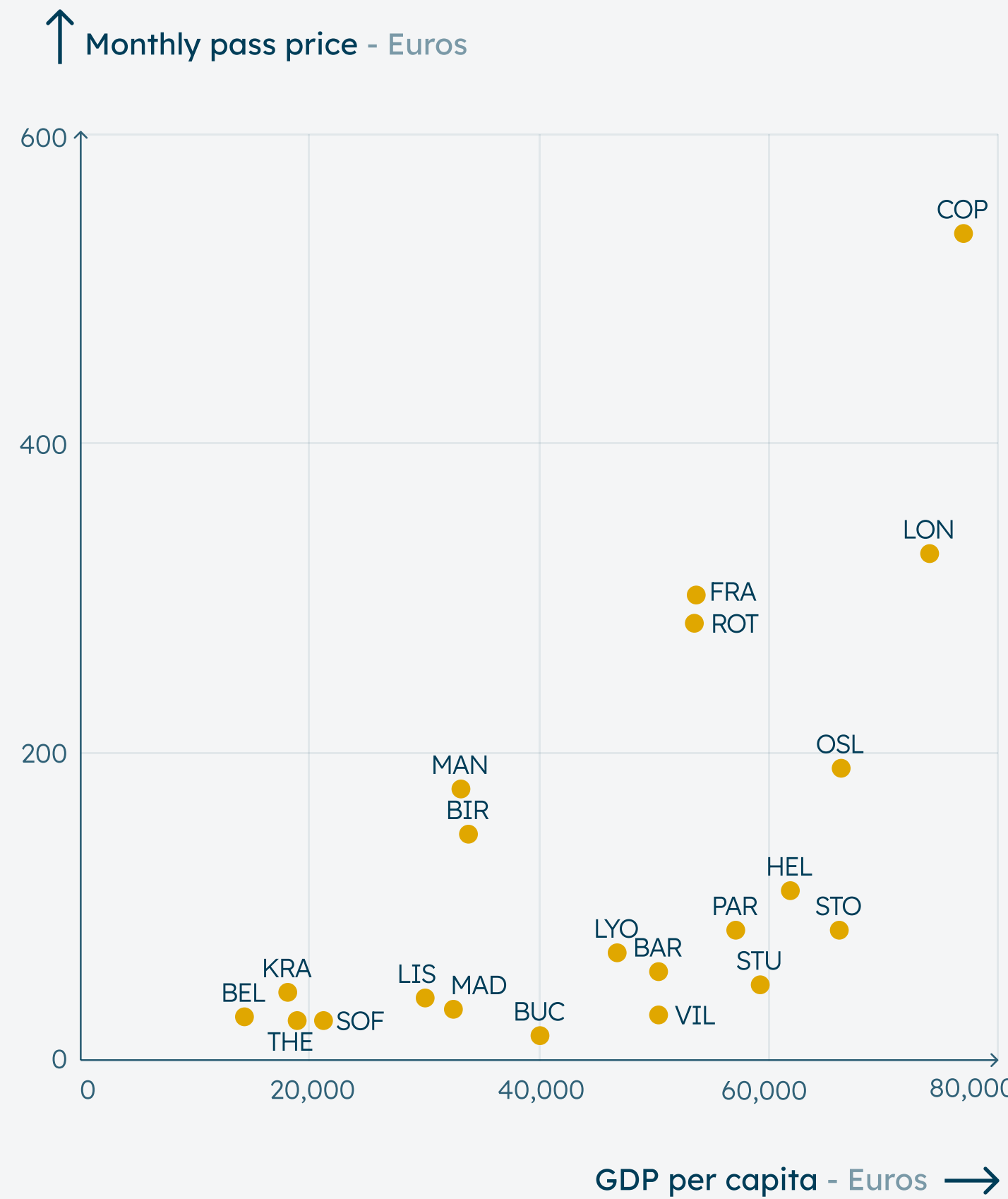


# How does monthly pass price vary across Europe?

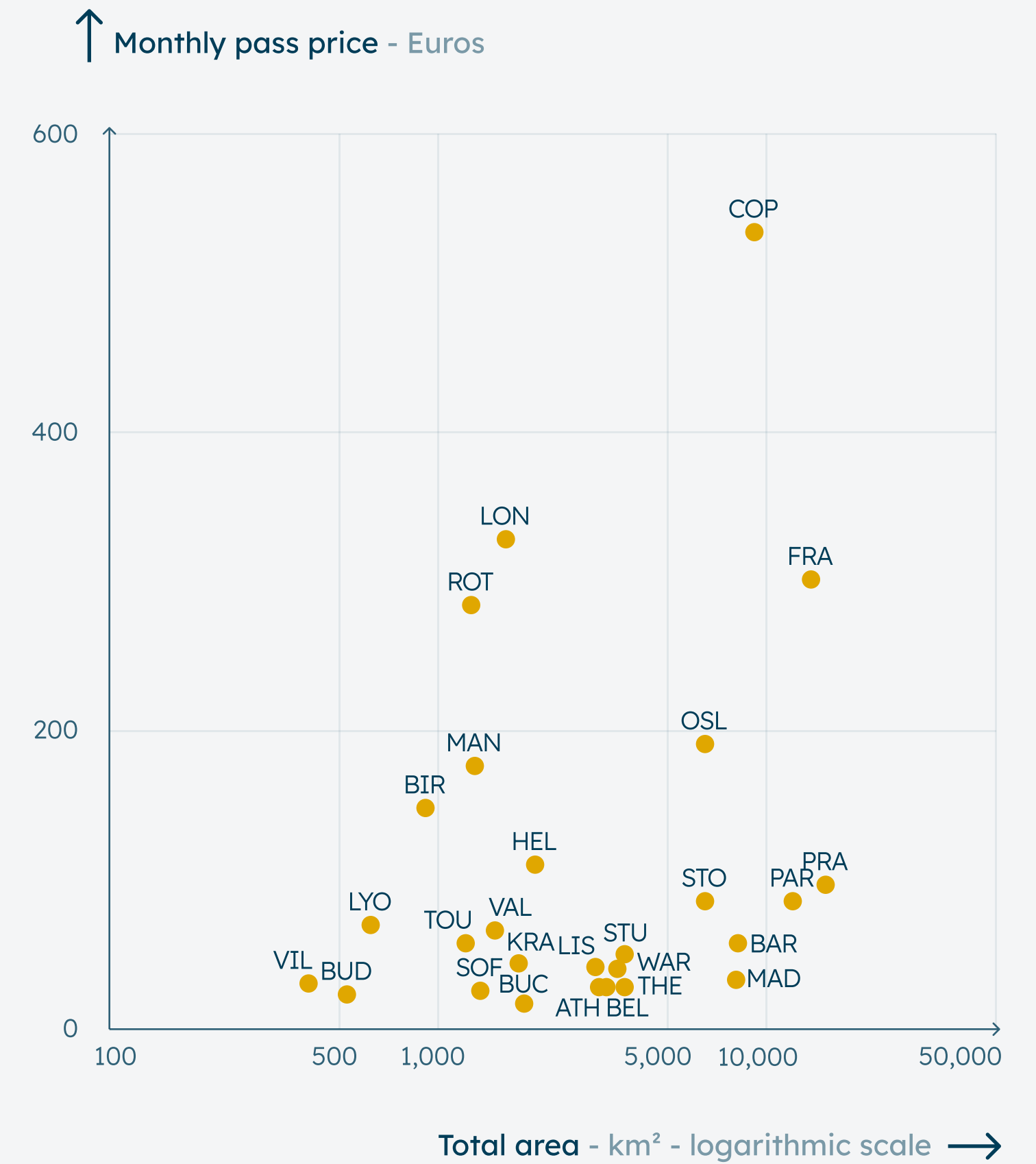
The face value of a monthly public transport pass varies greatly across EMTA members, following differences in wealth and differences in the size of the PTA area, yet mainly reflecting political decisions.

One must bear in mind that the ticket prices displayed here are not necessarily the most sold ticket product in the PTA. Cheaper tickets often exist for students, for low-income residents, for travelling in a subset of zones, etc. Employers in some regions purchase or sponsor monthly tickets for their employees. This report doesn't explore the matter in sufficient detail to make any assessment of the inclusiveness of fare policies across Europe.

## Comparing PTAs monthly pass price - 2023



**How to read ?** The monthly pass price for the Helsinki PTA area is just over 100 Euros, which is lower than EMTA peers considering the local GDP per capita above 60,000 Euros.



**How to read ?** The monthly pass price for the Helsinki PTA area is just over 100 Euros, which seems close to the average of EMTA peers considering a PTA area size of circa 2,000 km<sup>2</sup>.

# How do monthly pass prices varies across Members?

The German D-ticket being introduced in May 2023, it is early to draw conclusions on its effects. Early reports from the Stuttgart region indicate that the D-ticket sales are substantial and have attracted many occasional users to a monthly subscription without stimulating a significantly higher public transport ridership. The PTA for the Frankfurt region chose to display its original monthly ticket price rather than the currently 49 Euros D-ticket.

## EMTA IN 2023

### MONTHLY PASS PRICE

**Min 16** Euros

**Max 536** Euros

Label	Main City	Population PTA area	Surface PTA area km <sup>2</sup>	GDP per capita PTA area in Euros	Operating Costs million Euros	Op. Costs as share of GDP	Op. Costs per Vehicle-km Euros	Revenues from sales million Euros	Costs coverage by Sales % of Op. Costs	Monthly Pass Price Euros
AMS	Amsterdam	1.654.621	1.059 P							
ATH	Athens	3.673.933	3.088	21.231	405	0.52%	2.98	170	42 %	27
BAR	Barcelona	5.806.619	8.154	50.369				761		57
BEL	Belarade	1.681.405 P	3.234	14.398 P	301 P	1.24%	2.15	56	19 %	28
BER	Berlin	6.350.900	30.546	45.772				1,243		
BIL	Bilbao	950.000 P	2.215 P							
BIR	Birmingham	2.953.816 P	911	33.831 P						147
BRU	Brussels	1.244.015	162							
BUC	Bucharest	2.290.125	1.823	40.096	270	0.29%	2.60	45	17 %	16
BUD	Budapest	1.671.004	525		640		5.84	183	29 %	23
COP	Copenhagen	2.702.033	9.201	76.975	1.130	0.54%	7.95	672	59 %	536
FRA	Frankfurt	5.408.188 P	13.583 P	53.782 P	2.255	0.78%	9.60	850 P	38 %	301
HEL	Helsinki	1.395.693	1.969	61.948 P	830	0.96%	7.25	376	45 %	110
KRA	Krakow	1.215.808 P	1.745	18.095 P	213	0.97%	3.53	83	39 %	44
LIS	Lisbon	2.899.670	3.015	30.130	691	0.79%	4.66	409	59 %	40
LON	London	8.866.180 P	1.605	74.186 P	8.111 P	1.23%	14.33	4.567	56 %	328
LYO	Lyon	1.451.405	622	46.851	460	0.68%	8.30	243	53 %	69
MAD	Madrid	6.732.223	8.102	32.530	2.486	1.14%	7.14	491	20 %	33
MAL	Palma de Mallorca	940.332	3.636					43		
MAN	Manchester	2.934.637 P	1.295	33.306 P						176
OSL	Oslo	1.430.119	6.529	66.428	968	1.02%	10.61	342	35 %	190
PAR	Paris	12.283.527	12.065	57.150	11.445 P	1.63%	23.07	4,260	37 %	84
POR	Porto	1.764.974 P	2.041	22.198 P						
PRA	Praque	3.237.604	15.162		1.035		4.42	239	23 %	97
ROT	Rotterdam	2.475.263	1.256	53.597				391		284
SOF	Sofia	1.228.646	1.345	21.162	231	0.89%	3.70	49	21 %	26
STO	Stockholm	2.454.821	6.512	66.265	2.157	1.33%		782	36 %	85
STU	Stuttgart	2.782.758	3.653	59.294 P	1.076 P	0.65%	9.11	414	38 %	49
THE	Thessaloniki	1.089.819	3.677	19.150	100	0.48%	3.09			27
TOU	Toulouse	1.096.825	1.198		317		8.42	93	29 %	56
TUR	Turin	4.248.638	25.374	29.892	590 P	0.46%	4.67	225 P	38 %	
VAL	Valencia	1.886.270	1.481		283		8.11	132	47 %	66
VIE	Vienna	3.921.104	23.550	42.080						
VIL	Vilnius	593.033	401	50.311 P	111	0.37%	2.55	32	28 %	29
WAR	Warsaw	2.897.337	3.512		832		3.17	194	23 %	40



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**7**

# **Covid Crisis Recovery**

# How did the COVID crisis impact activity?

Despite the opening of new lines and extension of other lines, most EMTA members didn't increase VKM production significantly since 2019. Severe driver shortages in 2023 have negatively influenced this output, as reported by PTAs in Amsterdam, Berlin, Paris, Prague, Rotterdam and Vilnius.

A majority of PTAs experienced an increase in operating costs by at least 9% since 2019 and up to 57% in Eastern Europe. This is due to the combined effects of higher energy price and higher wages in the context of high inflation.

## Comparing ● 2019-2020 changes and ● 2019-2023 changes among PTAs

Only PTAs with a similar scope in 2019, 2020 and 2023 are presented here.



**How to read ?** Amsterdam PTA reduced its service (Vehicle-km) by nearly 20% in 2020 compared to 2019 to cope with a more than 50% drop in demand (Boardings) in 2020 compared to 2019. Operating costs have increased by 27% in the Warsaw PTA from 2019 to 2023, whereas sales revenue dropped by 4%.

# What is the extent of the crisis 4 years later?

The number of boardings in 2023 remains lower than in 2019 in the vast majority of PTAs. Passenger boardings are again on a growth trajectory but not on the same track as they were before the pandemic. Most often cited explanations include remote working and more people cycling. What is encouraging is to see that public transport ridership in 2023 increased by 10% year-on-year.

What requires the attention of decision makers is that ticket sale revenue fell in most PTAs, leading to a greater dependence on subsidies, deteriorating the ability to invest in new lines, digitalisation or decarbonisation.

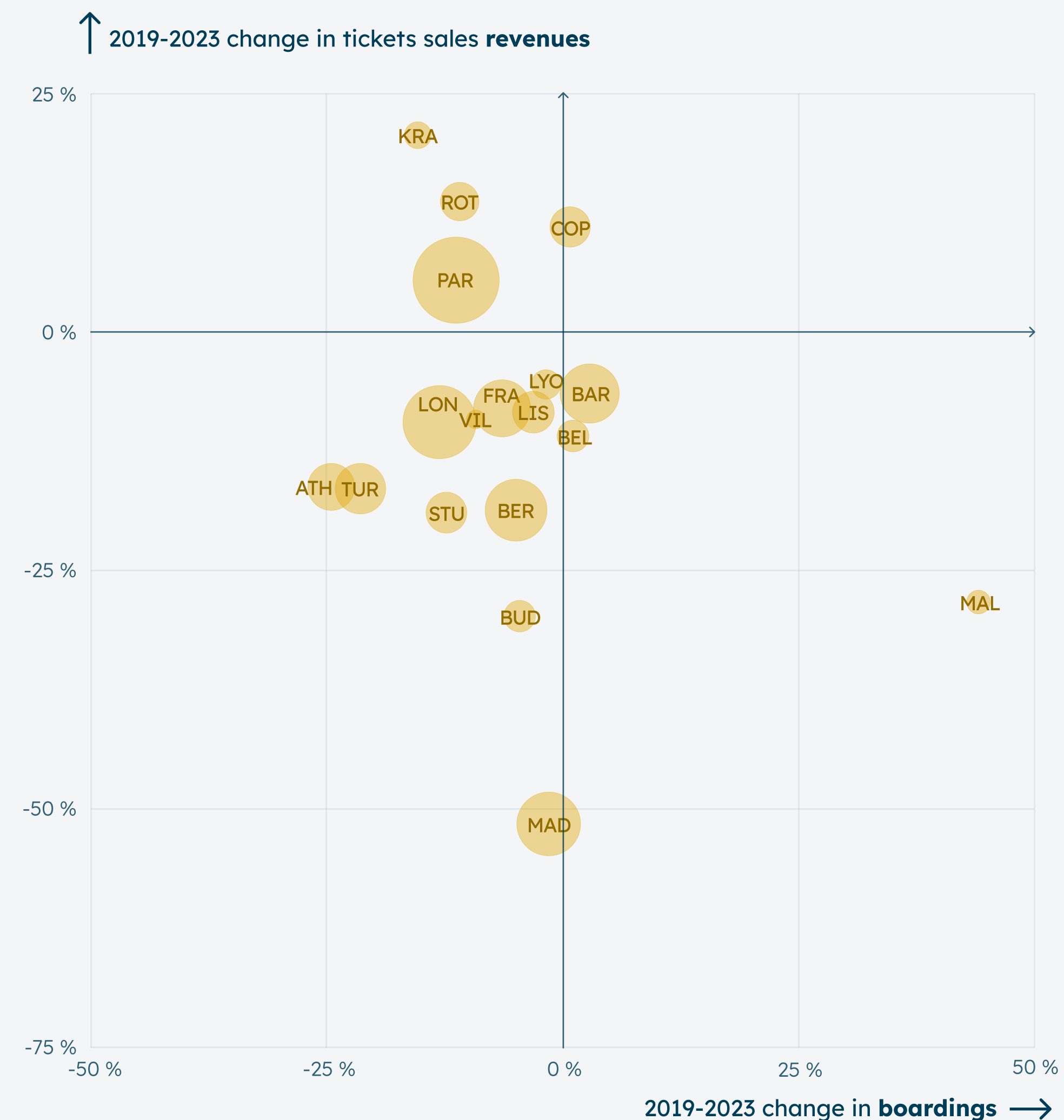
## Changes in revenues compared to changes in boardings - 2019-2023 variations

Only PTAs with a similar scope in 2019, 2020 and 2023 are presented here.



Number of inhabitants

**How to read ?** Over the Berlin PTA area, the number of passenger boardings fell by 5% since 2019 but ticket sale revenue fell by 20%.



## 7/ COVID RECOVERY

P = provisional value in 2019, 2020 or 2023

Label	Main City	Population Change 2019-2020	Population Change 2019-2023	Boardings Change 2019-2020	Boardings Change 2019-2023	Vehicle-km Change 2019-2020	Vehicle-km Change 2019-2023	Op. Costs Change 2019-2020	Op. Costs Change 2019-2023	Sales Revenues Change 2019-2020	Sales Revenues Change 2019-2023
AMS	Amsterdam	1.1%	6.8%	-50.9%	-13.4%	-10.0%	-17.5%	-2.4%		-42.3%	
ATH	Athens	-0.1%	-1.8%	-48.0%	-23.6%	-3.1%	4.3%	0.8%	5.1%	-50.5%	-16.7%
BAR	Barcelona	1.3%	3.2%	-46.5%	2.8%	-11.7%	2.5% P	-5.0%		-49.2%	-6.4%
BEL	Belarade	-0.2%	-0.9% P	-16.0%	1.2% P	-5.3%	7.3%	-4.8%	45.5% P	-66.9%	-11.0%
BER	Berlin	0.1%	2.6%	-36.4%	-5.1%	1.5%	6.5%			-21.1%	-18.8%
BIL	Bilbao	0.0%	-17.3% P					0.0%			
BIR	Birminaham	0.4%	0.9% P	-64.5%	-12.1%	-3.0%	-15.7%				
BRU	Brussels										
BUC	Bucharest	0.3%	-1.4%								
BUD	Budapest	-0.1%	-4.6%	-35.0%	-4.5%	0.0%	-3.8%	-9.7%	4.3%	-38.9%	-29.8%
COP	Copenhagen	0.0%	2.2%	-31.5%	0.9%	-0.1%	1.4%	-0.8%	7.5%	-28.5%	10.9%
FRA	Frankfurt	0.0%	3.2% P	-35.8%	-6.4%	1.7%	10.0%	4.3%	29.1%	-15.6%	-10.1% P
HEL	Helsinki	0.9%	5.0%	-36.8%	-13.9%	-2.0%	-3.4%	-2.2%	12.9%	-36.5%	-1.7%
KRA	Krakow	4.2%	10.3% P	-47.1%	-15.4%	-7.1%	4.1%	1.2%	57.0%	-40.3%	20.6%
LIS	Lisbon	0.0%	0.5%	-44.2%	-3.3%	-6.9%	23.8%	-0.4%	9.1%	-45.9%	-8.5%
LON	London	0.5%	-1.1% P	-66.4%	-13.3% P	-3.6%	-2.9% P	-11.0%	-5.7% P	-71.5%	-9.6%
LYO	Lyon	1.1%	3.7%	-34.5%	-1.8%	-5.1%	9.7%	-5.0%	8.4%	-34.6%	-5.6%
MAD	Madrid	1.7%	1.0%	-46.3%	-1.3%	-4.7%	3.8%	-8.5%	0.1%	-42.5%	-51.9%
MAL	Palma de Mallorca	1.8%	4.9%	-52.3%	44.2%					-62.5%	-28.4%
MAN	Manchester	0.4%	3.5% P	-59.0%	-14.8%	-12.6%					
OSL	Oslo	0.8%	5.2%	-39.0%	-3.5%	1.6%	5.9%				
PAR	Paris	0.1%	0.2%	-43.2%	-11.0%	-3.7%	0.0%	-0.4%	10.6% P	-31.3%	5.5%
POR	Porto	0.1%	1.3% P	-40.2%		-0.7%		-4.6%			
PRA	Praque	4.0%	24.0%	-35.5%	-14.5%	-4.8%	23.5%				
ROT	Rotterdam	0.4%	3.5%	-46.4%	-10.8%					-32.8%	13.6%
SOF	Sofia										
STO	Stockholm	0.6%	3.3%	-34.0%	-14.4%	0.9%		2.5%	5.5%	-37.6%	-6.1%
STU	Stuttgart	-0.5%	9.7%	-39.7%	-12.2%	3.2%	12.3%	-0.9%	16.6% P	-20.9%	-19.0%
THE	Thessaloniki	-0.1%	-1.3%			-1.4%	16.5%				
TOU	Toulouse										
TUR	Turin	-0.8%	-1.5%	-37.7%	-21.5%	-14.6%	-3.5%	-16.1%	-11.3% P	-50.2%	-16.5% P
VAL	Valencia	5.4%	7.9%	-39.7%	17.2%	-13.1%	-0.3%	-7.7%	31.4%	-48.3%	11.2%
VIE	Vienna	0.5%	0.8%	-40.3%		-2.7%				-16.0%	
VIL	Vilnius	1.4%	5.6%		-9.2%	0.0%	-0.6%	-1.2%	56.5%	-35.7%	-9.2%
WAR	Warsaw	5.1%	5.9%			-0.1%	0.3%	-4.4%	27.4%	-38.8%	-4.5%

# DEFINITIONS

## **Population** - inhabitants

Number of inhabitants in the considered perimeter

## **Total area** - km<sup>2</sup>

Total surface for the considered perimeter

## **GDP** - million Euros

Gross Domestic Product for the considered perimeter

## **Average number of journeys in a day** - journeys

It's the total number of journeys in the urban area on an average day, including all travel purposes and all modes of transport (not only public transport). A journey is made of one or several boardings that enable the movement from a meaningful origin (e.g. home) to a specific destination (e.g. office) with a single purpose (e.g. going to work).

## **Modal share of public transit** - share of journeys

Share of journeys in the urban area that include at least one trip on a public transport mode, even if it's in connection. The displayed value is based on the latest available survey, which may have been conducted several years earlier.

## **Modal share of motorised vehicles** - share of journeys

Share of journeys in the urban area undertaken with individual motorised vehicles. For a given year, the displayed value is based on the latest available survey, which may have been conducted several years earlier.

## **Modal share of walking** - share of journeys

Share of journeys in the urban area undertaken by walking. The complete journey should be walked. For a given year, the displayed value is based on the latest available survey, which may have been conducted several years earlier.

## **Modal share of cycling** - share of journeys

Share of journeys in the urban area undertaken by cycling. The complete journey should be cycled. For a given year, the displayed value is based on the latest available survey, which may have been conducted several years earlier.

## **Car ownership rate** - cars per 1,000 inhabitants

Number of privately owned automobiles in the perimeter, divided by the number of inhabitants in the same perimeter, and multiplied by 1000.

## **Number of lines** - lines

Number of commercial service lines for the considered transport mode, for an average day during the week.

## **Boardings** - million boardings

Number of boardings for the considered transport mode in a year. A boarding is a movement using a single transport mode. Eg. If someone makes an interchange from one bus to another, this counts as 2 boardings. Every boarding of any public transport vehicle counts as 1 boarding.

## **Vehicle-kilometres** - million vehicle-km

Total distance covered by vehicles for the considered transport mode to provide public transport services, in a year. It's the sum of all kilometres covered by all vehicles. Only the kilometres for commercial service is taken into account, excluding deadhead runs from and to depots.

## **Operating costs** - million Euros

Annual service operation cost of public transport in the urban area for all services in the scope of the area. Operating costs include expenditure on staff (including social security contributions and pensions), energy expenditure, purchases of external goods and services (including subcontracting), vehicle maintenance expenditure, miscellaneous costs (e.g. rental), financial costs, depreciation expenditure, taxes and duties. It does not include special maintenance or investment programs for infrastructure and vehicles.

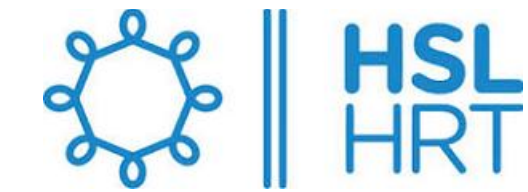
## **Monthly pass price** - Euros

The cost of a monthly pass for an adult allowing travel throughout an entire urban area.

## **Revenues from tickets sales** - million Euros

Annual revenue from ticket sales in the urban area from all services and transport modes in the urban area's scope.

# EMTA MEMBERS





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