

InnoTrans 2022  
Market Study on Monorail Systems

**SCI** / Verkehr

Author



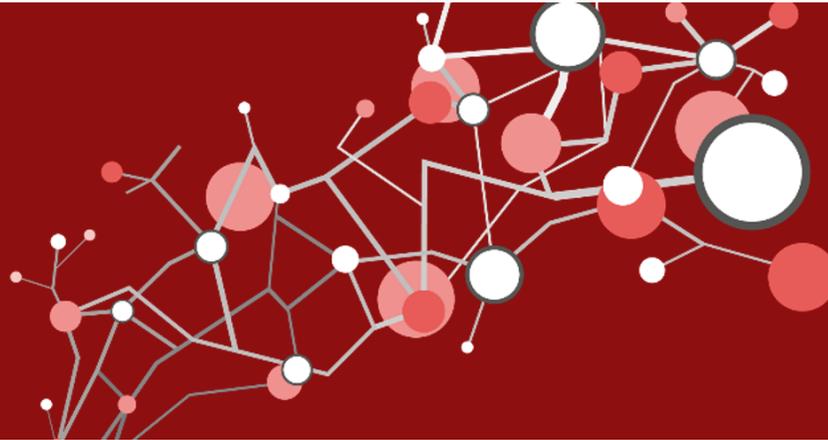
Editor

Nicolas Wille / Cologne / 22. September 2022

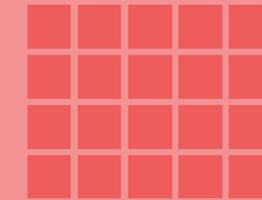
## SCI Verkehr - Navigator and expert for the railway and logistics branch

### Locations

HAMBURG  
BERLIN  
COLOGNE



### Systematic market observation



20  
current  
studies

### International customer base



### Experience from

28 years

### Expert knowledge of global transport markets



### Individual consulting

> 3.500  
projects





Monorail Systems are established Automated Transport Solutions which are in operation for more than 100 years...

Although playing a niche role in Public Transport, the market for monorails is dynamically increasing:

How does that fit together?

# BACKGROUND

Urbanization is one of the global megatrends – and a challenge for urban transportation as passenger volumes are growing and routing for new lines is increasingly difficult to limited space

**Megacities** (in 2021)



- The number of megacities\* is expected to grow:

**29** (in 2021)

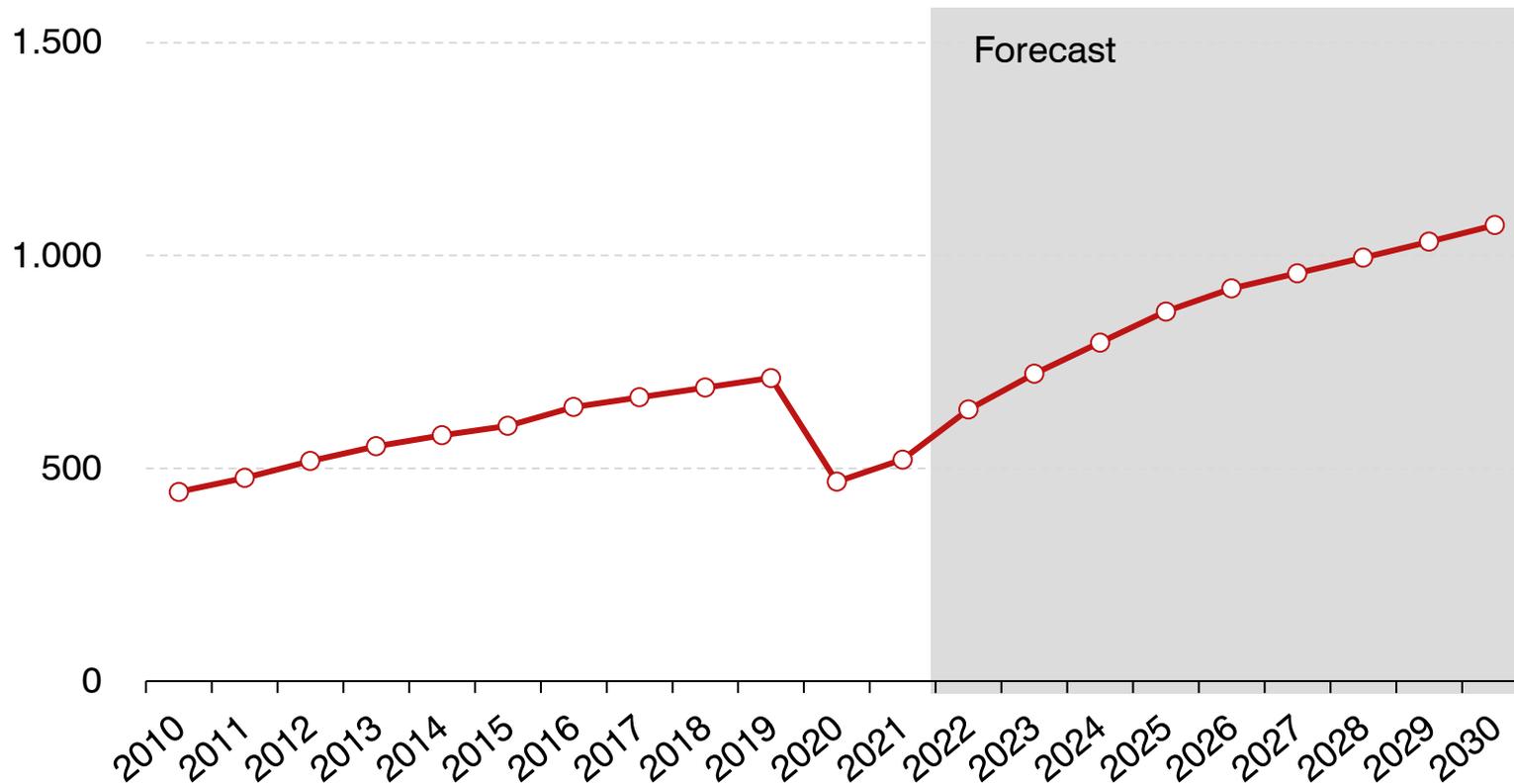
**~ 50** (in 2035)

- Today, 7 of the 10 largest megacities in the world have a Monorail system – with the opening of the Monorail system in Cairo, the 8th megacity will join the club.

\* with >10 million inhabitants

Although Covid pandemic had a negative impact on urban transport volumes, SCI Verkehr expects that demand will recover and further grow – more than 1 trillion pkm will be reached until year 2030

**Urban transport performance worldwide** (in billion pkm)

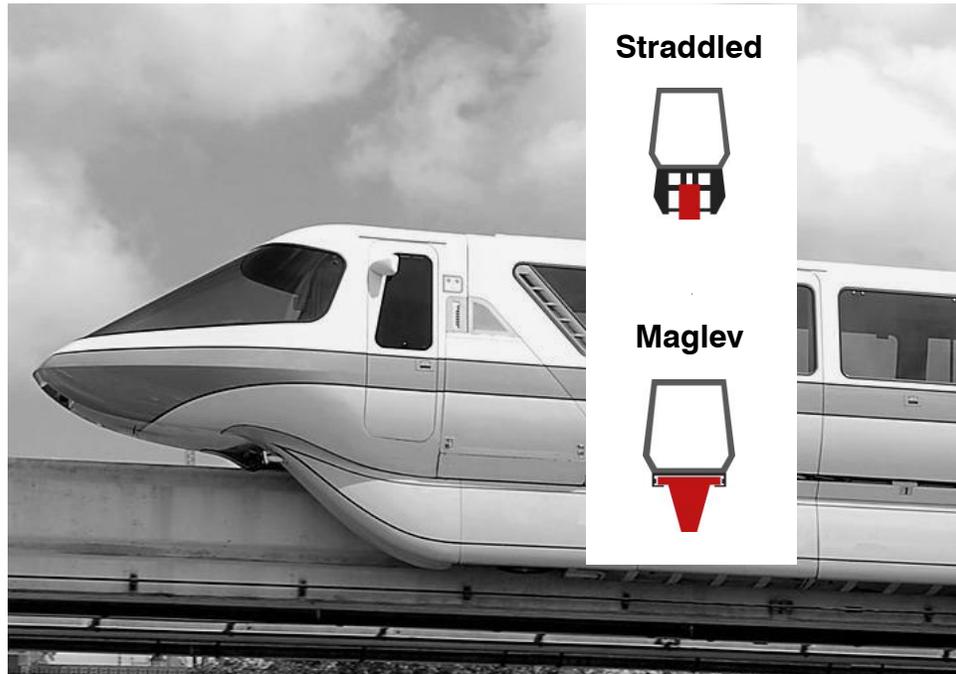


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- The demand for Urban Transport solutions is increasing dynamically – and creates challenges for urban operators and transport planners:
  - Caused by growing population, the density of buildings and traffic in many megacities is extreme.
  - It is often not possible to expand Metro lines or build new ones.
  - More and more elevated transport solutions will be evaluated as space on the surface is limited.
- Monorails are an option because of their design, tighter curves, and steeper gradients they can be better integrated in existing structures.

# STATUS QUO

There exist different types of Monorail systems – the majority is straddled, only a few suspended ones exist



**Straddled**



**Maglev**



**87%**

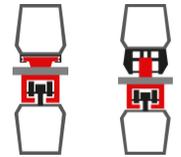


**Suspended**



**13%**

**Multi-standard**

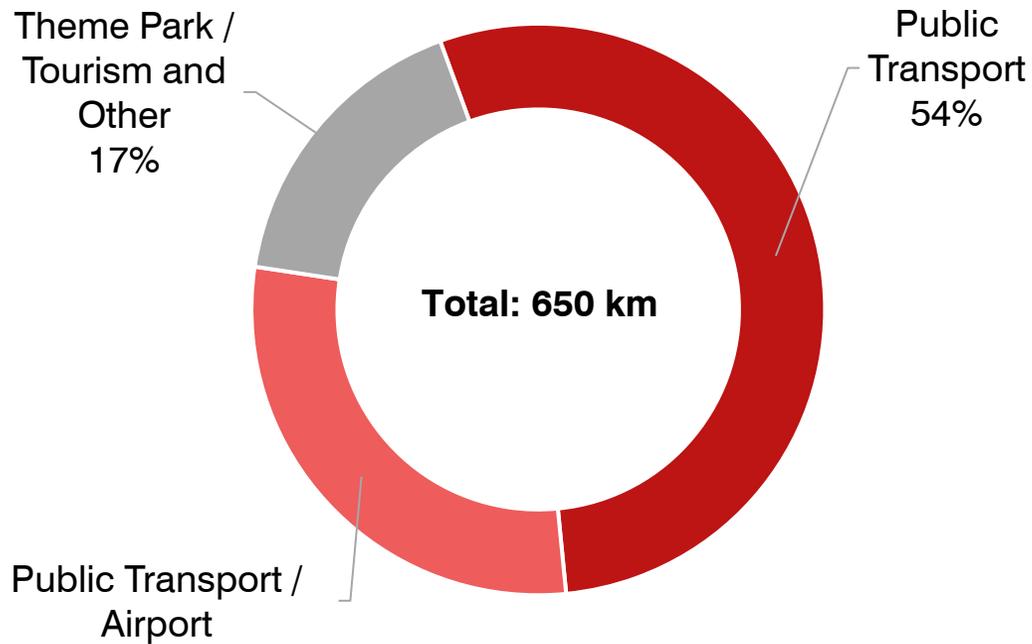


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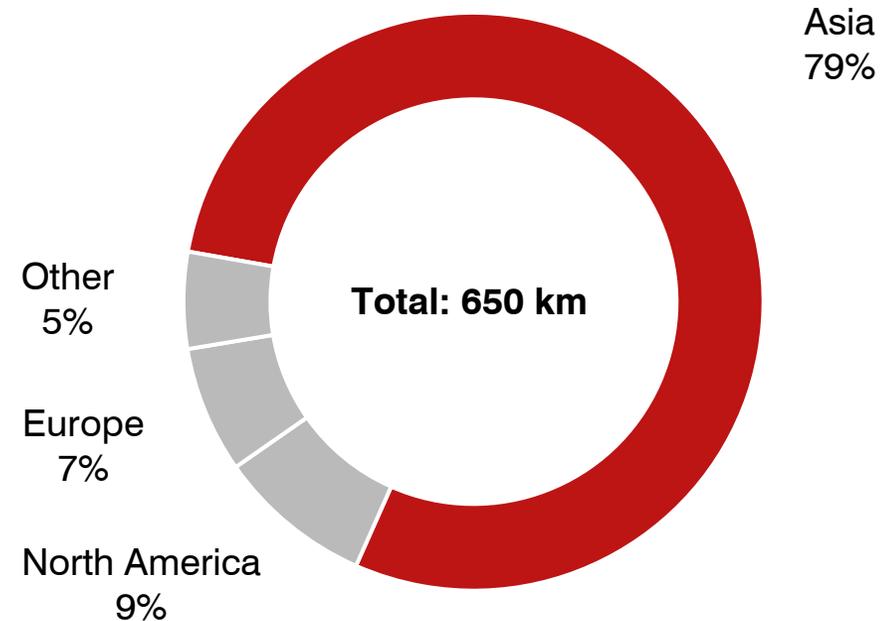
combination of both types is possible, but not yet in operation.

Monorail System have an increasing importance in Public Transport: Today, more than 80% of line-kilometers are related to Public Transport (including Airport links) – Asia is by far the largest market

**Share of line purpose worldwide (by length)**

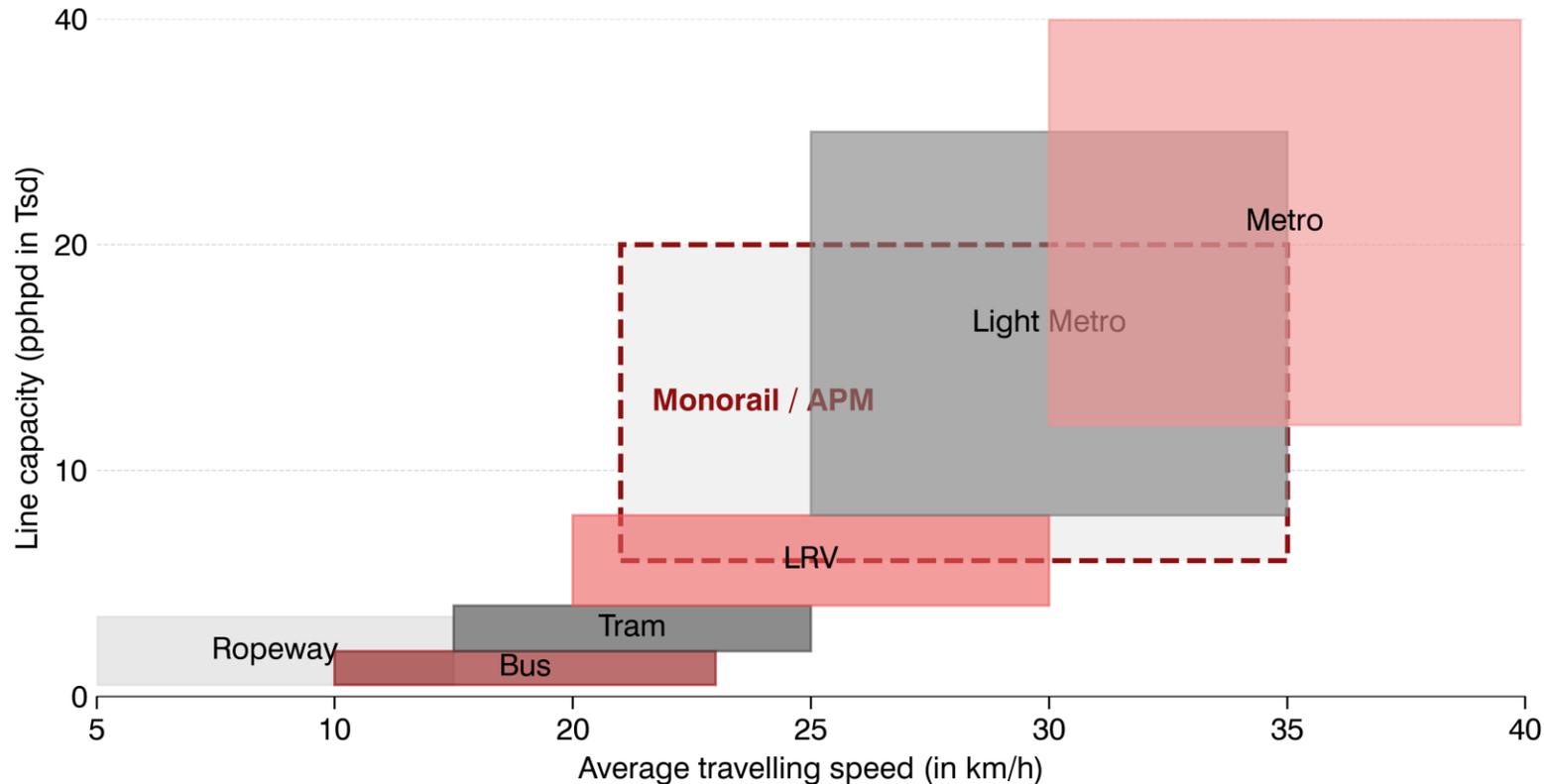


**Regional shares worldwide (by length of systems)**



Monorail systems are a supplement to the product portfolio of urban transport systems and not a direct competitor in the classic application areas of bus, tram, light-rail vehicle (LRV) & metro systems

Comparison of urban transport systems



- Modern technological improvements (in materials technology and digitization/automation) support the performance of Automated Transport Systems like Monorails.
- Due to their construction, tighter curves and larger inclines Monorail systems can be routed and thus better integrated into the existing settlement structure.
- In case that an elevated transport solution is required, because space on the surface is limited, Monorail have advantages against classical transport modes (more often relevant in Asia or South America than in other regions).

# OUTLOOK

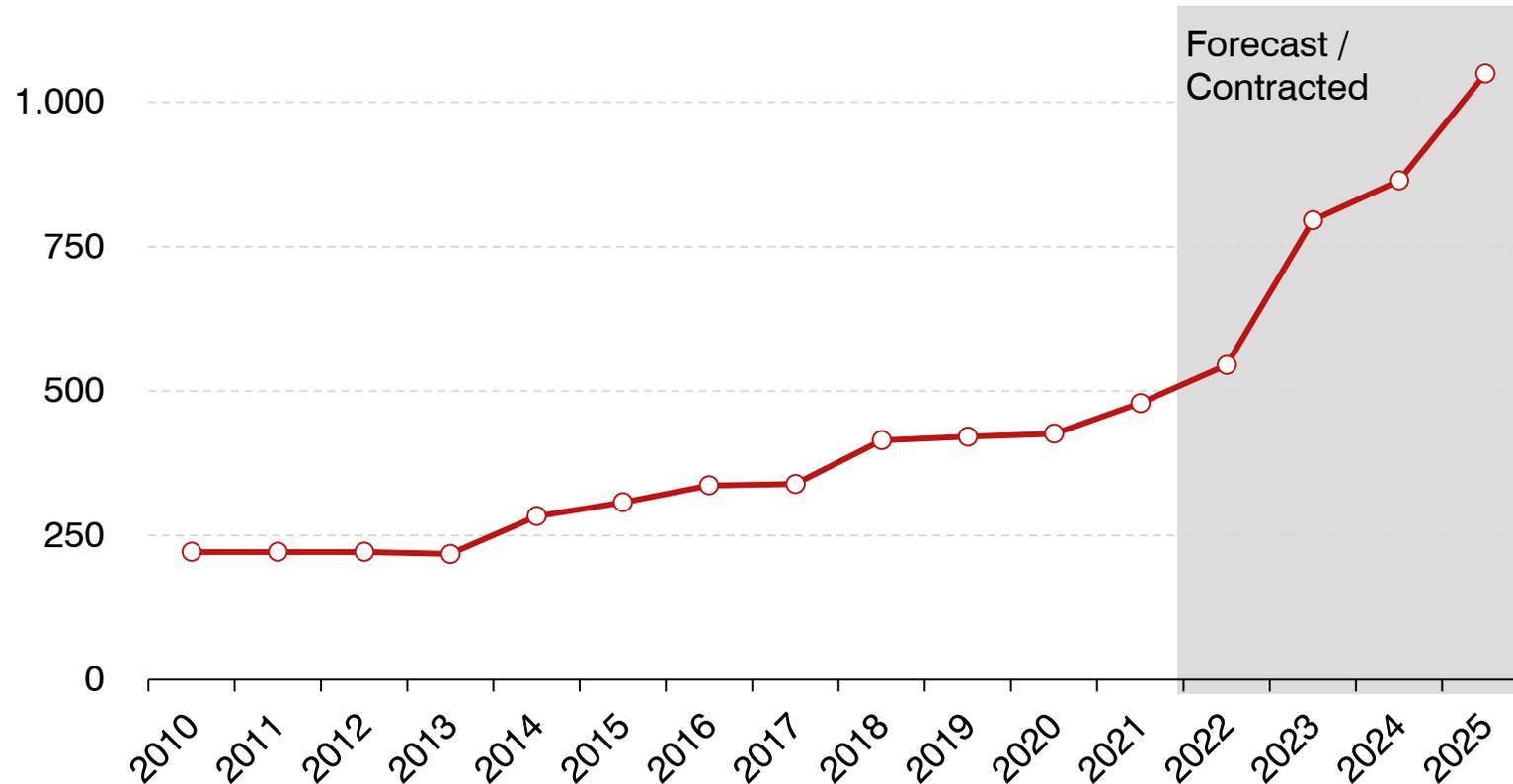
Projects under construction underline the growing importance of Monorails in Public Transport and will increase line length and fleet size in the world significantly



**The largest monorail projects under construction (in 2022)**

Especially to the projects in Asia, the Monorail network has more than doubled in length over the past 10 years and the dynamic will grow in the next 3 years based on already started construction of lines

Development of line length with purpose public transport or airport (in km)



+115%

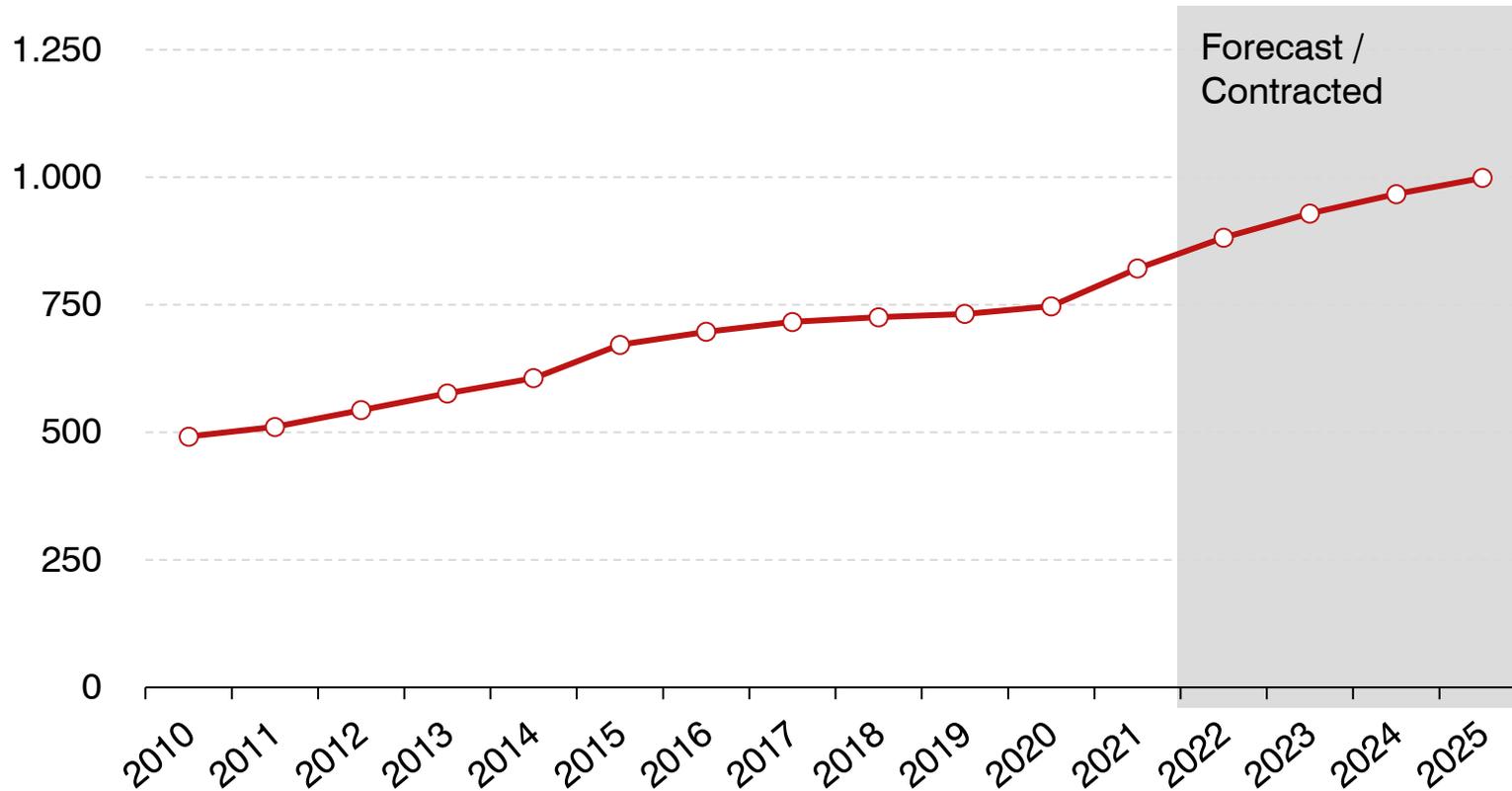
2010 – 2021

+120%

2021 – 2025

The Monorail fleet in Public Transport is continuously increasing – new projects and line extensions will lead to a fleet of more than 1.000 units in 2025 – it will have more than doubled compared to 2010

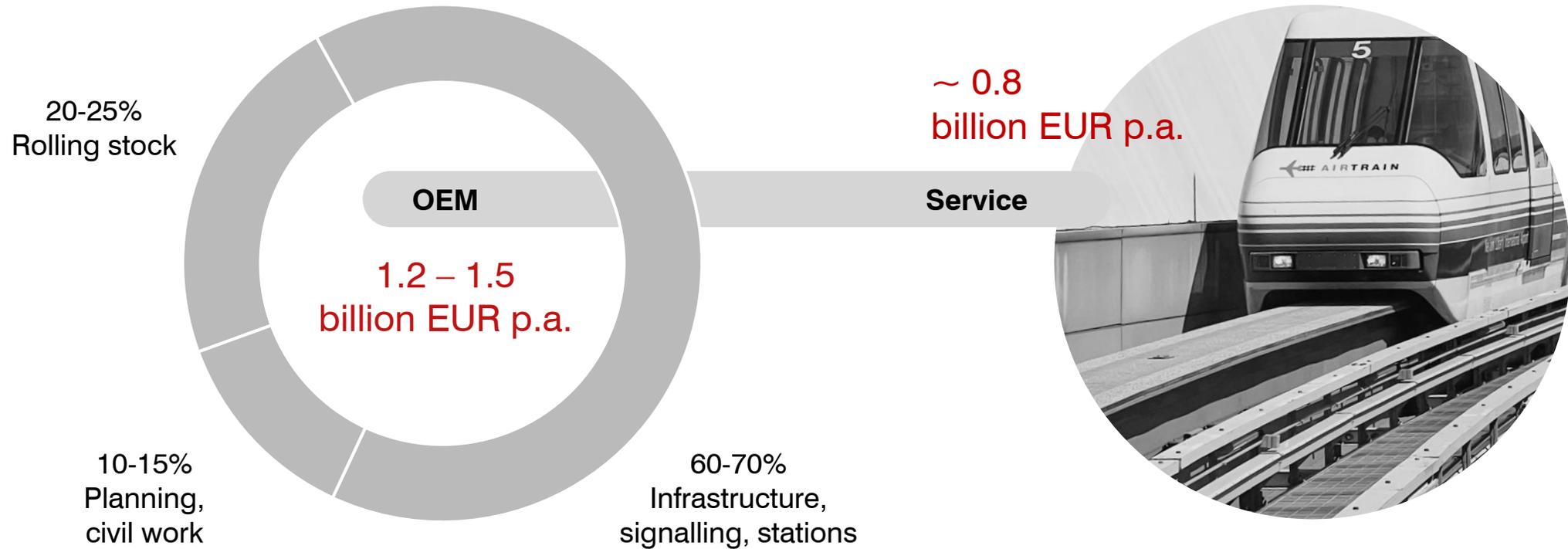
Development of fleet size worldwide with purpose public transport or airport (in units)



**+ 105%**  
2010 – 2025

The total market volume for Monorail systems in the years 2025 to 2035 will increase to an average yearly size of more than 2 billion Euros\*

OEM market volume (by segment)



\* With today's price level in 2022 (price increase / inflation is excluded from the figures)



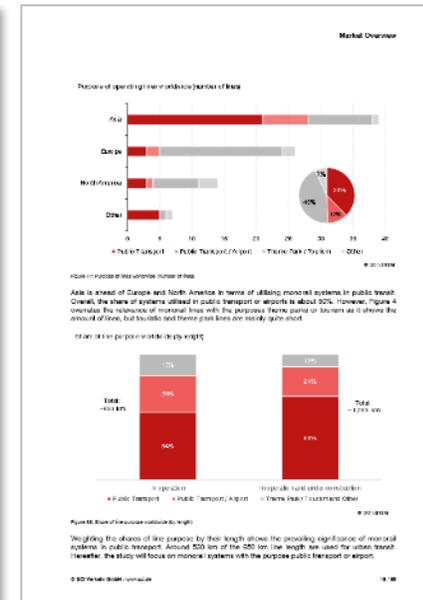
You are interested  
in more details about  
Monorail market...?

Further information on the market for monorail systems can be found in the current study published by International Monorail Association and worked out by SCI Verkehr during summer 2022

The study was a collaboration between SCI Verkehr and the International Monorail Association.

Content

- Classification of Monorail Systems
- Market Overview
- Market Outlook
- Data Appendix
  - Systems in public transport
  - Lines with other purposes



It is available at [sci.de/shop](https://sci.de/shop).

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