



## **THE CHINESE RAILWAY MARKET**

Facts, Figures, Players and Trends

**The Chinese railway technology market has reached a current volume of more EUR 30 billion, and will continue to grow by c. 2% per year. The most important railway market on a global scale will mainly benefit from a growing After-Sales market, but its OEM market will record a negative development (-0.9%), mainly influenced by the decreasing activity in the very high-speed segment. The rail freight segment is under pressure due to slowing economic growth and decreasing developments in industrial sectors steel, iron, and coal. Continuing growth in urban rail, suburban rail, and intercity high-speed railway ensures high overall market volumes.**

In the past few years, China has developed into the largest and one of the most dynamic rail markets in the world. There have been massive investments in the rail sector, especially in high-speed systems. Investments reached an enormous peak in 2010 of EUR 120 billion. Since then, investments into rail technology in China have been reducing, but, overall, have remained noticeably above the 2008 level. Whereas in previous years investments were primarily in very high-speed and long-distance passenger rail transport, China's investments in the coming five years will focus on intercity high-speed lines, regional passenger rail and urban transport.

The rail freight segment is suffering from slowing economic growth and, especially, from a crisis in the steel and iron sector as well as decreasing developments in the coal sector, which lead to very low procurement volumes for freight wagons and locomotives. China Railway has reported a decline in rail freight of 13.7% of the total transport volume in 2015, measured in tkm. This is the largest recorded annual decline in rail freight, ever.

The After-Sales market in China is growing particularly fast and gaining importance against OEM products due to the massive fleet and network expansion. Rolling stock is especially important and makes up 70% of the total After-Sales market. Heavy maintenance for rolling stock is generally carried out by the rolling stock manufacturer CRRC. Challenged by decreasing OEM procurements and, respectively, overcapacity, increasing After-Sales volumes will generate new business for CRRC. However, China Railway also plans to strengthen its own heavy maintenance capabilities, especially in the high-speed train segment. It can be expected that CRC will do more After-Sales services in house, instead of contracting them to third parties, to reduce costs and increase own capacity utilisation. Thus, Chinese manufacturers cannot benefit fully from the increasing After-Sales market, but have to focus on international business to balance slowing developments in the home country.

### **In concrete terms, this MultiClient market includes:**

- Management summary listing the most important developments and trends in the railway market
- The structure and development of the railway transport markets and investment strategy
- An overview of the market development of the railway technology market, subdivided into product groups
- An analysis of rolling stock fleets and rail infrastructure stocks, differentiated by investment purpose, and market shares in the product segments
- Analysis and appraisal of the most significant infrastructure and system technology projects as well as rolling stock procurements
- Fact sheets of the most important product and service providers and private operators

The market study is based on a number of sources of information from the press and discussions with experts which are continuously analysed, validated and entered into the SCI Database.

The study is available in English from **September 2016**.

SCI Verkehr GmbH is an independent consultancy company specialising in the technology and economics of transport. We have close connections to the rail industry, with consultants in a wide range of specialist fields. We have an extensive network of experts in Germany and abroad and we specialise in market and strategy aspects for the mobility sector. Our activities focus on companies in the transport and rail industry, logistics, public and private transport companies and transport and economics departments in public administration at federal, regional and municipal level.

Your contact:

Ann Kathrin Arntz

Phone: +49 221 93178 20

Fax: +49 221 93178 78

Email: [a.arntz@sci.de](mailto:a.arntz@sci.de)

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### 3. Market Structures

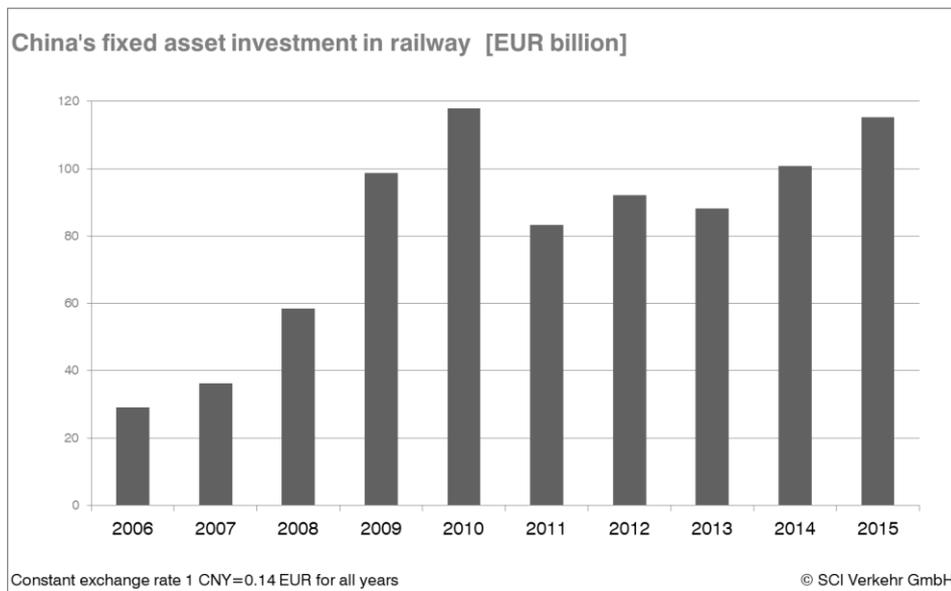
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#### 3.5 Investments

[.....]

Under the 12th Five-Year Plan (2011-2015), the government increased overall investment in rail fixed assets to CNY 3.4 trillion, 42% more than the investment of CNY 2.4 trillion during the 11th Five Year Plan (2006-2010). Under the 13<sup>th</sup> Five-Year Plan (2016-2020), official announcements indicate an investment in fixed assets far above CNY 2.8 trillion and it could reach CNY 3.8 trillion. Under the 12th Five-Year Plan (2011-2015), the government increased overall investment in rail fixed assets to CNY 3.4 trillion, 42% more than the investment of CNY 2.4 trillion during the 11th Five Year Plan (2006-2010). Under the 13<sup>th</sup> Five-Year Plan (2016-2020), official announcements indicate an investment in fixed assets far above CNY 2.8 trillion and it could reach CNY 3.8 trillion.

[.....]



The CEO of China Railway Corp (CRC) has announced that China plans to invest EUR 110 billion (CNY 800 billion) in the railway sector in 2016. China's National Development and Reform Commission (NDRC) and the Ministry of Transport have started a three-year action plan for the enhancement of infrastructure from 2016-2018. [.....]

[.....]

[.....]

## 5 New development and upgrade projects of infrastructure

[.....]

### 5.3 Urban Rail Projects

City	Project Title	Distance in km	Financial Volume (EUR million)	Construction period
Beijing	Metro Beijing: Line 17	50	1990	2015-2019
Beijing	Metro Beijing: Line 19 phase 1	22	880	2015-2019
[.....]	[.....]	[.....]	[.....]	[.....]
Hefei	Metro Hefei: Line 4 phase 1	36	3300	2016-2020
[.....]	[.....]	[.....]	[.....]	[.....]
[.....]	[.....]	[.....]	[.....]	[.....]

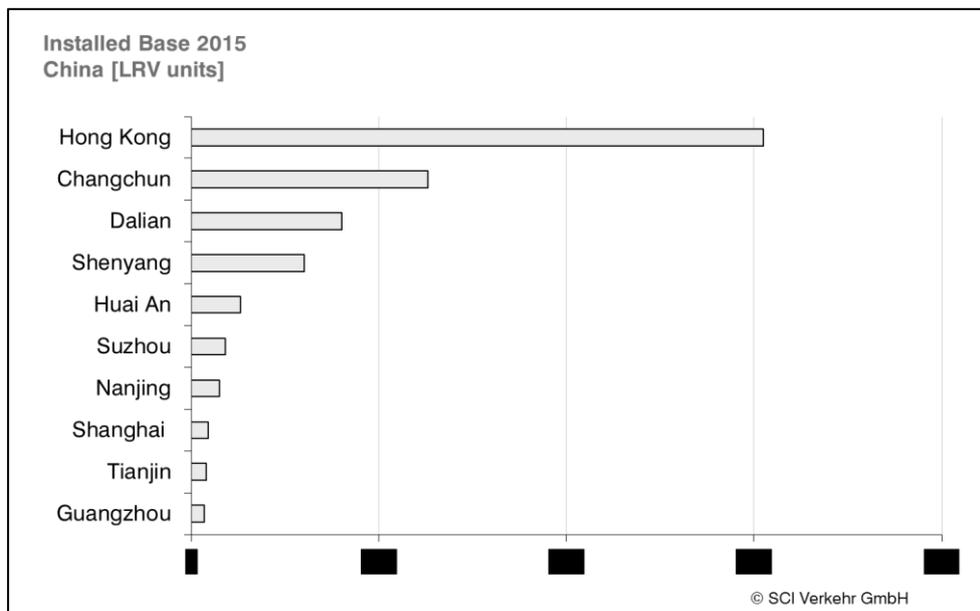
[....]

## 8.8 Light Rail Vehicles

China Light-Rail Vehicle		LRV	Trend
	Stock	Units 2015	↑
		Average development 2015-2020 (p.a.)	
		Average age 2015 (in years)	
	Market for new vehicles	Average volume 2014-2016 (EUR million p.a.)	↑
		Average development 2015-2020 (p.a.)	
		Volatility market volume 2015-2020 (SAW)	
	Market for after-sales	Average volume 2014-2016 (EUR million p.a.)	↑
		Average development 2015-2020 (p.a.)	
		Volatility market volume 2015-2020 (SAW)	
↑ Boom/strong growth   ↗ Small growth   → Stagnation   ↘ Small decrease   ↓ Clear decline			

### Installed Base and Development of Stock

[....]



Historically, a number of Chinese cities (Shanghai, Beijing, Harbin, Anshan) have had tramway systems dating back to the turn of the 20th century. However, most systems were closed down in the second half of the last century.

[...]

There were 654 LRVs in operation in China at the end of 2015, 47% of which could be found/located in Hong Kong.

[...]

The vehicle fleet has an average age of approximately 21 years due to the large share of old vehicles operating in Hong Kong.

[...]

## Suppliers

Besides CRRC, Shenyang Xingguan and Alstom delivered LRVs to Chinese cities during 2011-2015. Shenyang Xingguan is a private company with one contract for LRVs, so far. The company delivered to Changchun. Shenyang Xingguan does not have the technology for 100% low-floor LRVs. Alstom delivered with its Chinese joint venture LRVs for the new Shanghai Songjiang line.

[...]

CRRC's subsidiaries Dalian, Tangshan, Puzhen, Sifang and Zhuzhou are capable of producing 100% low-floor LRVs.

Dalian developed catenary-free LRVs for the city of Zhuhai with AnsaldoBreda's technology. Further co-operations for catenary-free and 100% low-floor technology through licensing and technology transfers are between Bombardier and Puzhen, Skoda with Sifang and Siemens with Zhuzhou.

[...]

## Market Volume and Outlook

Key drivers of new procurements of LRVs are:

Drivers of procurements	Brief description	Relevance	Trend (5 years)
New infrastructure	The main driver of new procurement is construction of new infrastructure. In 2016, the first tram lines in Beijing, Qingdao, Zhuhai, Foshan and Shanghai Songjiang districts will go/went into operation. Further lines are planned in Beijing, Hefei, Mengzhi, Shanghai, Shenzhen, Wuhan, Yiwu, Zhangjiakou and Zhuhai in the medium-term.		
Transport mode	Metro systems are preferred in China due to high transport capacity. Following the construction of major metro routes in cities, light rail lines will be an attractive option to complement these metro systems. For construction of metro systems, the municipality needs approval of National Development and Reform Commissions (NDRC), but for new LRT lines, the municipalities can decide for themselves. NDRC does not approve all applications for new metro lines from municipalities. In these cases, the municipality can decide to construct new LRT lines.		
Investment fund	Stable investment funds in large cities. LRT is favoured in the case of limited budgets for investment, as construction costs are much lower than that of metro systems.		
Relevance for procurements:  = very high,  = high,  = medium,  = low,  = none 5-year trend:  = strongly increasing,  = increasing,  = constant,  = decreasing,  = strongly decreasing			

**The current market volume for new vehicles amounts to EUR xx million per year and will increase significantly with a CAGR of 9% per year. The main driver of new procurement is the construction of new infrastructure.**

The LRV market in China is very volatile due to the small number of light rail systems in the country. The medium- and long-term prospects of the new procurement market are very positive, as many cities are considering LRT as an alternative to metro networks. The After-Sales market is increasing stably due to an increasing LRV installed base.

[...]

### Important Current and Planned Procurement Projects

[...]

In the long-term (2021-2030), SCI Verkehr expects the OEM and After-Sales markets to grow rapidly due to:

- Construction of new light rail lines
- Increasing efforts to maintain the growing installed base
- Replacement procurement of old vehicles

# Bestellformular MC China

Bitte per Fax zurücksenden an: + 49 (221) 931 78-78 oder per E-Mail an: a.arntz@sci.de / a.yasin@sci.de  
SCI Verkehr GmbH – Büro Köln  
z.Hd. Frau Ann Kathrin Arntz / Herr Ahmed Yasin

Hiermit bestelle ich die Marktstudie „The Chinese Railway Market 2016“

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# SCI/Verkehr

## Büro Hamburg

SCI Verkehr GmbH  
Schanzenstraße 117  
20357 Hamburg  
Tel.: 49 (0) 40 5071970  
Fax: 49 (0) 40 50719720

E-Mail: [info@sci.de](mailto:info@sci.de)  
[www.sci.de](http://www.sci.de)

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## Büro Köln

SCI Verkehr GmbH  
Vor den Siebenburgen 2  
50676 Köln  
Tel.: 49 (0) 221 931780  
Fax: 49 (0) 221 9317878

## Büro Berlin

SCI Verkehr GmbH  
Köpenicker Strasse 48/49  
Eingang G  
10179 Berlin  
Tel.: 49 (0) 30 2844540  
Fax: 49 (0) 30 28445420