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PASSENGER RAIL TRANSPORT MARKETS – GLOBAL MARKET TRENDS

**The Global Passenger Rail Transport Markets and Their
Drivers**

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Available in English from February 2020.

Now you can also purchase the **data annex in Excel format** (see overview data sheets on page no. 7 for more information).

After a moderate growth phase over the past five years (2.5% p.a. 2013-18), the global passenger rail transport performance will increase by 3.4% per year between 2018 and 2023. In China, by far the largest single market, the expansion of high-speed networks is a key role in the continuing growth of passenger rail transport. In countries such as Germany, the growth is being stimulated by a greater capacity utilization of the existing infrastructure and the trains themselves. Especially in local transport, this is being achieved by increasing the frequency of trains. Overall, the growing political pressure for environmental friendly solutions is playing right into the hands of the railway companies since higher investments and research budgets are available to the railway sector.

In concrete terms, this MultiClient Study includes:

- Structure and development of the global rail passenger transport markets divided into the following eight world market regions: North America, South and Central America, Western and Eastern Europe, Asia, Australia/ Pacific, Africa/Middle East and the CIS
- Individual analyses of the 23 most important national markets
- Analysis of the main drivers of transport performance and information on latest trends, including historical data since 2005 and forecasts of market development up to 2028

New: Additional Update in November 2020

Due to the current corona crisis, we would like to offer all buyers of the MultiClient study “Passenger Rail Transport Markets – Global Market Trends” a short update in November 2020 with the current transport market figures and developments from the first quarters of 2020.

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Furthermore, SCI Verkehr is renowned all over the world as a specialist for market data concerning the rail industry. For several years we have been offering qualitative and quantitative trend analyses based on existing installed bases for individual segments of the railway industry, which are now available through our Shop. The fundamental idea behind the SCI Shop is to serve a variety of customer groups from industry, the transport and financial sectors as well as associations and consulting companies with valid market information and a clear overview of the development in individual market segments, geared towards their particular objectives and at an affordable price.

Based on more than 2300 research, consultancy and accompanying projects within this sector and our extensive database system, which is independent from our projects, we are in a position to offer our clients an up-to-date overview of trends, evaluations, figures and facts for the worldwide railway market.

SCI Verkehr specialises in global strategic consultancy for railway companies and the railway industry and provides analyses of the worldwide market for railway industries in a wide variety of standardized MultiClient Studies, Market Reports, Factsheets and Data Sheets available through the SCI Shop. Apart from these, many of the in-depth individual analyses have been summarised in the MultiClient study "Worldwide Market for Railway Industries", a study that has been published to coincide with InnoTrans in September 2018.

SCI Verkehr analyses markets from the bottom up: Based upon systematic observation of the railway markets, a detailed worldwide database of the installed base and projects forms the basis for in-depth studies of various segments of the railway industry and the most important regional focus markets. The project database, currently containing 3000 investment projects, is particularly valuable. We regularly carry out analyses of the projects' status and progress, financial budgets and their most important partners. These analyses are incorporated into our forecasts. The present study on "Worldwide Market for Railway Industries" is our flagship product and incorporates many of these detailed analyses. It summarises the most important facts and developments for the coming five years.

We look forward to hearing your feedback!

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DATA ANNEX IN EXCEL FORMAT (ADDITIONAL OFFER)

DATA SHEETS OVERVIEW

1 Market Overview (World)

- 1.1 Socio-economic data
- 1.2 Network length
- 1.3 Modal Split
- 1.4 Socio-economic data (Data)
- 1.5 Network length (Data)
- 1.6 Modal Split (Data)

1.3 Modal split

Mode of transport	Modal share
Argentina	1,00
Passenger rail transport	XXX
Passenger transport air	XXX
Passenger transport bus	XXX
Passenger transport urban rail	XXX
Australia	1,00
Passenger rail transport	XXX

2 Transport Performance

- 2.1 Transport performance
- 2.2 Transport segmentation
- 2.3 Transport distance
- 2.4 Transport performance (Data)
- 2.5 Transport segmentation (Data)
- 2.6 Transport Distance (Data)

2.1 Transport performance

Country	Year		
	2005	2006	2007
Argentina	XXXX	XXXX	XXXX
Australia	XXXX	XXXX	XXXX
Brazil	XXXX	XXXX	XXXX
China	XXXX	XXXX	XXXX
Czech Republic	XXXX	XXXX	XXXX
Egypt	XXXX	XXXX	XXXX
France	XXXX	XXXX	XXXX
Germany	XXXX	XXXX	XXXX
India	XXXX	XXXX	XXXX
Iran	XXXX	XXXX	XXXX
Italy	XXXX	XXXX	XXXX
Japan	XXXX	XXXX	XXXX
Kazakhstan	XXXX	XXXX	XXXX

1 Summary of the global passenger rail transport markets and trends (excerpt)

After slower growth in the previous five years, passenger rail transport performance is expected to increase by XX% p.a. between 2018-23, highlighting the growing importance of the rail sector

Passenger rail transport is a growing market. Looking at long-term growth, the growth rates of passenger rail transport performance have remained stable at around XX% p.a. The growth trend is expected to continue at a more positive rate than in the decade before, with a forecasted average annual growth of XX% p.a. in the years 2018-28, compared to 3.0% p.a. between 2008-18.

Worldwide passenger rail transport performance

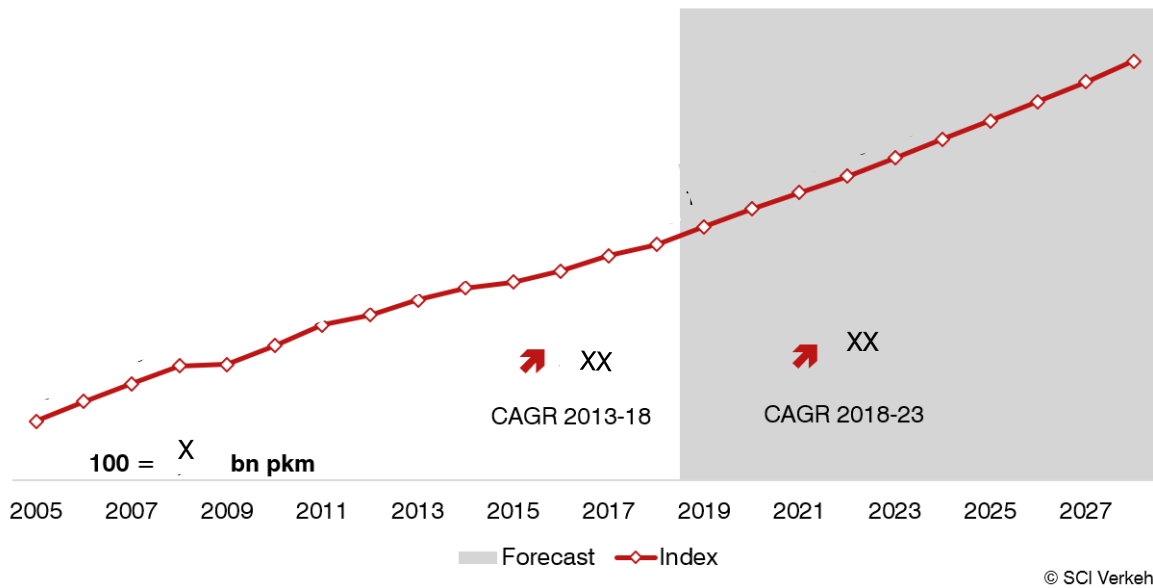


Figure 1: World - Passenger rail performance

Transport performance [bn pkm]					Forecast SCI [CAGR, %]	
2008	2013	2018	2023	2028	2018-23	2023-28
3,028	XX	XX	XX	XX	XX	XX

Figure 2: World - Passenger rail transport basic indicators

[...]

Region	Transport performance [bn pkm]	CAGR 2018-28 [%]
Asia	XXXX	XX
Western Europe	XXXX	XX
CIS	XXXX	XX
Africa/Middle East	XXXX	XX
Eastern Europe	XXXX	XX
South and Central America	XXXX	XX
North America	XXXX	XX
Australia/Pacific	XXXX	XX
Total	XXXX	XX

Figure 3: World - Passenger rail transport performance and CAGR 2018-28 by region

Infrastructure development is one of the key drivers of growth in passenger rail transport performance

The **expansion of high-speed networks** in some of the world's largest markets such as China, Japan, Russia and Germany has and will continue to play a major role in their development. Additionally, the extension and **introduction of new commuter and suburban rail services** in agglomerations in regions such as South and Central America, North America and Australia/ Pacific drive growth in rail patronage and therefore are very important for the positive development of passenger rail transport.

[...]

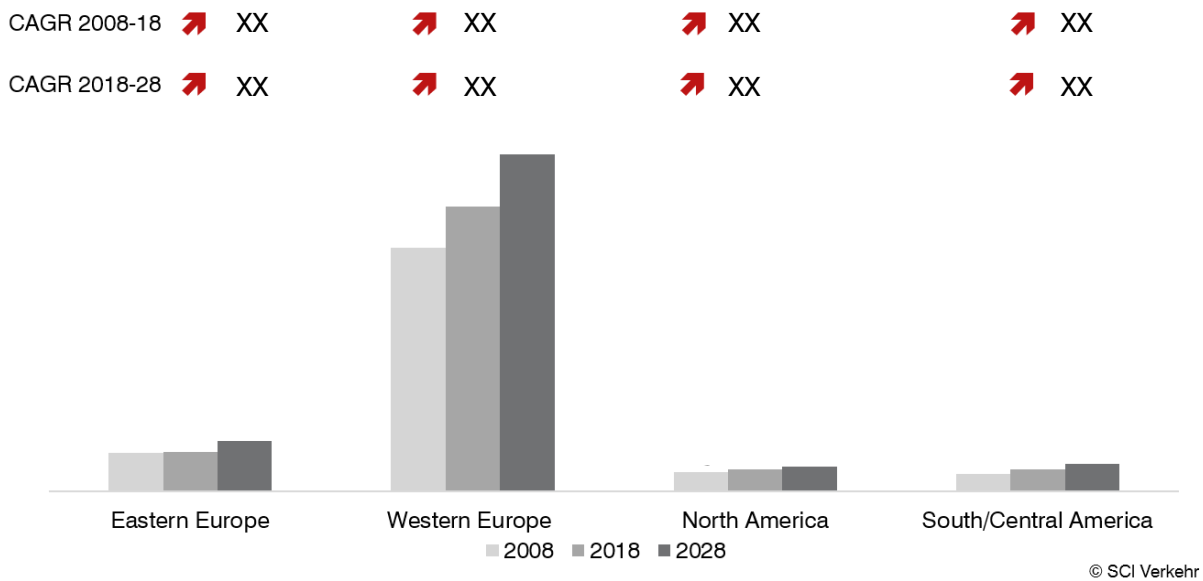
Conditions for the rail sector are improving across the world, as the political push for environmentally-friendly solutions grows

The political push for environmentally-friendly and carbon-neutral solutions is a factor relevant to all markets. An example for how political discussions regarding environmentally-friendly solutions is positively affecting the rail sector worldwide is Europe. **Investments** in new rail projects are expected to grow in Europe in general, in order to reinforce demand and increase transport capacity, but also because the continuously increasing EU-wide political push for the reduction of greenhouse gas emissions and the growing trend towards environmental awareness in society as well as how the rail sector can play an active role in meeting climate goals. [...]

[...]

Passenger rail transport performance and CAGR by region [bn pkm]





[...]

Africa and the Middle East: Passenger rail transport is expected to grow rapidly in emerging regions such as Africa and the Middle East throughout the next ten years

The volatility seen in the Africa and the Middle East region predominantly stems from **political and socio-economic pressures** e.g.: conflicts and trade sanctions (e.g. in Iran), which had and continue to have a negative effect on transport performance in general and also should be considered in terms of the predictive accuracy of the forecast. Additionally, a strong performance reduction was recorded in Egypt in the previous ten years (2008-18), which is the largest passenger rail market in the region and thus significantly affects the region on the whole. Furthermore, **unfair market conditions** exist in for example in Africa, as the road sector has been continuously subsidised e.g. maintenance over the past years, while the rail sector has not.

While the above are a number of factors that negatively affect transport performance in the Africa/Middle East region, perhaps the strongest positive driver of transport performance in this region is that **high population growth** is forecasted e.g. XX% p.a. in Egypt between 2018-23. In terms of the next decade (2018-28), passenger rail transport performance is expected to grow by XX%. The increase in population will heighten the need for mobility going forwards, especially the means of mass transportation in agglomerations.

[...]

10 Australia and Pacific

10.1.1 Summary



Figure 5: Australia and Pacific - Map

Socio-economic data	
Population (mn)	31
CAGR Population 2018-23 (%)	XX
Degree of urbanisation (%)	85
GDP per capita (PPP, USD)	34,248
GDP (current prices, USD bn)	1,627
CAGR GDP (real) 2018-23 (%)	XX
Rail infrastructure	
Mainline railway network (km)	XXXX

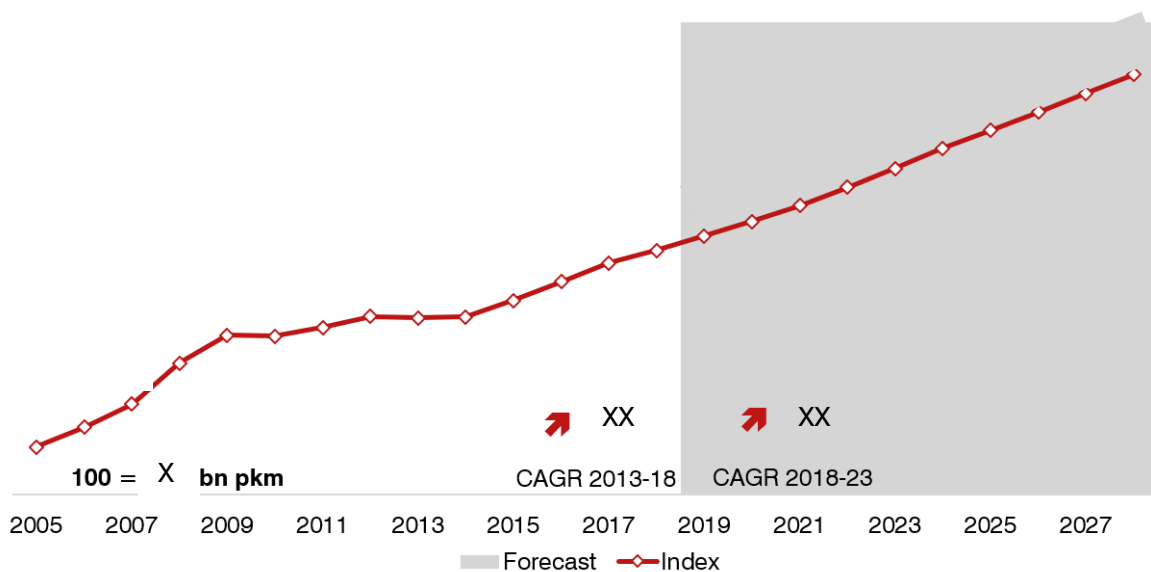
Figure 6: Australia and Pacific - Socio-economic data and rail infrastructure

Rail transport	Transport performance (billion)	Forecast SCI CAGR 2018-23 (%)	Rail modal share (%)
Passenger rail transport (pkm)	XX	XX	XX

Figure 7: Australia and Pacific - Passenger rail transport basic indicators

10.1.2 Development of transport performance

Passenger rail performance in Australia and Pacific



Source: Please see market chapter for sources; Forecast: SCI Verkehr

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Figure 8: Australia and Pacific - Passenger rail performance

Transport performance (bn pkm)				CAGR (%)	
2008	2013	2018	2023	2018-23	2023-28
XX	XX	XX	XX	XX	XX

Figure 9: Australia and Pacific - Transport performance

The Australia and Pacific region is the smallest passenger rail transport region in the world, accounting for less than 0.5% of the global passenger rail transport performance.

In the Australia and Pacific region passenger rail performance almost solely depends on Australia, as **the contribution of New Zealand is very small (<XX%) and can be neglected.** Rail passenger transport performance in Australia and Pacific has **increased steadily since 2009**, with strong growth from 2015 onwards. In 2018, XX billion pkm were performed.

An **annual growth of XX% and XX% is forecasted** for the period 2018-2023 and 2023-2028, with the main contribution stemming from Australian commuter rail services.

10.1.3 Main drivers

Commuter rail development has an enormous influence on the passenger rail segment in the Australia and Pacific region. Many **networks** are currently being **extended and fleets are being enlarged.**

Population growth of 1.5% p.a. (2018-23) will support this trend, especially since most of the growth will benefit larger **urban agglomerations.**

- In Australia, almost all major agglomerations such as Sydney, Melbourne and Brisbane are **investing in their suburban rail network and its fleet.**
- The Australian government started a study **assessing the implementation of a high-speed rail network** across the state of New South Wales.

10.1.4 Competitive dynamics

Looking at Australia, the majority of passenger rail operators were in state ownership until the rail reform and privatisation of the rail sector around 1996. Most of the operators are now organised on the state-level. In the state of New South Wales for example, the operator NSW Trains, which is a government transport agency, covers services to the Central Coast, Blue Mountains and Illawarra. Sydney Trains, which is owned by Transport for NSW, a government agency, provides services for the suburban passenger rail network for Sydney. The level of competition is not very high, as only a few private train operating companies exist which mainly focus on tourist/luxury services e.g.: Journey Beyond Rail Expeditions.

10.2 Australia

10.2.1 Summary

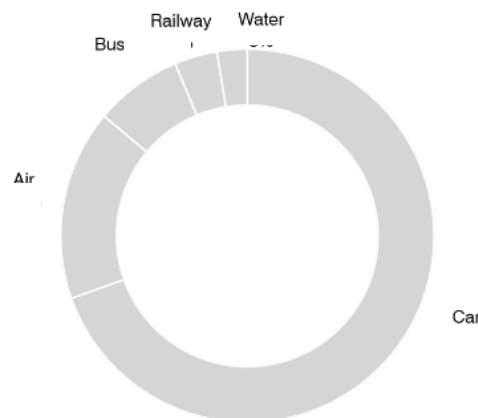


Figure 10: Australia and Pacific - Australia - Map

Socio-economic data	
Population (mn)	25
CAGR Population 2018-23 (%)	1.6
Degree of urbanisation (%)	86
GDP per capita (PPP, USD)	52,373
GDP (current prices, USD bn)	1,418
CAGR GDP (real) 2018-23 (%)	XX
Rail infrastructure	
Mainline railway network (km)	XXX

Figure 11: Australia and Pacific - Australia - Socio-economic data and rail infrastructure

Passenger transport modal split in Australia 2016 [%]



Source: Department of Infrastructure and Regional Development

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Figure 12: Australia and Pacific - Australia - Modal split of passenger transport

Rail transport	Transport performance (billion)	Forecast SCI CAGR 2018-23 (%)	Rail modal share (%)	Average transport distances (km)
Passenger rail transport (pkm)	XX	XX	XX	XX

Figure 13: Australia and Pacific - Australia - Passenger rail transport basic indicators

10.2.2 Development of transport performance

[...]

Transport performance (bn pkm)				CAGR (%)	
2008	2013	2018	2023	2018-23	2023-28
XX	XX	XX	XX	XX	XX

Figure 14: Australia and Pacific - Australia - Transport performance

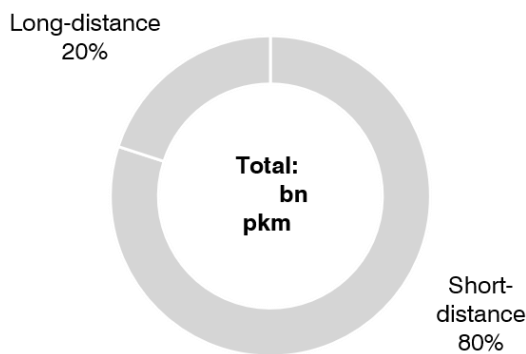
Australia is by far the largest passenger rail transport market in the Australia and Pacific region, accounting for 98% of the region's total transport performance.

Passenger rail performance in Australia has been growing in the past years, following a stable development between 2010 and 2014, leading to an **average growth rate of just below 2% p.a. in the last decade** (2008-18).

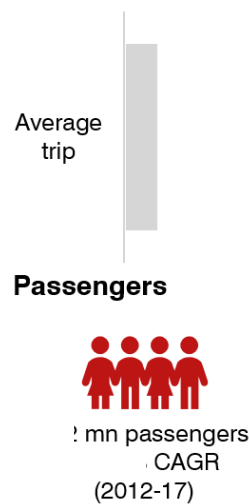
Commuter rail services have the largest impact on passenger rail development in Australia. Mainline services are very limited and are mostly concentrated on the East Coast, but with very low frequencies and only a few daily departures. An increase in ridership has been observed in the period from 2012-17. However, it should be noted that this increase mainly originates from the **growth in population** rather than from a modal shift from the car as a transport mode.

In the coming years, **growth is forecasted** for the Australian passenger transport market. The **forecasted annual growth rate is XX% p.a. for the period 2018-23**, leading to an **absolute performance of XX billion pkm by 2023**.

Passenger rail transport by segment in Australia [%]



Average trip [km]



Note: 2017 data
Source: Australian Bureau of Statistics, Forecast: SCI Verkehr

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Figure 15: Australia and Pacific - Australia - Passenger rail transport by segment

10.2.3 Main drivers

The government for the Australian state of New South Wales (NSW) started a study **assessing the implementation of a high-speed rail network** across the state in December 2018, which would be a driver for growth in transport performance going forwards. Four potential routings have already been identified and an expert has been appointed to assess appropriate routings, train speeds and station locations. The four identified routes are all planned to be routed within 300 km from Sydney. High-speed rail operations can reduce journey times on these corridors by up to 75%.

A key driver for forecasted growth is **infrastructure improvements** of commuter rail in the urban agglomerations of Sydney, Melbourne, Brisbane, Perth and Adelaide.

- In October 2019, works began for the EUR 380 million (AUD 615 million) electrification project of the 78 km Gawler commuter rail line in South Australia. The funding for the electrification works is split evenly between the Australian federal government and the state government of South Australia, at EUR 136 million each. The government of South Australia is providing an additional EUR 108 million for the purchase of three-car electric multiple units (EMU) from rolling stock

manufacturer Bombardier. In 2018, the South Australian government signed a contract with Lendlease for the electrification of the first stage of the line from Adelaide to Salisbury. The contract was later extended to include the electrification of the line to Gawler. The upgrade of the signalling system for Automatic Train Protection is part of the construction work.

- In April 2019, the Australian government published its budget for the years 2019/2020, through which several railway projects are to receive funds. A sum of EUR 1.27 billion (AUD 2 billion) is to be spent on the modernisation of the Melbourne - Geelong line, through which maximum speeds are to be increased to 160 km/h, reducing journey times on the line significantly as a result. Another EUR 443 million will be invested in the double-track expansion of the Geelong - Waurn Ponds section. Moreover, the government will provide EUR 9.2 million in initial funding for the founding of the National Fast Rail Agency, a high-speed rail authority overseeing feasibility studies for potential HSR corridors such as Sydney - Wollongong and Brisbane - Gold Coast. Other investments include EUR 2.22 billion for a new railway connection to the planned Western Sydney airport.
- The government of the Australian state of Victoria announced in April 2018 that it will provide EUR 357 million (AUD 572 million) to carry out upgrade works on the railway corridor between Cranbourne and Pakenham. The investment, which was included in the 2018/19 budget for the state of Victoria, was earmarked to carry out power upgrade works and install modern signalling systems from Melbourne to Cranbourne and Pakenham, as well as to facilitate the double-tracking works.

The other main driver of the forecasted growth is the **renewal of the rolling stock fleet**, particularly for commuter rail in the agglomerations mentioned above.

- In December 2019, French rolling stock manufacturer Alstom signed a contract with the Public Transport Authority of Western Australia to manufacture and maintain the next generation of C-series trains for Perth's rail network. Under the contract worth approximately EUR 800 million (AUD 1.3 billion), Alstom will be responsible for the design, supply, manufacturing, testing and putting into service of 41 six-car electric multiple units (EMU) and two three-car diesel multiple units (DMU), which includes 50% local content, 20 years maintenance of the EMUs and maintenance support services for the DMUs. The vehicles will be manufactured in PTA's Bellevue assembly facility and delivered over a seven-year period starting in 2022. The contract includes options for an additional 30 EMUs and a further two options of five plus five years of maintenance.
- The RailConnect joint venture (JV), consisting of Hyundai Rotem, Mitsubishi Electric Australia and UGL Rail, completed the first 20 double-deck electric multiple units (EMU) for intercity services of the Australian transport authority Transport for New South Wales (TfNSW) in December 2019. The EMUs are the result of a contract signed in 2016 for 512 EMUs worth EUR 1.4 billion (AUD 2.3 billion). In March 2019, TfNSW exercised an option for the delivery of a further 42 EMUs from the RailConnect JV. The ten-car EMUs were manufactured at Hyundai Rotem's plant in Changwon, Korea, and have a top speed of 160 km/h.
- The government for the Australian state of NSW awarded a contract to the Momentum Trains consortium for the delivery of new electric multiple units (EMU) through the Regional Rail Fleet project in February 2019. The consortium comprises CAF, UGL Rail Services, Pacific Partnerships, CAF Investment Projects and DIF Infrastructure V Coöperatief. The contract includes project financing, designing, building and maintaining the new regional rail fleet as well as designing, building, maintaining and operating the new purpose-built fleet maintenance facility in Dubbo. NSW TrainLink will continue to operate regional rail services. Momentum Trains will start work on detailed designs for the Dubbo maintenance facility and the new fleet in 2019. The first new EMUs are expected to be running by 2023, with the full fleet coming into service progressively.

[...]



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