

NEW URBAN RAIL INFRASTRUCTURE

2018

INTRODUCTION

2018 is once again a successful year for urban rail infrastructure, despite a 6% slowdown of the growth pace. However, 121 individual urban rail projects were completed on all continents totalling 1270km, compared to 1348km in the previous record year of 2017.

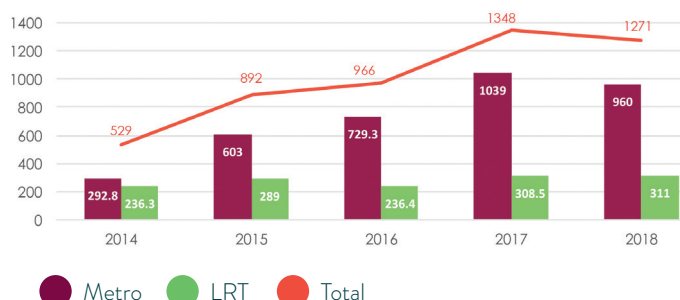


For this new urban rail infrastructure 2018 Statistics Brief, the figures were gathered from UITP's rail project database and show that the year was marked by several developments:

- A slowdown of the pace of opening (-6%) compared to a strong annual average 36% growth over the past four years. This slowdown is driven by the metro segment.
- A consolidation of the domination of Asia on both the metro and the LRT markets, specifically with China twice leading the statistics.
- The opening of the first metro system in Sub-Saharan Africa with the two line system of Abuja.
- A stable portion (11%) of new metros being at least designed, and operated for Full Automated Operation (FAO/GOA4), including once again in China.
- A confirmation of the major trend in the regional distribution of LRT projects initiated in 2017, with Europe being, for the second time, outpaced by Asia-Pacific.

2018 DEVELOPMENTS

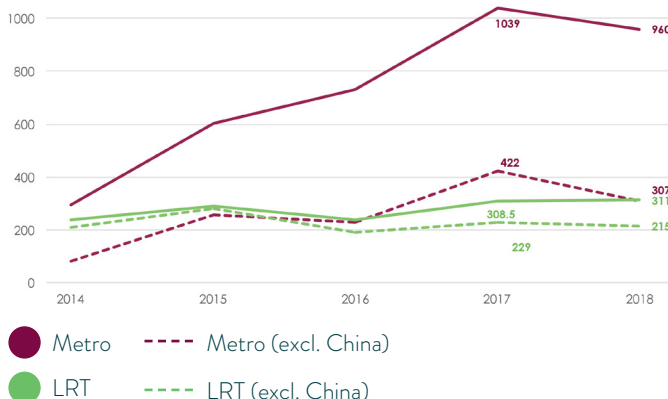
Urban rail development (km)



As China continues to dominate the greenfield urban rail market, and to at least reduce the perception of efforts realised in other countries, the chart below provides insight to the proportion of development inside and outside China.

The overwhelming domination of China, especially for the metro market segment is unmistakable from the chart below, highlighting that more than two thirds of all new metro infrastructure launched for revenue service in 2018 are in 17 cities in China.

Urban rail development (km)



The following pages analyse each market segment, metro and light rail, in more details.

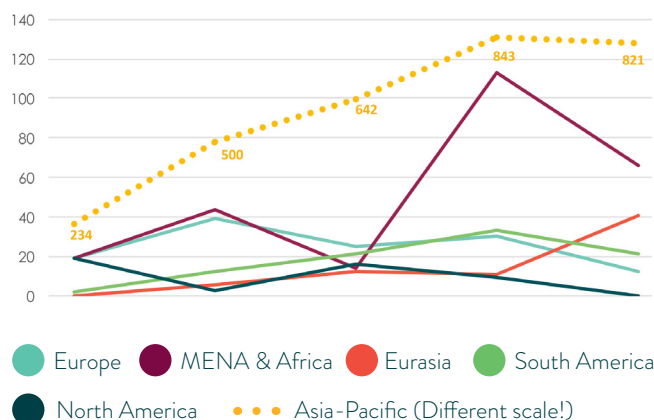
METRO MARKET

In 2018, 75 individual metro infrastructure projects were completed in 17 countries and 39 cities for a total of 960km, with 62% of new lines and 38% of line extensions. Three cities opened their first metro line in 2018: Urumqi in China, Palembang, Indonesia and Abuja, Nigeria, bringing the total of metro cities to 181.

2018 saw metro services available, for the first time, in Nigeria and Indonesia, two countries where the fast growing demographics naturally call for metros.

The pace of opening has been markedly decreasing (-7.5%) compared to 2017 with 72km less globally. This downward trend in 2018 is noticeable in all regions, with the exception of Eurasia. FIFA2018 in Russia was evidently a catalyst for metro construction in a country that had displayed more modest progress in the past years (with an average of 7.5km/year in the period 2014-17).

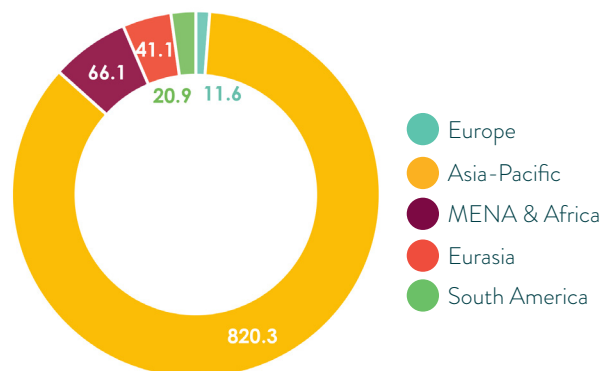
Evolution of metro development by regions (km)



Metro developments have continued to be the most robust in Asia-Pacific, heavily dominated by China. The MENA-Africa region comes second, with the remarkable inauguration of the first ever Sub-Saharan metro in Abuja (two lines; 45km), but also in Turkey, Algeria and Iran. This ranking pattern has been stable for the past four years.

The geographical distribution for metro development is 820.3km in Asia-Pacific (530km of which are new lines); 66.1km in MENA-Africa (45 km of which are new lines); 41.1 in Eurasia (10.5km are a new line in Moscow); 20.9 in South America (exclusively extensions); 11.6km in Europe (9.7 of a new line in Amsterdam).

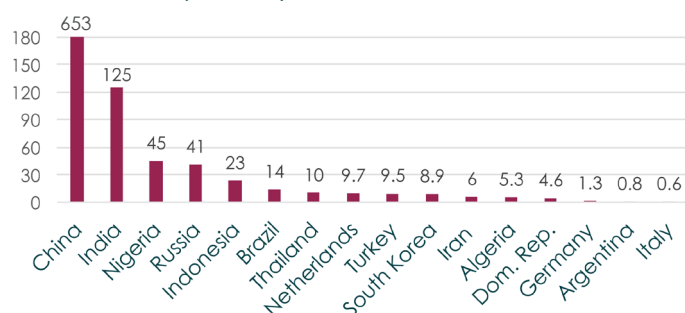
Metro developments 2018 (km)



Three new metro lines have been designed to run with fully automated operation (FAO/GOA4) in two cities (Shanghai and New Delhi) covering 92.7km. With extensions to existing lines, the total of new GOA4 assets for 2018 is 106 km: 11% of the total metro infrastructure installed in 2018. If we exclude China, which has only recently started with FAO metro and is disproportionately affecting the figures, GOA4 lines represent 34% of new lines.

The distribution by countries/territories in 2018 was the following:

Metro development by countries (km)



The most remarkable cities (with over 50km of new metros) are:

- Qingdao (124km) with two new lines and two extensions,
- New Delhi (100km) with two new lines and six extensions,
- Guangzhou (84.7km, after 83 km in 2017), with two new lines and two extensions,
- Wuhan (67.5km) with two new lines and one extension,
- Tianjin (51.7km) with one new line and two extensions
- Chongqing (51.3km) with two new lines and one extension.

Abuja and the first African Metro to this list of remarkable achievements, just missed the 50km threshold. The opening of the first Sub-Saharan African metro should be recognised as a historical moment in metro infrastructure.

It should also be noted that a number of projects labelled “metro” in China are increasingly similar to what would be considered “commuter railways” in other countries: long lines with high average distance between stations and serving the more remote areas outside of the megacities. These lines are designed and built according to metro

standards and are run by the metro operators. However, further consideration should be given to the qualification of these lines:

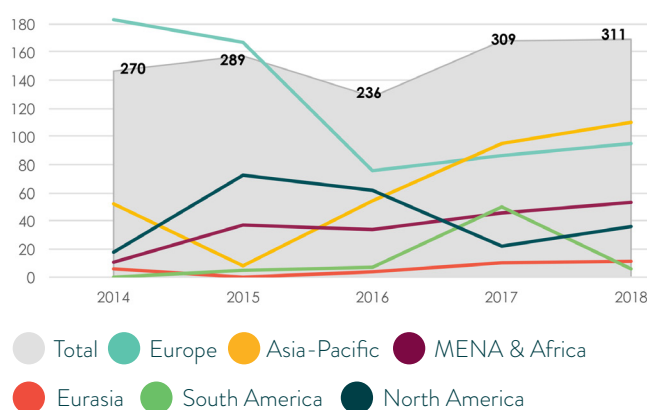
- Qingdao line 11: 54.4km and 22 stations
- Qingdao line 13: 70km and 23 stations
- Guangzhou line 14: 54.4km and 14 stations
- Nanjing line 7: 30.2km and 9 stations

LIGHT RAIL MARKET

For the second time, light rail developments have been more robust in Asia-Pacific than in any other continent with Europe being outpaced by Asia-Pacific. North America, traditionally ranking second in LRT development, was again behind MENA in terms of new projects opened in 2018. The two traditional LRT stronghold markets (Europe and North America) continue to experience slower growth, as shown in the chart below. However, this does not reflect a loss of interest or relevance, but rather reflects the strong brownfield reinvestment needs in these systems developed in previous decades (fleet refurbishment or replacement also track replacement for example).

The pace of opening has continued on the 2017 slow upwards trend following decline in 2015-16, thanks to growth in all regions except South America. “Non-traditional” LRT regions like Asia-Pacific and MENA are expected to continue to support LRT growth in the years to come.

Evolution of LRT development by regions (km)

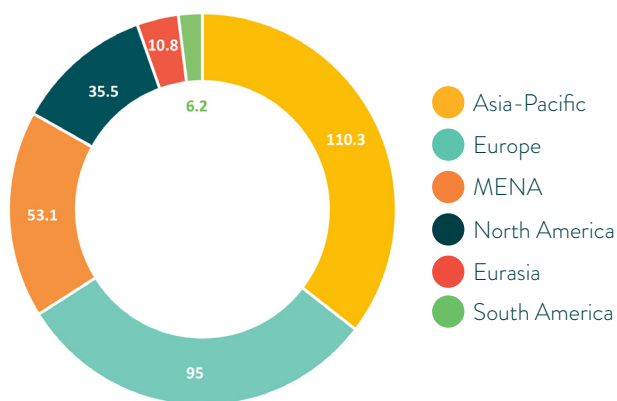


In 2018, 46 single LRT infrastructure projects were completed in 20 countries and 40 cities for a total of 309.4km, with 66% of new lines and 22% of line extensions. The remaining 38km consist of conversion projects

of under-used secondary railway lines to LRT operation in Sheffield and Aarhus. Seven cities opened their first modern LRT line in 2018: Beijing, Chengdu, El Paso, Oklahoma City, Ouargla, Sétif and Taipei, bringing the total of LRT cities to 411.

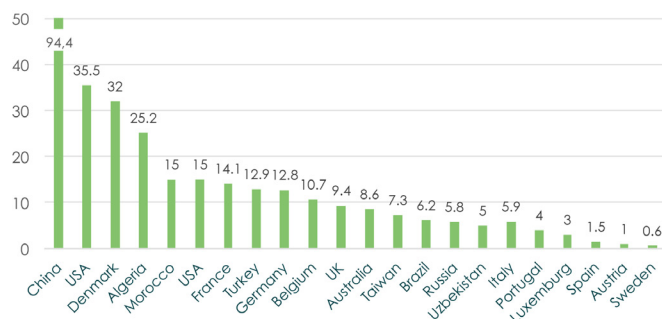
The geographical distribution is the following: 110.3km in Asia-Pacific (98.4km of which are new lines); 93.5km in Europe (68km of which are new lines); 53.1km in MENA (exclusively new lines); 10.8km in Eurasia, 6.2km in South America and 35.5km in North America (20km of which are new lines).

LRT developments 2018 (km)



The distribution by countries/territories in 2018 was the following:

LRT development by countries (km)



The most remarkable cities are:

- Wuhan in China, with two new lines totalling 32.1km (following 51.8km in 2017);
- Aarhus with 32km (29 of tram-train conversion);
- Suzhou with 26.1km;
- Sétif in Algeria with 15.5km;
- Casablanca with 15km.

DEFINITION AND METHODOLOGY

The data for this document was extracted from a rail project database compiled by UITP using all available rail project information from official or company data and other authoritative paper and digital sources (press release etc.).

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This Statistics Brief was prepared by UITP Rail Unit based in Brussels.

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