

Rail infrastructure and assets

April 2023 to March 2024

10 October 2024

Background:

This annual statistical release contains information on the infrastructure and assets of the mainline rail network in Great Britain.

It covers: **traction type** and **average age of rolling stock** by train operator, **track and route length** (including **electrified length**); and the number of **mainline stations**.

Sources: Network Rail, Amey Infrastructure Wales Limited, Transport for London and Rail Safety and Standards Board.

Latest year: 1 April 2023 to 31 March 2024

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Next publication:

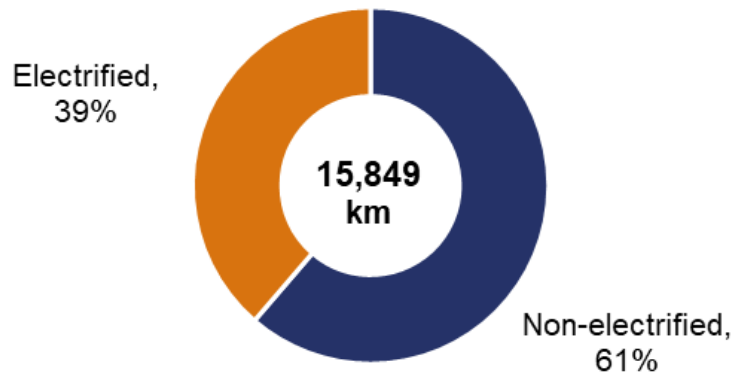
October 2025

As of 31 March 2024, there were **15,107 railway vehicles** registered in operation for all passenger train operators. Of these, **71% were electric**, **19% were diesel**, **7% were bi-mode** and **3% were locomotive hauled**.

The **average age of rolling stock** for all passenger train operators as of 31 March 2024 was **16.6 years**. Merseyrail had the largest annual decrease in average age, falling by 7.9 years to 13.8 years. This was due to the introduction of new Class 777 trains and the removal of older vehicles.

Figure 1 More than a third of the total route length in Great Britain is electrified

Total route length and proportion of route length electrified, Great Britain, as of 31 March 2024



In the latest year (April 2023 to March 2024), **141.4 kilometres of electrified track were added** to the network. This was due to the continued electrification of the Core Valley Lines, the TransPennine route upgrade, and the Glasgow-Barrhead project line.

In the latest year, **seven new stations opened**. The total number of mainline stations in Great Britain as of 31 March 2024 was 2,585.

All data tables, a quality and methodology report and an interactive dashboard associated with this release are published on the [Rail infrastructure and assets page](#) of the data portal. Key definitions are in annex 1 of this release.

1. Rolling stock by traction type

As of 31 March 2024, there were 15,107 railway vehicles registered in operation for all passenger train operators. This was comprised of:

- 10,699 electric vehicles (71%)
- 2,887 diesel vehicles (19%)
- 1,100 bi-mode vehicles (7%)
- 421 locomotive hauled vehicles (3%)

Bi-mode vehicles can be powered either by electric power from overhead lines or third rail, or by using diesel engines. This means the trains can run on both electrified and non-electrified track.

Figure 1.1 The majority of rolling stock was electric

Proportion of passenger operators' rolling stock by traction type, Great Britain, as of 31 March 2024 (Table 6314)

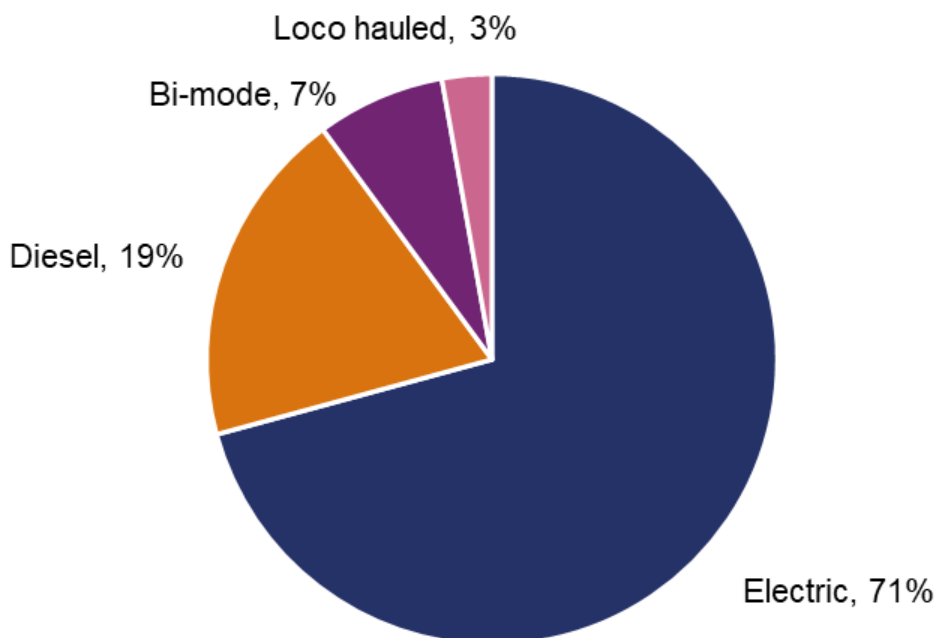


Table 1.1 Seven of the 24 operators had a fully electric fleet

Total vehicles by operator and proportion by each traction type, Great Britain, as of 31 March 2024 (Table 6314)

Operator	Total vehicles	Electric	Diesel	Bi-mode	Loco hauled
c2c	356	100%			
Elizabeth line	630	100%			
London Overground	507	100%			
Merseyrail	280	100%			
Southeastern	1,694	100%			
Heathrow Express	48	100%			
Lumo	25	100%			
Govia Thameslink Railway	2,466	98%	2%		
South Western Railway	1,446	93%	7%		
Avanti West Coast	664	86%	14%		
Greater Anglia	985	82%		18%	
West Midlands Trains	683	75%	25%		
ScotRail	1,039	62%	26%		11%
London North Eastern Railway	572	58%		29%	13%
Northern Trains	910	29%	67%	4%	
East Midlands Railway	381	22%	78%		
TransPennine Express	308	19%	50%	31%	
Great Western Railway	1,047	11%	23%	58%	8%
Chiltern Railways	205		84%		16%
TfW Rail	369		89%		11%
CrossCountry	332		100%		
Grand Central	60		100%		
Hull Trains	25			100%	
Caledonian Sleeper	75				100%

Note: Blank cells mean there were no vehicles for that traction type.

In the latest year, there were seven operators with a completely electric fleet. CrossCountry and Grand Central's fleet were all diesel vehicles. Hull Trains' fleet consisted entirely of bi-mode vehicles (run in either electric or diesel mode). Caledonian Sleeper's fleet were all locomotive hauled (vehicles do not run under their own power).

The remaining 13 operators' fleets were comprised of varying proportions of electric, diesel, bi-mode and locomotive hauled vehicles.

2. Average age of rolling stock

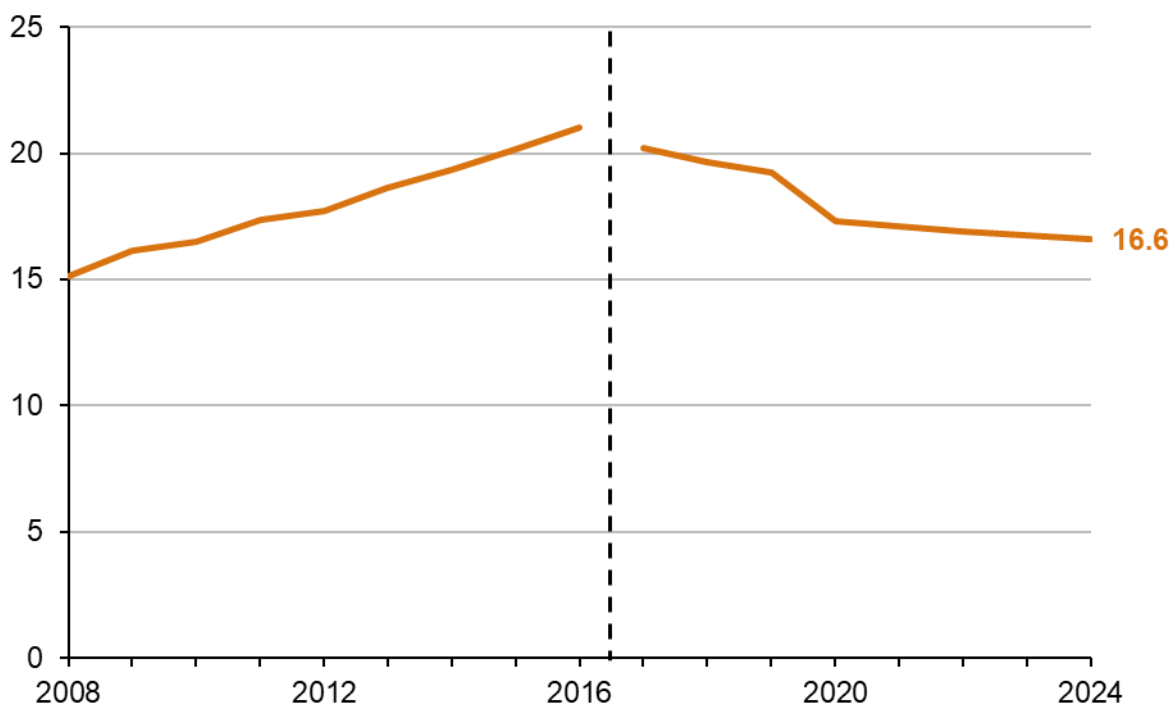


As of 31 March 2024, there were 15,107 railway vehicles registered in operation for all passenger train operators. The average age of all rolling stock in Great Britain decreased by 0.1 years compared with a year earlier. For franchised operators, the age decreased by 0.1 years and for non-franchised operators the age increased by 1.7 years. The non-franchised operators' rolling stock makes up around 1% of all passenger vehicles.

The average age of rolling stock shown is the age at the end of the financial year. A vehicle drops out of the dataset if it is no longer leased by an operator. As all existing rolling stock will age by one year between one year and the next, any change in average age of less than 1.0 year indicates either the introduction of newer rolling stock or the removal of older stock from the fleet.

Figure 2.1 The average age of franchised operators has continued to decrease

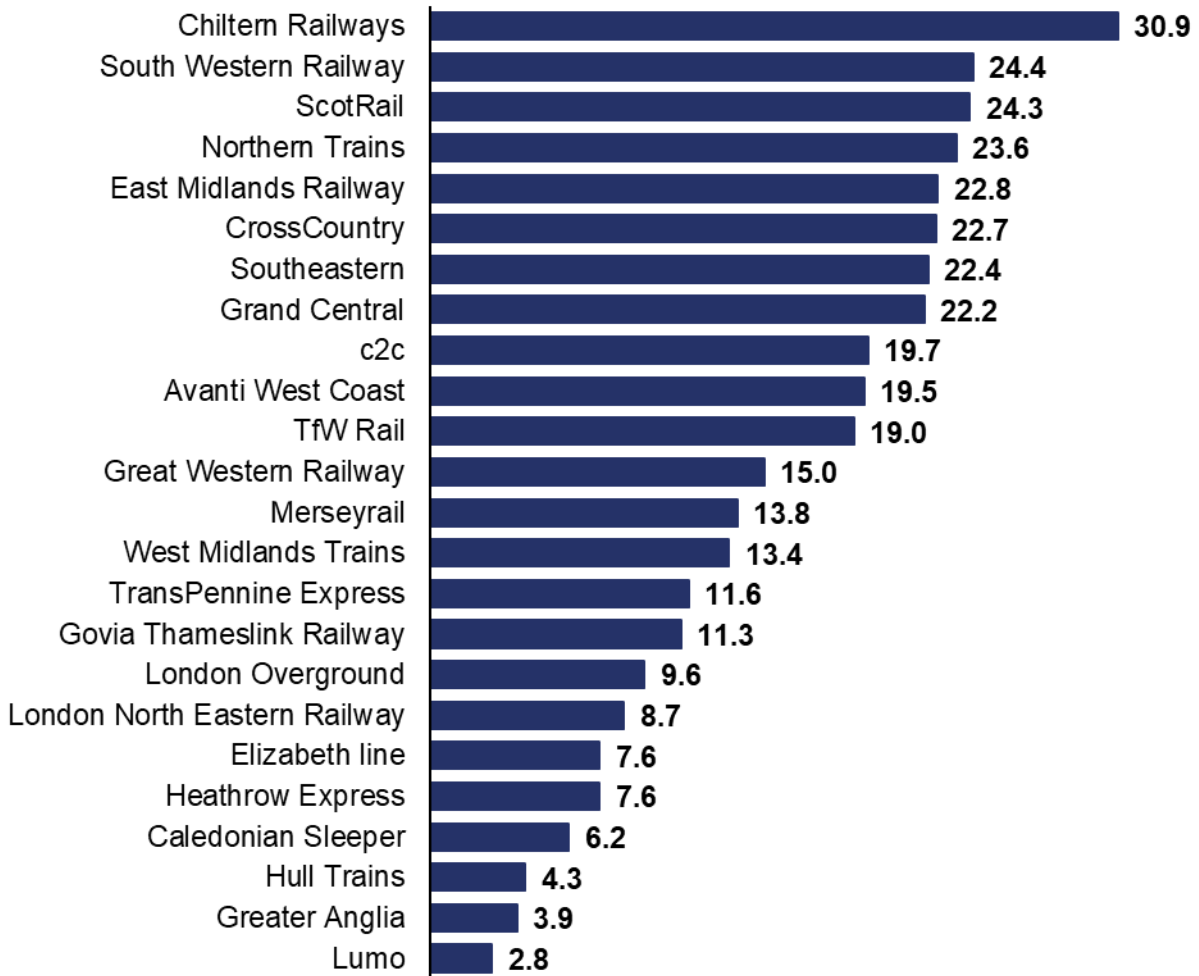
Average age of rolling stock in years (franchised operators), Great Britain, as of 31 March, 2008 to 2024 (Table 6313)



Average age of rolling stock by operator

Figure 2.2 The average age of rolling stock varied by operator

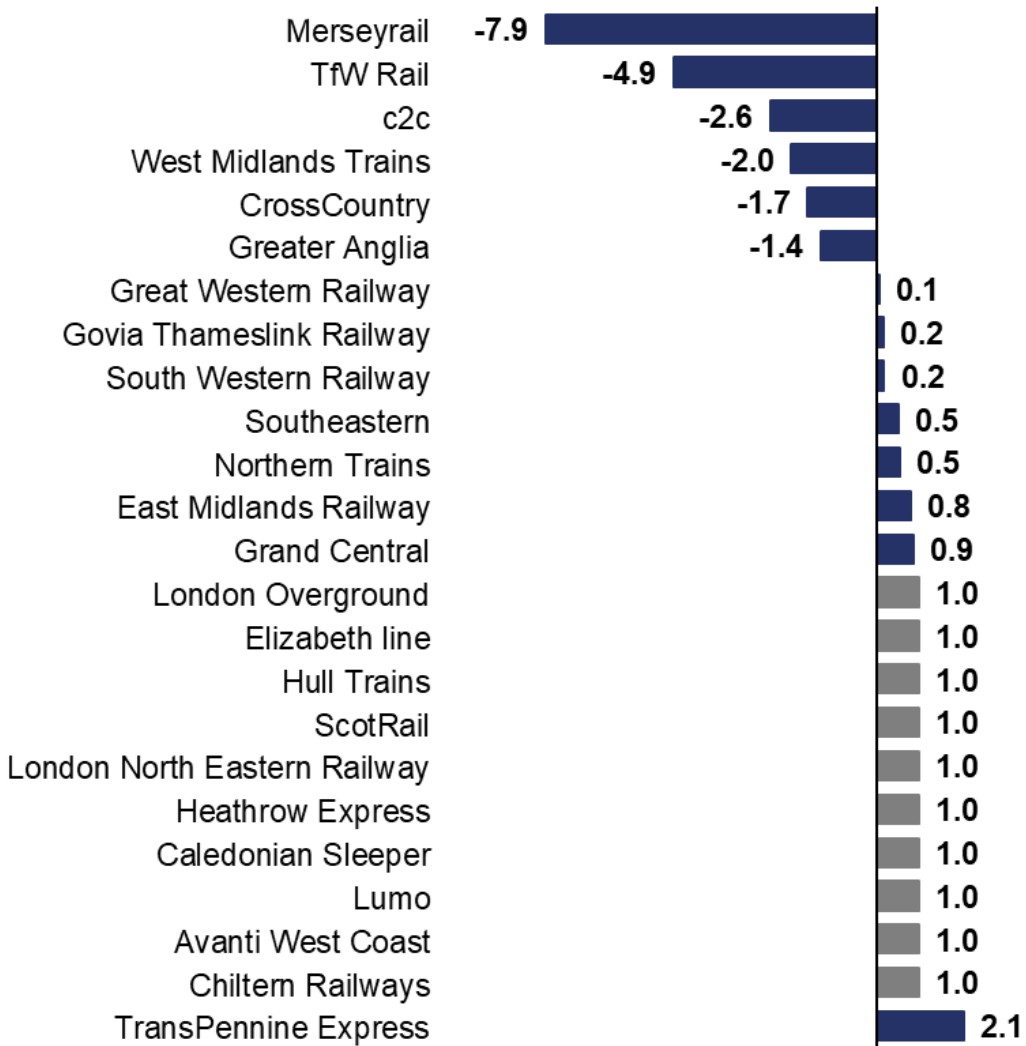
Average age of rolling stock in years by operator, Great Britain, as of 31 March 2024 (Table 6313)



As of 31 March 2024, Lumo had the lowest average age at 2.8 years, while Chiltern Railways had the oldest fleet with an average age of 30.9 years.

Figure 2.3 Merseyrail had the largest annual decrease in average age

Age change in years of rolling stock between 31 March 2023 and 31 March 2024 by operator, Great Britain (Table 6313)



For ten operators, their rolling stock was unchanged (no additions or removals) in the latest year. Therefore, their average age increased by exactly one year (shown as grey bars on the chart above). For one operator, the average age of rolling stock increased by more than one year. For 13 operators, the average age of the rolling stock either decreased, or increased by less than a year. This was due to new rolling stock being introduced, older rolling stock being phased out, or a combination of both factors.

Average age of rolling stock: further detail on changes by operator

Table 2.1 Average age of rolling stock by passenger train operator as of 31 March 2024, annual age change and reason (Table 6313)

Operator	Average age of rolling stock (years)	Age change compared with 31 March 2023 (years)	Reason for change
Avanti West Coast	19.5	+1.0	No change
c2c	19.7	-2.6	Introduction of newer Class 720 vehicles
Caledonian Sleeper	6.2	+1.0	No change
Chiltern Railways	30.9	+1.0	No change
CrossCountry	22.7	-1.7	Removal of older Mark 3s
East Midlands Railway	22.8	+0.8	Introduction of Class 170 vehicles and removal of older Class 156 vehicles
Elizabeth line	7.6	+1.0	No change
Govia Thameslink Railway	11.3	+0.2	Removal of older Class 313 vehicles and introduction of newer 387 vehicles
Grand Central	22.2	+0.9	Introduction of Class 221 vehicles
Great Western Railway	15.0	+0.1	Removal of Mark 3s and 387s
Greater Anglia	3.9	-1.4	Removal of older Class 321 vehicles and introduction of new Class 720s
Heathrow Express	7.6	+1.0	No change
Hull Trains	4.3	+1.0	No change
London North Eastern Railway	8.7	+1.0	No change

Operator	Average age of rolling stock (years)	Age change compared with 31 March 2023 (years)	Reason for change
London Overground	9.6	+1.0	No change
Lumo	2.8	+1.0	No change
Merseyrail	13.8	-7.9	Introduction of newer Class 777 vehicles and removal of older Class 507s and 508s
Northern Trains	23.6	+0.5	Removal of older Class 319 vehicles
ScotRail	24.3	+1.0	No change
South Western Railway	24.4	+0.2	Introduction of newer Class 701s and removal of Class 707s and older 458s
Southeastern	22.4	+0.5	Introduction of newer Class 707 vehicles
TfW Rail	19.0	-4.9	Introduction of newer Class 197 and removal of older vehicles
TransPennine Express	11.6	+2.1	Removal of newer Mark 5s
West Midlands Trains	13.4	-2.0	Introduction of newer Class 730s and removal of older vehicles

Rolling stock additional information

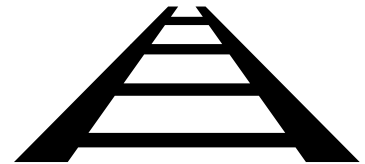
While new rolling stock may be more efficient and technologically advanced, existing vehicles can be refurbished during their lifetime to add better facilities (e.g. WiFi capability or increased seating capacity). Both newly-built and refurbished rolling stock can offer a more comfortable service for passengers. Therefore, the age of rolling stock does not necessarily affect passenger satisfaction. The introduction of refurbished rolling stock is not reflected in these statistics.

3. Infrastructure on the railway

Rail network length¹

Route length open for traffic in Great Britain as of 31 March 2024:

15,849 kilometres



Track length in Great Britain as of 31 March 2024:

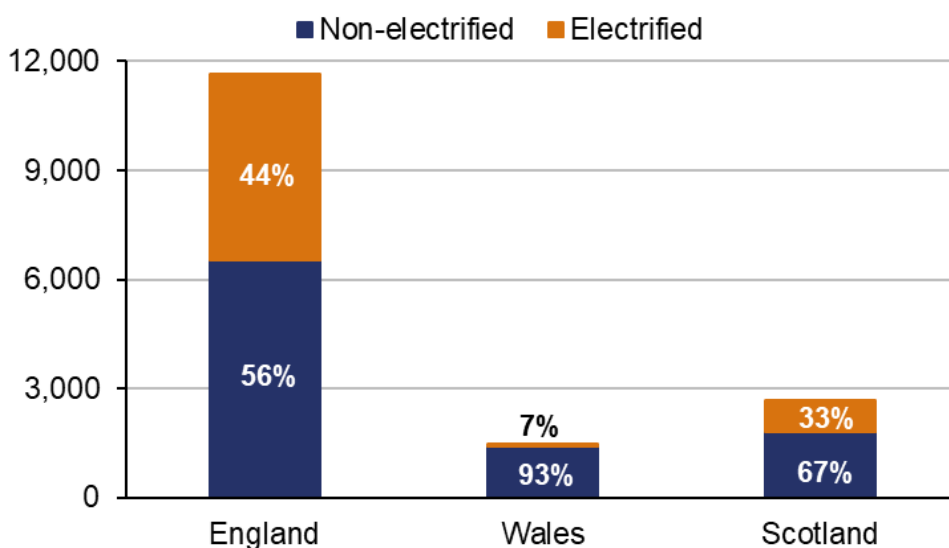
31,258 kilometres

As of 31 March 2024, total route length open for traffic in Great Britain was 15,849 kilometres. Of this, total route length in England was 11,656 kilometres, 1,498 kilometres in Wales and 2,695 kilometres in Scotland.

In Great Britain as of 31 March 2024, 6,130 kilometres of route was electrified. This represents 39% of the total route length. This is slightly higher than the proportion in the previous year. In England, the proportion of electrified route was 44%. In Wales, 7% of the route length was electrified and in Scotland 33% was electrified.

Figure 3.1 The highest proportion of electrified route was in England

Total and electrified route length (kilometres) by country, Great Britain, as of 31 March 2024 (Table 6320)



¹ The following infrastructure is not included: High Speed 1 line, Isle of Wight line, Heathrow Link Line.

New electrification projects

In the latest year (April 2023 to March 2024), 141.4 kilometres of electrified track were added to the network.

Of this, 82.2 kilometres was due to the continued [electrification of the Core Valley Lines](#) to Aberdare, Coryton, Merthyr Tydfil, Rhymney and Treherbert as part of the project to create a [South Wales Metro](#).

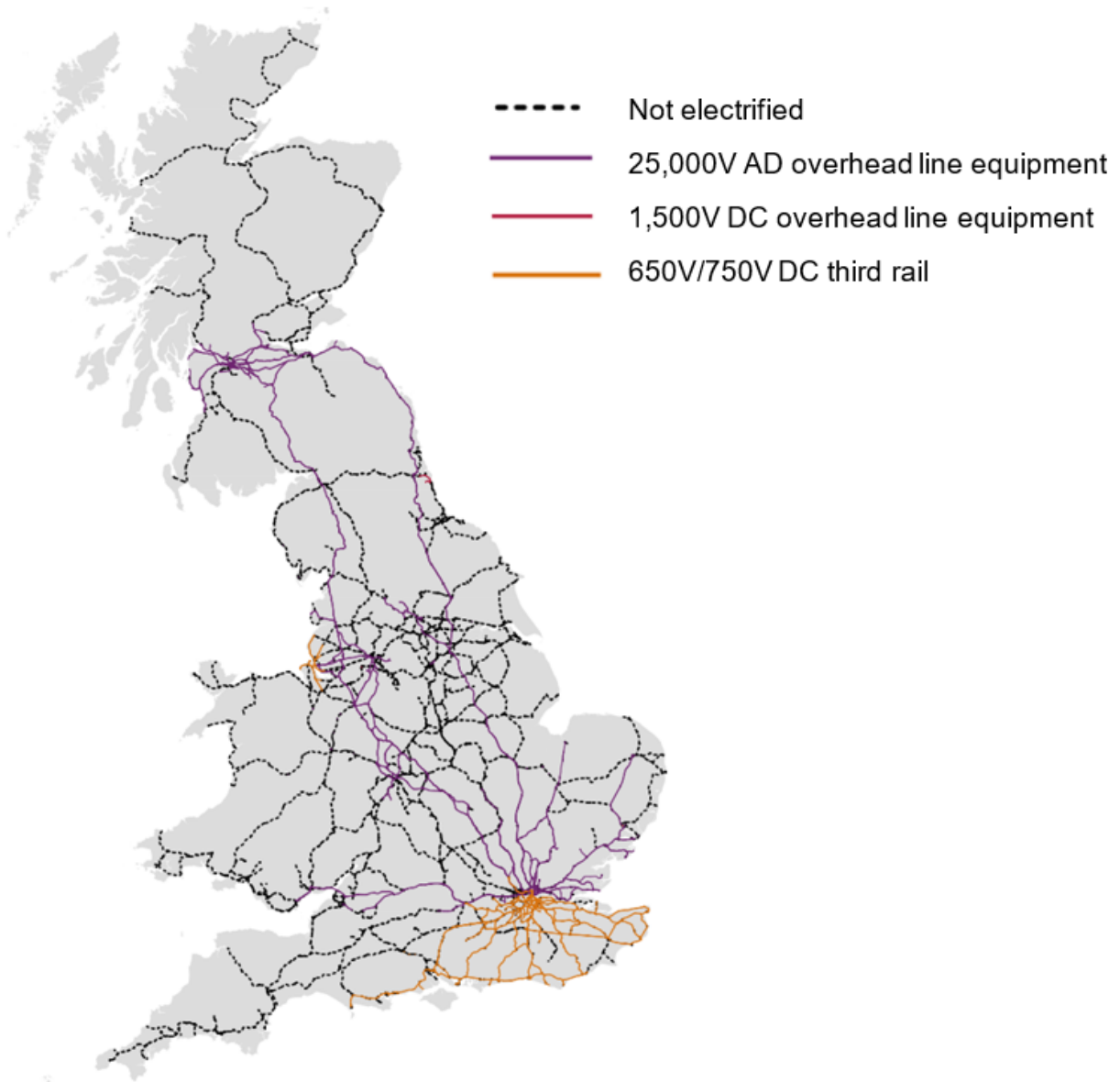
A further 38.8 kilometres was due to the [TransPennine route upgrade](#), with the electrification of the existing route from Manchester Victoria to the Stalybridge and Guide Bridge stations.

The remaining 20.4 kilometres of newly electrified track was from the [Glasgow-Barrhead line project](#), with the existing route between Glasgow Central and Barrhead station newly electrified.

Data on the length of electrified track added through various electrification projects that have taken place on the network since 1 April 1995 in Great Britain is available in Table 6320. From 1 April 2012 (shown as of 31 March 2013 in table), data is also available split by country.

Note that Network Rail publish data on track length and electrification projects by region in their [Annual Return data tables](#) (Table 49: Network capability and Table 67: Electrification of the network). These tables do not include non-Network Rail managed infrastructure.

Figure 3.2 Rail network by electrification scheme, Great Britain, as of 31 March 2024



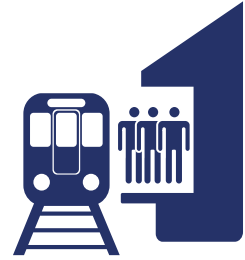
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The different track categories are:

- not electrified – trains run using diesel;
- electrified with 25,000V AC overhead line equipment;
- electrified with 1,500V DC overhead line equipment – used for Tyne and Wear metro;
- electrified with 650V or 750V DC third rail – supplied from additional rails at track level which are in contact with electricity collection equipment on the train.

4. Number of mainline stations

As of 31 March 2024, there were 2,585 open mainline stations in Great Britain



New stations

In the year April 2023 to March 2024, seven new stations opened:

- Brent Cross West (Barnet, England) opened 10 December 2023 and is served by Govia Thameslink Railway,
- East Linton (East Lothian, Scotland) opened 13 December 2023 and is served by ScotRail and TransPennine Express,
- Headbolt Lane (Knowsley, England), opened 5 October 2023 and is served by Merseyrail and Northern Trains,
- Marsh Barton (Exeter, England) opened 4 July 2023 and is served by Great Western Railway,
- Portway Park and Ride (Bristol, City of, England) opened 1 August 2023 and is served by Great Western Railway,
- Reading Green Park (West Berkshire, England) opened 27 May 2023 and is served by Great Western Railway, and
- Thanet Parkway (Thanet, England) opened 31 July 2023 and is served by Southeastern.

Closed stations

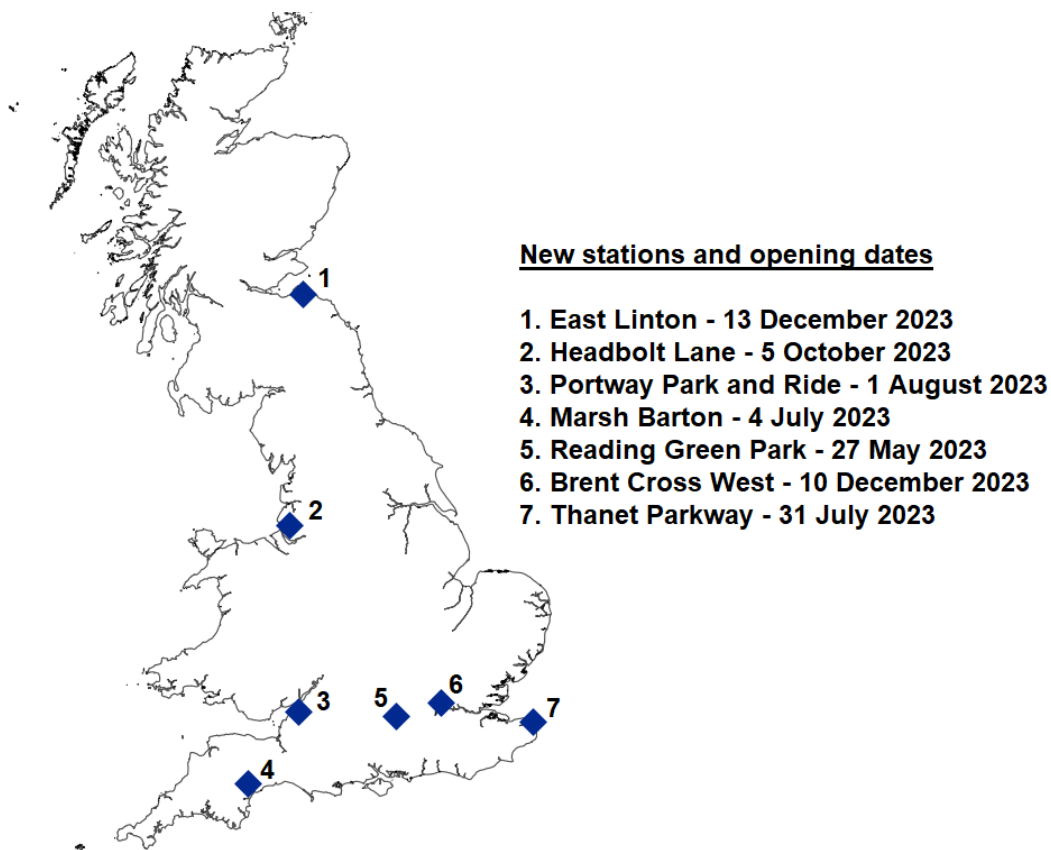
No stations permanently closed in the year April 2023 to March 2024.

Temporary station closures

[Stanlow & Thornton station \(Cheshire West and Chester\) was temporarily closed](#) from February 2022 until further notice. This was due to safety concerns with the footbridge entry to the station.

[Teesside Airport station was temporarily closed](#) from May 2022 until further notice. This was due to repairs being required.

Figure 4.1 Stations opened in the year April 2023 to March 2024, Great Britain



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For detailed information on all stations as at 31 March 2024 please see the following table on the data portal: [Table 6329 Station attributes for all mainline stations in Great Britain](#). This covers geographical and other attribute information, such as county, local authority, Easting and Northing, and station facility owner.

For estimates of station usage (entries/exits and interchanges) at all stations in Great Britain please see [Estimates of station usage page](#) on the data portal.

5. Authorisations and accessibility

Authorisations

New, major, upgraded or renewed infrastructure and rolling stock applicants must seek authorisation from ORR to place their subsystems into service. The [UK Register of Authorised Types of Railway Vehicles](#) aims to streamline the authorisation process and encourage standardisation on the railway network. There is a requirement for ORR to keep this register since the United Kingdom left the European Union.

The following railway vehicles were authorised in the year to 31 March 2024:

- USP 5000 Regulator authorised 26 April 2023
- IIA(D) Biomass hopper wagon (freight wagons) authorised 9 May 2023
- Further B66 UC Tampers authorised 25 May 2023
- Switch Inspection Machine 14 authorised 25 May 2023
- Class 197 First Class DMU authorised 9 June 2023
- SABL 2x60' Container Wagons (freight wagons) authorised 12 July 2023
- Class 805 authorised 20 December 2023
- Class 93 authorised 20 December 2023
- Class 66 Upgrade authorised 16 February 2024

For details of authorisations granted by ORR under the Railways (Interoperability) Regulations 2011 in the year to 31 March 2024, see the [Interoperability authorisations](#) page on ORR's website.

Accessibility

The Railways (Interoperability) Regulations 2011 and the Rail Vehicle Accessibility (Non-Interoperable Rail Systems) Regulations 2010 require that all passenger rail vehicles meet accessibility standards.

These requirements include, for example:

- providing access for wheelchair users
- the size and location of handrails, handholds and control devices
- providing passenger information systems and other equipment



Some older passenger vehicles are subject to exemptions from the requirements. These are granted by DfT, and published on DfT's website: [List of Rail Vehicle Accessibility Regulations exemption orders](#).

New passenger vehicles are required to be fully compliant with accessibility standards.

6. Annexes

Annex 1 – Definitions

- **Rolling stock** are railway vehicles, including both powered and unpowered vehicles, such as carriages, and freight wagons. The average age of rolling stock included in this release does not include locomotives or freight wagons.
- **Traction type** of the rolling stock refers to how the vehicle is powered. The vehicle may be powered from an electricity supply, or a diesel engine. Some vehicles are bi-mode, which can operate using electricity when running on electrified track or diesel along non electrified track. **Locomotive hauled** vehicles do not run under their own power, but instead have a locomotive at one (or both) ends of the train.
- **Route kilometres** are the total extent of routes available for trains to operate. Sidings and depots are excluded.
- **Track kilometres** takes into account multiple track routes (e.g. for each route kilometre where there is double track, there are two track kilometres). Sidings and depots are excluded.
- **Franchised operators** run services as part of contracts awarded by government (although no longer franchises, we have retained this term for referring to these operators for consistency and until a new term is adopted across the industry).
- **Non-franchised (open access) operators** are licenced by ORR to run services on specific routes. The data tables that accompany this publication contain data for such operators: Grand Central, Heathrow Express, Hull Trains, Lumo (began running services on 25 October 2021).
- **Authorisations** are needed by law as no structural or vehicle subsystem can be put into use on or as part of the rail system in Great Britain unless ORR has provided an interoperability authorisation placing their subsystem into service.

Annex 2 – Quality and methodology

Data sources

The number of mainline stations is sourced from data used to produce ORR's Estimates of station usage. This covers all stations on the rail network that are served by mainline services as at 31 March each year. Any stations where all services have been suspended temporarily are included, whereas stations closed permanently or where all services have been suspended permanently are not.

Data for track and route length is provided by Network Rail, Amey Infrastructure Wales Ltd (AIW) and Transport for London (TfL). Data for the following infrastructure is not included: High Speed 1 line, Isle of Wight line, Heathrow Link Line.

The Core Valley Lines (CVL) network was transferred from Network Rail to Transport for Wales on 28 March 2020. Transport for Wales leases its assets to AIW who is the Infrastructure Manager for the CVL network. There are 55 stations on the CVL network, and a map is available in the [2022 CVL network statement](#).

TfL manage the new Elizabeth line infrastructure (opened May 2022). The Crossrail Central Operating Section (CCOS) makes up most of the route used by Elizabeth line services that is not part of the Network Rail infrastructure.

Data for the **average age of rolling stock and traction type** is provided by Rail Safety and Standards Board (RSSB). This is from the R2 central asset management system. R2 holds details of every vehicle registered to operate on the railway in Great Britain, and is the single repository for all vehicles and major components with full maintenance history. The data presented in this release is for mainline operators in Great Britain. The data does not include Eurostar, London Underground, light rail, heritage and charter services.

Revisions

There have been no revisions to previously published data.

Details on previous revisions can be found in the [Revisions log](#).

Further information on data sources, quality, methodology and the historical background, can be found in the [Rail infrastructure and assets quality and methodology report](#).

How these statistics can be used



- Monitoring the number of mainline stations in Great Britain, and newly opened stations
- Comparing the average age of rolling stock by operator over time
- Comparing operators' rolling stock by traction type
- Monitoring new track electrification schemes, and total track and route lengths

How these statistics cannot be used



- Identifying specific rolling stock by operator – [this information is held in RSSB's R2 database](#)
- Identifying passenger usage for mainline stations (refer to [Estimates of station usage](#))
- Identifying number of trains running on specific sections of track
- Plans for operators to introduce new rolling stock in future years
- Information on rolling stock for freight operators or non-mainline operators (e.g. heritage)

Annex 3 – List of data tables associated with this release and other related statistics

Data tables

All data tables can be accessed on the [data portal](#) free of charge in OpenDocument Spreadsheet (.ods) format. We can also provide data in csv format on request.

All tables associated with this release can be found under the Data tables heading at the bottom of the [Rail infrastructure and assets page](#).

Infrastructure on the railways

- Infrastructure on the mainline – Table 6320
- Stations on the mainline – Table 6325
- Station attributes for all mainline stations in Great Britain – Table 6329

Rolling stock

- Average age of rolling stock by operator – Table 6313
- Rolling stock vehicles by traction type and operator – Table 6314

Other related statistics

Fuel consumption and estimates of associated emissions of passenger and freight operators are published on the [Rail emissions page](#) on the data portal. This includes estimates of emissions by electric and diesel vehicle kilometres. Passenger vehicle and train kilometres split by traction type is published on the [Passenger rail usage page](#) and freight vehicle and train kilometres split by traction type is published on the [Freight rail usage and performance page](#).

Estimates of entries/exits and interchanges at each mainline station in Great Britain is published annually in [Estimates of station usage](#).

Annual statistics covering Station Stewardship Measure (SSM) and Light Maintenance Depot Stewardship Measure (LMDSM) are published on the [Asset condition page](#) of the data portal.

Network Rail publish data on track length by region in their [Annual Return data tables](#). Table 49: Network capability and Table 67: Electrification of the network.

European Comparisons

Eurostat publish [data on the total length of railway lines in European countries](#), measured in route kilometres. Data is available for calendar years 2008 to 2022. As of 2022, the United Kingdom had a route length of 16,430 kilometres.

The [Independent Regulator's Group-Rail \(IRG-Rail\)](#) publish data on network length, electrified route length and high-speed route length. In 2022, the average proportion of electrified route length was 56% for member countries. The UK ranked 22nd out of 31 countries, with a proportion of 38%.

Annex 4 – ORR’s statistical publications

Our statistical practice is regulated by the Office for Statistics Regulation (OSR). OSR sets the standards of trustworthiness, quality and value in the [Code of Practice for Statistics](#) that all producers of official statistics should adhere to. You are welcome to contact us directly with any comments about how we meet these standards by emailing rail.stats@orr.gov.uk. Alternatively, you can contact OSR by emailing regulation@statistics.gov.uk or via the OSR website.

Statistical Releases

This publication is part of ORR’s [‘accredited official statistics’](#), which consist of seven annual publications: **Estimates of station usage; Rail industry finance (UK); Rail fares index; Rail safety statistics; Rail infrastructure and assets; Rail emissions; Regional rail usage;** one biannual publication: **Passenger rail service complaint;** and three quarterly publications: **Passenger rail performance; Freight rail usage and performance; Passenger rail usage.**

ORR also publishes a number of other Official Statistics, which consist of five annual publications: **Common Safety Indicators; Passenger satisfaction with complaints handling; Train operating company key statistics; Occupational health; Rail statistics compendium;** and four quarterly publications: **Signals passed at danger (SPADS); Delay compensation claims; Disabled Persons Railcards (DPRC); Passenger assistance.**

All the above publications are available on the [data portal](#) along with a list of [publication dates](#) for the next 12 months.

National Statistics

Accredited official statistics are called National Statistics in the Statistics and Registration Service Act 2007. They are official statistics that have been independently reviewed by the Office for Statistics Regulation and found to comply with the standards of trustworthiness, quality and value in the Code of Practice for Statistics.

The majority of our [statistical releases were independently reviewed by the OSR in June 2012](#). They comply with the standards of trustworthiness, quality and value in the [Code of Practice for Statistics](#) and are labelled accredited official statistics.

Since our review we have improved the content, presentation and quality of our statistical releases. In addition, in July 2019 we launched our new data portal. Therefore, in late 2019 we worked with the OSR to conduct a compliance check to ensure we are still meeting the standards of the Code. On 4 November 2019, [OSR published a letter](#) confirming that ORR’s statistics should continue to be accredited official statistics.

OSR found many positive aspects in the way that we produce and present our statistics and welcomed the range of improvements made since the statistics were last assessed.

Estimates of station usage statistics were [independently reviewed by OSR](#) in November 2020 and [their accreditation was confirmed](#) on 1 December 2020.

For more information on how we adhere to the Code please see our [compliance statements](#).

If you have any feedback or questions, please email rail.stats@orr.gov.uk.



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