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Rail Recharged: Scotland's Fleet Transition Strategy

Delivering a Modern Fleet for a Connected Scotland

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Ministerial Foreword

I am pleased to introduce our fleet transition strategy for Scotland's railway. This has been developed in line with the commitment made within the Rail Services Decarbonisation Action Plan to review the progress that has been made towards decarbonising Scotland's rail services, whilst acknowledging the challenges and opportunities that the Scottish Government and rail industry has faced since the plan was first published in 2020.



We continue to advance our rolling programme of electrification with three quarters of passenger journeys being made on electric trains. In December 2023, I was delighted to travel on the first electric passenger train from Glasgow Central to Barrhead. The completion of this project, early and on budget, was a significant milestone in our ongoing work to electrify Scotland's railway. This journey continues and we are on track to complete the electrification and enhancement of the East Kilbride line in December this year, delivered with Scottish Government investment of over £143 million.

The Scottish Government already has a proven track record of modernising Scotland's passenger services and we are committed to continuing with these service enhancements. As part of this, I have approved procurement to replace ScotRail's InterCity fleet. This action will ensure the long-term reliability and resilience of our long-distance rail services which connect seven of Scotland's major cities and which are a key driver for growing regional economies and providing access to leisure and cultural experiences.

On 5 September 2025, I announced that the Scottish Government is investing £342 million to electrify the Fife and Borders routes to facilitate the introduction of battery-electric trains. In conjunction with this, ScotRail has been authorised to procure the new battery-electric fleet required for Fife and Borders services, along with new electric trains for the Glasgow Suburban area. This investment will benefit 30% of Scotland's passengers through the introduction of newer, more reliable and energy efficient trains.

This plan comes at a critical time for Scotland's railway, particularly as two thirds of ScotRail's passenger trains are approaching the end of their usable life. Our strategy recognises the need to replace our trains in order to sustain the resilience and reliability of our rail services, which is essential to encourage more people to make sustainable travel choices.

The Scottish Government has demonstrated its commitment to ensuring more people can access Scotland's railway. I am proud that since 2020, we have delivered new stations at Reston, East Linton, Kintore, Inverness Airport and, most recently, at Cameron Bridge and Leven. These investments have connected more people to Scotland's rail network, creating access to a range of employment, educational and cultural opportunities for local communities.

We have also taken bold action to make rail travel more affordable and attractive to passengers by permanently removing peak fares on all ScotRail services. This will enable more people to make long-term travel choices with certainty and strengthen the credentials of rail travel as an environmentally friendly alternative to car travel.

Bringing ScotRail and Caledonian Sleeper into public ownership has meant we can now deliver a railway which is run for the benefit of the people of Scotland. Already we have seen strong year-on-year increases in patronage with 84.7 million journeys made in 2024/25 which is up from 63.7 million in 2022/23 and 81.1 million in 2023/24. This represents a 33% increase in passengers in just over two years and we will work collaboratively with our delivery partners to ensure these numbers continue to grow.

We recognise that Scotland's railway plays a central role in tackling the climate emergency. The transport sector overall remains the greatest contributor of greenhouse gas emissions in Scotland, and while the rail sector only contributes 1% of Scotland's transport emissions, we know that rail travel only has a 2% modal share of all journeys in Scotland.

We are already taking action to improve the affordability and attractiveness of rail. It is imperative that we have a reliable and resilient fleet that caters to our passengers' needs to ensure more people can benefit from their publicly-owned rail services, new stations, and a more affordable fare system. Our fleet transition strategy will support this while advancing the rail sector's continuing work to become net zero by 2045.

This strategy outlines the journey we will take to introduce this new rolling stock to our rail network and how this will sustain the future reliability of our InterCity, Suburban and Rural services for the long term. I look forward to seeing how this journey continues to evolve, as we work with our delivery partners to provide a rail system that is operationally, financially, and environmentally sustainable and delivers for the people of Scotland.

Fiona Hyslop MSP

Cabinet Secretary for Transport

Executive Summary

Scotland has an extensive railway network, it connects our cities, towns and villages for business and leisure travel, supports access to healthcare, education, and training facilities. We are committed to facilitating these vital connections with rail services that are reliable, resilient and cater to passenger needs. We are taking action to replace ScotRail trains that are reaching the end of their useable life.

The Scottish Government is committed to building on its impressive record of modernising Scotland's railway: this strategy demonstrates how train fleets will be replaced to achieve this and to sustain the long-term resilience and reliability of our passenger services.

Wider Context

As a key component of Scotland's transport system, our strategy to replace ScotRail's fleet is a central part of delivering the strategic vision set by Transport Scotland.

Our National Transport Strategy sets out a 20 year plan to support our priorities to reduce inequalities, take climate action, help to deliver inclusive economic growth and to improve our health and wellbeing. Scotland's railway directly supports these four priorities.

Having a reliable, accessible, and affordable railway provides access to jobs which secures an income for people across the country, opens the doors to education and training opportunities for young people, ensuring they have the best start for a bright future. Our railway is for everyone and we work closely with our delivery partners to remove barriers to our services by ensuring improvements to accessibility are embedded in the work that we do. **We are reducing inequalities.**

Our railway is part of a transport system which allows people to make more sustainable travel choices and we are committed to prioritising investment to promote sustainable travel. Encouraging more people away from their cars and onto the railway will help to reduce Scotland's transport emissions. We have taken action to make rail travel more affordable by permanently removing peak fares. Now we are now taking action to ensure we have resilient and modern fleets that will not only attract, but retain, our passengers for years to come. The fleets we are procuring will be cleaner, greener, and more efficient which will yield benefits for tackling emissions across the rail network. **We are taking climate action.**

Scotland's railway binds our country together and supports our tourism, hospitality, cultural and leisure sectors. Scotland's success depends on these sectors and the connections that the railway provides for people and goods. We need to ensure our services continue to provide these connections both now and into the future. Replacing our fleet will sustain these services and will ensure our railway **helps to deliver inclusive economic growth**.

Having a transport system that supports health and wellbeing will ensure better outcomes for our population. Reliable, efficient, affordable, and accessible rail services will attract people away from their cars and so reduce the number of harmful pollutants released into our air. Improved air quality leads to better health outcomes for people across Scotland, both young and old. Beyond this, replacing our trains with cleaner and greener alternatives will ensure **the rail sector plays its part in improving air quality and the overall health and wellbeing of Scotland**.

More widely, the Scottish Government has set legally binding targets of reaching net zero emissions by 2045. [Rail only contributes around 1% of total transport emissions](#) but has a key role in reducing the overall transport emissions envelope through ensuring modal shift. Our trains need to be reliable, need to encourage modal shift and need to be modernised. **We are taking action to do this through this plan.**

The approach outlined in this plan is also aligned with the recommendation to decarbonise the rail network within the [Strategic Transport Projects Review 2 \(STPR2\)](#) which informs transport investment in Scotland for the next 20 years.

In addition to this, the Scottish Government continues to face significant financial pressures and it is important that the actions we take to deliver a transport system that is sustainable, inclusive, safe, and accessible are financially responsible.

We recognise our rail network exists within this wider strategic context and our plan to replace our fleets has been informed by the priorities set by Transport Scotland and the Scottish Government.

Our Plan

We are replacing ScotRail trains as they reach the end of their useful life. This will ensure we have modern and resilient trains that passengers can rely on. This plan sets out our route map to transitioning our fleets and we will do so in a way that is **operationally, financially and environmentally sustainable**.

Our fleet transition strategy prioritises the operational sustainability of our rail services against the uncertain and often challenging financial landscape. Our track and train decisions will be integrated, aligning with infrastructure enhancement and renewal plans. We will also be flexible to capitalise on recent technological advances that would enable us to secure cheaper, greener and more efficient trains. To do this in a cost-effective way that balances passenger needs we have identified the following prioritisation of our rail services:

InterCity: The diesel trains that currently operate on our InterCity routes are approaching the end of their life. In December 2024, we began the procurement to replace these trains; the replacement fleet will be cleaner and more reliable with improvements in comfort, efficiency and travel experience similar to other high speed train journeys in Great Britain. This action will sustain the connections between seven of Scotland's major cities and support access to jobs, education leisure and cultural experiences while growing regional economies.

Suburban: We have launched the procurement for a single new fleet of electric trains, some of which will have batteries to displace the midlife diesel trains that run on the Fife and Borders routes and replace the electric trains on some parts of the Strathclyde network which are reaching the end of their life. Electric trains provide greater comfort and reliability for passengers, as well as costing less to operate and maintain. These are benefits that we have already seen since the introduction of the Class 385 and 380 trains which operate on some of the key routes on our network and have been popular with our passengers. It is only right that more of our passengers can benefit from newer and greener trains.

Rural: The actions we are taking to modernise our suburban network will have positive impacts on our rural lines through the introduction of the more modern and cleaner diesel trains which will be cascaded from our Fife and Borders routes. This will improve reliability, resilience, and comfort for our passengers while we continue to explore the zero-emission alternatives for the rural market.

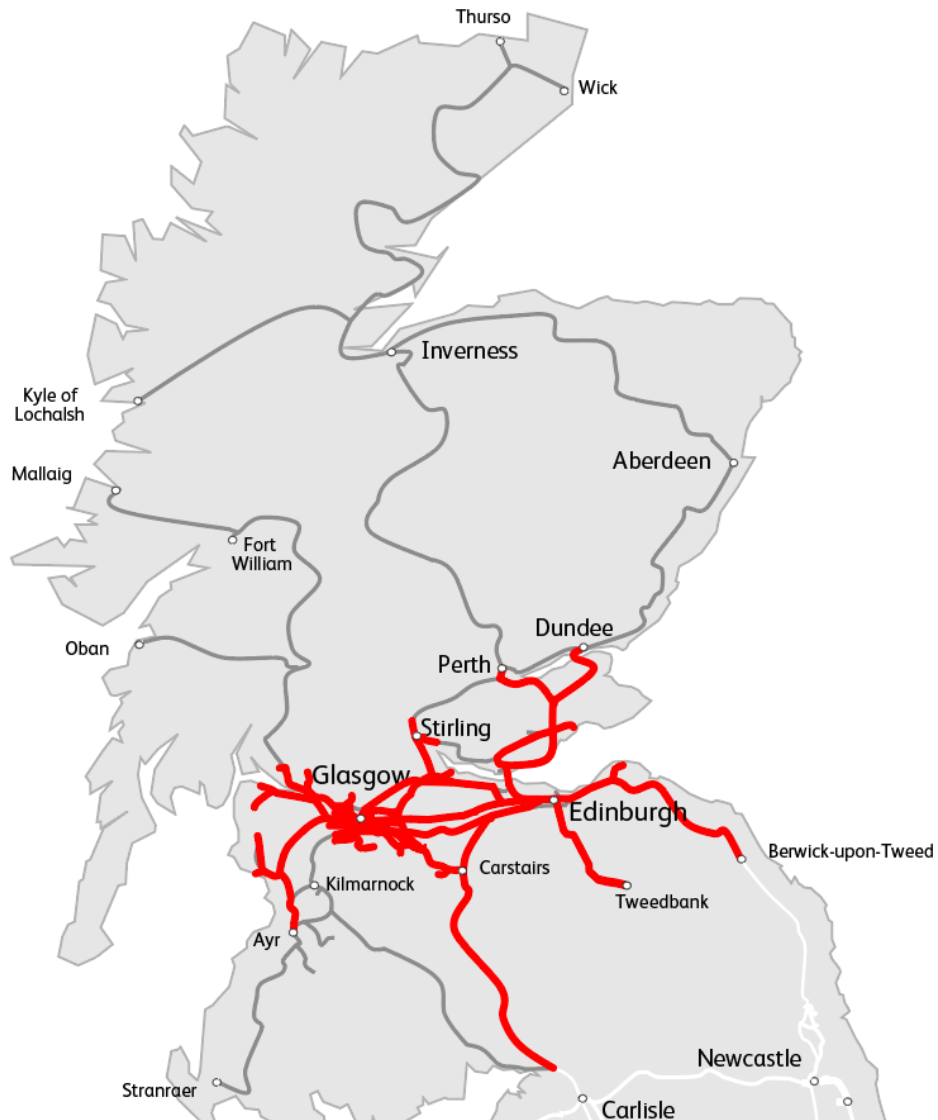
The Impact

This year marks 20 years since Transport Scotland was established and the devolution of executive powers over rail funding, specification and strategy for Scotland's railway. Since the devolution of rail powers, the Scottish Government has continued to take bold action to modernise Scotland's rail network in order to deliver better and more efficient services for passengers through electrified services. This plan represents the next step in that journey towards providing a reliable, resilient and modern rail network for the people of Scotland.

Figure 1 – A map of the electrified rail network in Scotland pre-creation of Transport Scotland (2005)



Figure 2 – A map of the electrified rail network following the introduction of battery-electric trains on our Fife & Borders routes.



Chapter 1: Why are we doing this?

An Ageing Fleet

ScotRail currently operate a diverse fleet of 145 diesel trains and 203 electric trains. We are faced with a growing challenge around the age of the ScotRail fleet which is made up of some of the oldest passenger trains in Great Britain. ScotRail will soon be the last operator of each of its legacy fleets in Great Britain.

We are taking action to replace the following ScotRail trains that are reaching the end of their useful life.

Diesel

High Speed Train – Class 43 & Mark 3

These trains currently serve our InterCity corridors between Glasgow/Edinburgh to Aberdeen or Inverness. These trains were built in the 1970s and have been a staple feature across the rail network in Great Britain.



Class 153

The Class 153s were built in the late 1980s and were since refurbished in 2020 to provide upgraded facilities and additional space for bikes and sporting equipment to support active travel on the West Highland line.



Class 156

First built in the late 1980s, our Class 156 fleet has served passengers across the length and breadth of Scotland. These trains currently operate on the Glasgow South Western Line, Maryhill Line, Shotts Line and the West Highland Line in conjunction with the upgraded Class 153s.



Class 158

These trains were first constructed in the late 1980s and early 1990s. They are widely recognised across the Scottish rail network, serving passengers on the Aberdeen to Inverness line, Borders Railway, Far North Line, Fife Circle (including Levenmouth rail link), Glasgow/Edinburgh to Inverness, Kyle of Lochalsh line and also the Maryhill Line.



Class 170

Built in the late 1990s into the early 2000s, the Class 170s represent ScotRail's most modern diesel fleet. These trains work in conjunction with the Class 158s by serving passengers across the same route sections of the rail network.



Electric

Class 318

First constructed in the mid-1980s, the Class 318s are ScotRail's oldest electric trains and have supported cleaner rail journeys across the Glasgow suburban network from the 1990s to the present day.



Class 320/3 & Class 320/4

These train types were constructed between 1989 and 1990 and are a regular feature of the electrified suburban network having served the following routes:

- North Clyde Line
- Whifflet Line
- Inverclyde Line
- Paisley Canal Line
- Argyle Line
- Cathcart Circle Lines
- Glasgow to Lanark (including Motherwell)



Class 334

These electric trains were built between 1999 and 2002. They mainly run on the North Clyde line which stretches between Edinburgh, Airdrie, Milngavie, Balloch and Helensburgh Central, whilst also serving passengers on the Argyle line which stretches from Lanark all the way to Dalmuir.



These trains are familiar to passengers across the Scottish rail network, however within the next 15 years, two thirds of our trains will need to be replaced. This includes the diesel and electric trains outlined above which are beginning to approach the end of their useful life. The older these trains get, the more difficult it will become to source spare parts and perform essential maintenance on them. This is likely to adversely affect operational performance, with the resulting burden falling disproportionately on passengers. It is therefore imperative that we maintain the operational sustainability of Scotland's passenger services.

We know how important our railway is for connecting people and communities, along with generating access to public services, healthcare, employment, education and leisure facilities. This is why we are taking action through this plan to replace these trains with a more modern and reliable fleet.

We can draw on the benefits of our previous experience of delivering modernised passenger services and infrastructure. This was achieved through our ongoing programme of electrification which led to the introduction of Class 380s and Class 385s which have proved popular with passengers due to their comfort, improved reliability and speed.

We are now taking the necessary action to expand this important work to the rest of our rail services.

Policy Context

The broader policy context for our plan links directly to the First Minister's priorities for the Scottish Government and aligns with our National Transport Strategy and associated transport investment framework.

First Minister's Priorities

The First Minister set out four priorities for the Scottish Government to:

- Eradicate Child Poverty;
- Grow the Economy;
- Tackle the Climate Emergency; and
- Ensure the delivery of High Quality and Sustainable Public Services.

Replacing our passenger trains as they reach the end of their useable life will improve the resilience and reliability of rail services whilst also contributing to delivering against these national priorities. We know that our railway can provide access to jobs, education and training opportunities, which are essential for providing parents, carers and young people with a secure income to alleviate poverty pressures. These people stand to lose most if they cannot rely on our rail services.

Scotland's railway is widely recognised as part of the fabric of the Scottish economy. The benefits of rail travel were highlighted in ['The Value of Transport' paper published by Transport Scotland in June 2025](#). As well as this, [research published by Steer](#) in March 2025 shows that ScotRail has a total economic impact of more than £4 billion by supporting 11,300 jobs and through the important part it plays supporting Scotland's tourism, leisure and hospitality sectors. These are all sectors that Scotland's success depends on and that we are proud to showcase to our citizens and the rest of the world. Our passenger services will continue to support this regional and economic growth, which is why we must take action to sustain them.

We continue to see the growing impacts of climate change and are determined to ensure that Scotland's railway continues to play its part in tackling emissions by providing a greener alternative to the car.

ScotRail provides a public service which many people rely on. In order to maintain a high quality and modern service that caters to our passengers needs it is important we take action to replace the ScotRail fleet as it reaches the end of its useful life.

This will ensure the operational sustainability of our passenger rail services.

National Transport Strategy

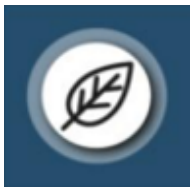
[Scotland's National Transport Strategy 2](#) (NTS2) sets out an ambitious vision for Scotland's transport system for the next 20 years as well as the strategic framework for delivering on that vision. The vision is to have a sustainable, inclusive, safe and accessible transport system, helping deliver a healthier, fairer and more prosperous Scotland for communities, businesses and visitors. It is underpinned by four interconnected priorities: reduces inequalities, takes climate action, helps deliver inclusive economic growth and improves our health and wellbeing. Our strategy to replace life-expiring ScotRail trains directly supports each of these four priorities.

Priority: Reduces Inequalities



A reliable, accessible and affordable rail network provides access to jobs and education opportunities, connects our diverse communities and ensures we have a rail system that works for everyone.

Priority: Takes Climate Action



We are committed to attracting more people away from their cars and onto the railway to reduce Scotland's transport emissions. We will continue to run a railway that is climate responsible which is why we are replacing our trains with greener alternatives to reduce rail emissions.

Priority: Helps Deliver Inclusive Economic Growth



A reliable and resilient railway moves people and goods across the country. This has direct benefits for our tourism, hospitality, cultural and leisure sectors which are all economically important for Scotland's success.

Priority: Improves Our Health and Wellbeing



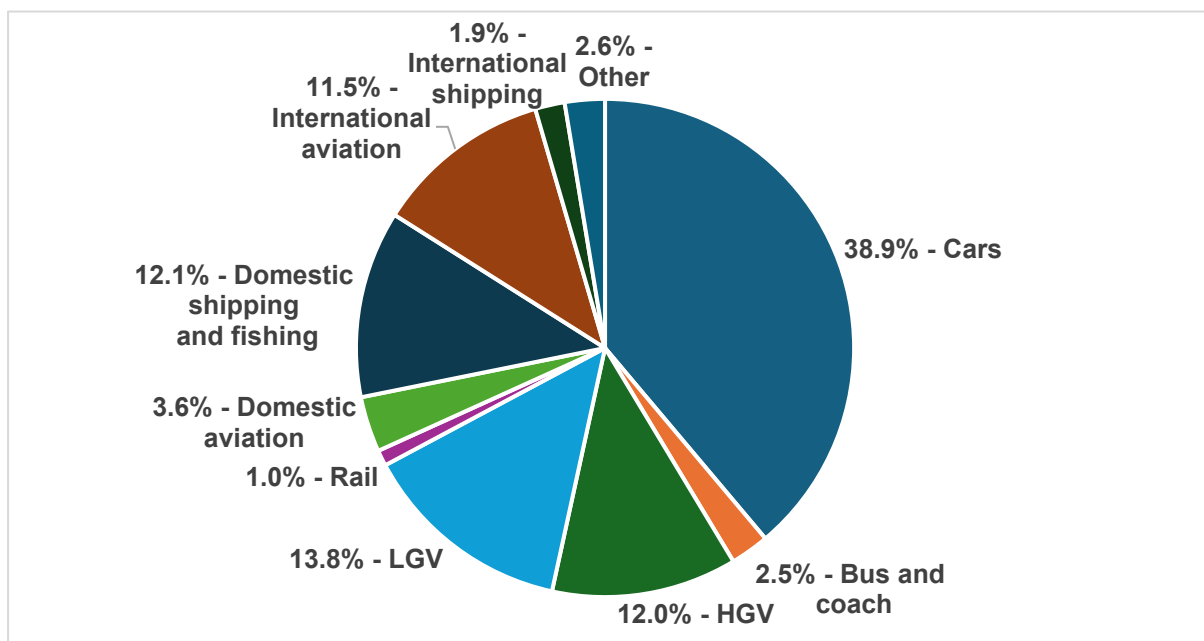
Air quality will be improved if we procure cleaner and greener trains which will result in more reliable, efficient, affordable and accessible rail services. This can attract people away from their cars which will decrease the levels of harmful pollutants in our air.

The Climate Crisis

Climate change continues to be a global issue. Addressing it remains at the forefront of the Scottish Government's priorities and has been re-emphasised by the First Minister. The Scottish Government has set a legally-binding target to reduce emissions and transition to a net zero economy and society by 2045. Since 2016, the transport sector has consistently been the largest contributor to Scotland's emissions. This has not changed post-pandemic, with transport (including international shipping and aviation) accounting for around 33% of total [Scottish emissions in 2023](#).

Contributing only 1% of total transport emissions in the same year, rail remains a very low carbon form of transport. Rail will play a central role in reducing Scotland's transport emissions, through encouraging modal shift by being seen as an attractive and convenient alternative to the car, and also from reducing rail's own emissions by the introduction of cleaner and greener trains to the network.

Figure 3: Share of greenhouse gas emissions by transport mode in Scotland (2023)



Environmental sustainability has been a key feature throughout the development of our plan to sustain Scotland's rail services, and our plan directly supports the Scottish Government's wider efforts to tackle climate change.

Firstly, we recognise and celebrate the environmental benefits of rail travel and it is important that we continue to encourage more people away from their car and onto the railway.

Whilst rail remains a very low-emission mode of transport, we need to make sure our services continue to be reliable, resilient and efficient to ensure rail travel will be seen as a credible alternative to the car. Replacing our fleet is essential.

Secondly, our plan to replace life-expiring rolling stock will support our wider efforts to tackle rail's own emissions. Decarbonising Scotland's passenger rail services remains a priority for the Scottish Government. In July 2020, Transport Scotland published the Rail Services Decarbonisation Action Plan when Scotland, and the rest of the world, was grappling with the early stages of the Covid-19 pandemic. The 2020 plan has been subject to continuous improvement and gave a commitment to review the plan in a post-Covid environment.

The past five years have allowed us to reflect and to reassess our plan, in light of the technological developments, and against the significant financial, budgetary and supply chain pressures. Our approach to replacing life-expired ScotRail trains will be informed by Scotland's legally binding net zero targets. This is balanced against the need to avoid excessive disruption to our passenger services, coupled with the financial and technological landscape we face as we progress with the journey to replace our passenger trains.

We have a responsibility to reduce rail emissions which is why we have identified viable solutions to replace ScotRail trains with cleaner alternatives, and an assessment of these options can be found at Chapter 2 of this strategy.

More broadly we have a wider transport approach to decarbonising the sector through investment in low emission buses and ferries.

Progress Since 2020

We know that Scotland's railway has a lot to offer and that is why it is important that we take the necessary steps to sustain our passenger services to ensure more people can benefit from using the network.

Recognising the importance of rail travel, the Scottish Government has continued to invest in opening new stations to connect more people across the country with Scotland's rail network.

There are new stations at Reston, East Linton, Kintore and Inverness Airport which open up pathways for communities to access employment, education, leisure and cultural opportunities.

In 2024, passenger services returned to Levenmouth, previously the largest urban area in Scotland not served by rail. This was part of a programme of investments to deliver social inclusion and sustainable economic growth to the area. Through Scottish Government investment of over £116 million, we delivered 19 single track kilometres of new and reinstated railway, two new modern accessible stations at Leven and Cameron Bridge and infrastructure with future provision for electrification of the line.



Public ownership of ScotRail and Caledonian Sleeper means we can rightly focus on the needs of our passengers.

There has been continued improvement in the performance of ScotRail and Caledonian Sleeper services. ScotRail's Public Performance Measure (a measure of reliability and lateness) and passenger satisfaction is well above the average across the rest of Great Britain. The Caledonian Sleeper's performance has also improved under public ownership and its passenger numbers have grown significantly, representing one of the strongest post-pandemic recoveries across all GB train operators.

Having publicly owned train operators has proven essential for driving performance, which is key to encouraging more people to travel by rail. ScotRail's passenger numbers have continued to grow year on year since public ownership and it is important that we work collaboratively with our rail delivery partners to continue to build on this upward trend.

The aftermath of the pandemic has placed considerable strain on the Scottish Government's budget, requiring us to make carefully considered investment choices to help manage public finances responsibly. Despite the challenges of the post-2020 landscape, we remain committed to delivering our rolling programme of electrification and the subsequent decarbonisation of Scotland's railway. Already three quarters of ScotRail passengers are travelling on electrified services, with the Barrhead line being the most recent addition to the electrified network.

In December 2025, we will complete the electrification and enhancement of the line to East Kilbride. Through over £143 million of Scottish Government investment, passengers on this line will benefit from cleaner, greener, quieter and more efficient services along with a new station at East Kilbride which opened on 20 August 2025 and a relocated accessible station at Hairmyres which opened on 19 May 2025.



Scotland's railway is becoming greener, more efficient, attractive and accessible. The Scottish Government is spending £4.2 billion to operate, maintain and renew Scotland's railway between 2024 and 2029. This supports our efforts to tackle the climate emergency and deliver on our net zero ambitions, while also creating sustained, skilled employment in the rail sector through a just transition.

Investing in the workforce is essential: we must capitalise on existing skills whilst identifying and creating opportunities to upskill the current workforce to future-proof Scotland's railway.

The Rail Cluster Builder is a specific example of the Scottish Government supporting the rail industry. Funded by Scottish Enterprise, Transport Scotland and Skills Development Scotland, the Rail Cluster Builder Phase 2 is a three-year project connecting more Scottish SMEs with rail sector organisations, strengthening and deepening relationships with key stakeholders across the sector and helping to create innovative, green solutions that will support net zero targets.

Maximising the benefits of rail freight has continued to be a priority for the Scottish Government. Transporting more goods through rail freight is key to tackling Scotland's transport emissions which is why we have set an ambitious rail freight growth target of 8.7% for Control Period 7. This target has helped to change industry behaviours and has put a real and tangible focus on growing rail freight.

In 2024/25, 642 million net tonne kilometres of rail freight was moved in Scotland, representing an increase of 3.2% on the previous year. The figures for 2024/25 also show that rail freight in Scotland has become more efficient with fewer trains carrying more product. We continue to work in partnership with the private sector to encourage more businesses to utilise rail freight.

It is important to recognise and celebrate the considerable progress Scotland's railway has made since 2020. In collaboration with our delivery partners, we have taken the necessary steps to make rail travel more attractive, affordable and available for people across Scotland.

This strategy represents the next step towards advancing this progress further, as we invest to deliver a modern, reliable and resilient fleet for our passengers.

Chapter 2: Our Approach

A fleet-led approach

We will replace existing trains as they reach the end of their life with either new or with younger trains cascaded from other routes. This is the lowest cost way to maintain the resilience, reliability and continuity of the rail service we provide.

Anticipated life expiry dates for the existing ScotRail trains provide major transition points and are a key driver for the development of this plan. By 2045, the existing trains will all be replaced with zero-emission trains which will guarantee the operational, financial and environmental sustainability of Scotland's railway.

Replacing a significant number of train fleets comes with many changes for the rail industry as a whole. To do this while maintaining the service for our passengers, we will continue to invest in our existing fleet to ensure they continue to operate safely and reliably until they can be replaced. The first phase of these improvement works to our existing trains is underway and will continue through to 2028.

Service Prioritisation

Our plan will see ongoing changes to train fleets across the network and it is important we do this in a strategic way by prioritising specific services. We have done this based on a range of factors including:

- Patronage
- Linking Towns & Cities
- Freight Opportunities
- Driving Economic Growth
- Connections for Tourism, Leisure & Hospitality Sectors
- Cross Border Linkages
- Emissions
- Air Quality

Taking these factors into account we have prioritised our rail services based on three passenger markets: **InterCity - Suburban - Rural**.

We did this by identifying where the above factors would be most negatively impacted if we were unable to sustain our passenger services. Our approach has identified bespoke solutions for each of these routes.

Our Fleet Solutions

Thanks to the technological advances over the past five years, we have learned a lot more about the options available to us, their applicability to the Scottish network as well as the economics of each option. Train options have been assessed against benefits and costs, capabilities and maturity, to select solutions that meet service requirements effectively and efficiently.

Electric trains have been tried and tested on Scotland's rail network. We have continued to deliver our programme of electrification which has created and maintained jobs, developed key skills for the industry, and has resulted in innovation and improvements to the unit cost of delivering electrification. We know that new electric trains are popular with passengers through the introduction of Class 380s and Class 385s to the network, this is because these trains provide a quieter, smoother and faster passenger experience.

We have seen the rapid development of two electric technologies that are likely to be sufficiently mature to make a significant impact for passenger services, these are battery-electric and battery only powered trains.

We have identified four potential options for replacing ScotRail trains that are reaching the end of their life. Each of these options are essential for sustaining Scotland's rail services and realising the Scottish Government's net zero ambitions.

Electric Trains

Electric trains and sufficient electrification of the network remain the preferred end-state for the main InterCity and Suburban passenger services where there is also a freight market, as this will enable the future operation of electric freight trains.

Electric trains will guarantee the operational, environmental and financial sustainability of our passenger services because:

- They are more reliable and efficient, thus providing an attractive alternative to the car for passengers.
- They are a zero-emission alternative to diesel trains and will support the decarbonisation of Scotland's railway.
- They operate at a lower cost compared with their diesel equivalent, because they are lighter, cost less to build and are less complex to maintain.

Battery-Electric Trains

The technology to support battery-electric trains on the Scottish rail network has developed at pace. These trains require to be charged whilst the train is running on an electrified section of the route, or from a shore supply when stabled. Where there is no freight market, or as a transitional measure on InterCity routes, the operation of battery-electric trains can deliver the same carbon benefits as a fully electric train while significantly reducing the capital investment required in the short to medium term. These trains will improve the punctuality and reliability of our passenger services, while guaranteeing operational sustainability. Battery-electric trains will also reduce the cost of running the railway, when compared with a diesel train, due to their lower energy, maintenance and operating costs.

Independently-Powered Trains

These are either battery-only or hydrogen-powered trains. Battery-only trains require to be charged during layover periods through facilities at terminus or intermediate stations and at depots. While the mileage per charge of batteries is improving as the technology matures, this makes battery-only trains suitable for short-to-medium distances where they can offer reliable train performance. Given the technological progress that continues to be made, we view battery trains as one of the most viable options for an independently-powered fleet.

Hydrogen also has the potential to play a role here and in collaboration with the University of St Andrews' Hydrogen Accelerator and Scottish Enterprise, we ran a demonstrator project to convert a retired ScotRail electric commuter train into a hydrogen fuel cell train. The application of this technology on rail networks is not yet proven and its supply chain and logistics are still immature. Therefore, to ensure we can deliver a reliable year-round passenger rail service, we will not be considering a hydrogen-powered fleet until the technology has advanced and the cost-benefit analysis is mature.

Transition Fleets

For InterCity routes, electric trains are the preferred end-state. Where a significant extent of electrification is required on these rail corridors, we may introduce interim solutions to allow flexibility in the pace of electrification delivery which will reduce the impact on passengers and businesses as much as practicable. Fully electrifying these routes in a short period of time would require a capital investment as well as causing significant operational challenges, as large sections of the railway would need to be closed to undertake construction works; this would negatively impact passengers on the InterCity routes.

Financial Sustainability

Financial sustainability is a key feature of our strategy to replace ScotRail trains and sustain Scotland's rail services. The costs and benefits to the Scottish Government and Scotland's rail industry have informed our approach and our decisions to replace ScotRail fleets are subject to robust business cases which evaluate the long term funding implications. Firstly, we know from the past five years that budgets are susceptible to external shocks which inevitably puts pressure on the scope of our investment. While we have identified fleet solutions for sustaining the performance of Scotland's railway it is important that we assess these against ongoing financial constraints. That is why we have developed a plan with deliverable solutions that are financially sustainable.

We know introducing battery-electric trains onto the rail network will require more infrastructure to support these fleets, but we will balance these against available budgets and the wider impact infrastructure interventions can have on passengers.

For example, the physical delivery of electrification must avoid impacting the operational sustainability of our rail services, by reducing the impact on passengers and freight customers as much as is practicable. Undertaking too much disruptive engineering work across the network at the same time would have significant revenue impacts and would diminish the attractiveness of rail.

Planning is already underway to provide depot and stabling facilities to support the introduction of new trains. We are also assessing the case for targeted timetable changes and infrastructure investment to enable and encourage more people onto rail, and to improve the capacity and capabilities of key freight routes. We will assess and appraise the case for these interventions alongside fleet replacement in light of available funding, however, the priority will remain the continued provision of a reliable rail service in Scotland.

Our plan to replace life-expiring rolling stock will yield long-term financial benefits for Scotland's railway as they are cheaper to operate and maintain compared with their diesel equivalents, particularly because spare parts for our ageing fleet are progressively becoming more difficult and expensive to source, and unplanned maintenance interventions take longer to execute.

Zero-emission trains will also be more punctual and reliable, creating an even more attractive rail service for our passengers which will increase overall demand.

Environmental Sustainability

The long-term plan to replace ScotRail's diesel trains with zero-emission alternatives will make our railway Net Zero by 2045 and build on our excellent record of providing a low carbon railway. We know that transport emissions would reduce simply by moving from a private car or lorry to a diesel train.

The Scottish Government is already taking action to help encourage modal shift from car to rail by permanently removing peak fares on ScotRail services. This will help existing passengers manage cost-of-living pressures, while also making rail travel more affordable and attractive for car users.

While attracting more passengers to the railway is important, it is essential that we retain them by having trains that they can rely on and that caters to their needs, comfort and convenience. Newer trains will be more reliable than the existing diesel fleet and will provide a better passenger experience through smoother, quieter and faster journeys. Modern trains will meet modern accessibility requirements, to ensure Scotland's railway continues to be a railway for everyone.

Failure to replace our trains will negatively impact the performance, reliability and attractiveness of rail. This could result in a rise in emissions if people are discouraged from using the railway and back into their cars, which would essentially invalidate the low-carbon credentials of rail travel. We cannot risk this as Scotland and the rest of the world continues to face the impacts of climate change.

We also have a responsibility to tackle the rail sector's own emissions. The only way to achieve this is through the phased removal of ScotRail's diesel trains which is the central focus of this plan.

Introducing zero-emission trains will eliminate greenhouse gas emissions from the network and support the drive to improve air quality. Outdoor air pollution is one of the greatest risks to public health, particularly in our industrialised and urban areas. While we recognise that rail emissions are considerably lower than other modes of transport it is important we avoid exacerbating the issue, by providing a resilient rail service that can attract people away from their cars.

Supporting Scotland's journey to Net Zero by 2045 requires a just transition—an imperative that holds particular significance for our railway. As we modernise the network and introduce new trains, the rail industry will increasingly depend on a skilled workforce, particularly in electrification. To meet this demand, we must collaborate with industry partners to champion skills development and training initiatives that both attract new talent and support our existing workforce.

We support the Rail Skills Academy, which is engaging young people in transformative projects such as the East Kilbride electrification and the Levenmouth rail link. This initiative seeks to address current skills gaps and promotes greater diversity within the sector, but also plays its part in delivering [the ambitions set out in Scotland's Just Transition Plan for Transport](#).

Lastly, we are beginning to see the impacts of a changing climate on our railway with extreme weather events becoming more common. This threatens the resilience of our rail services, and therefore, we have a responsibility to create a more climate resilient railway for our passengers and freight customers. The actions our rail delivery partners are taking to address this can be found in [Scotland's Railway Climate Ready Plan](#). Beyond this, [Scotland's Railway Climate Action Plan](#) outlines the actions our delivery partners are taking to reduce emissions from other sources and create a greener and more climate responsible railway.

Chapter 3: InterCity

Our InterCity rail services provide connections from Edinburgh and Glasgow to both Inverness and Aberdeen. These routes are strategically important for Scotland with 35% of Scotland's population being served by the rail corridor to Aberdeen. Inverness provides long distance connectivity to the rest of the UK for approximately 250,000 people and it is the gateway to the Highlands, Islands and the Far North.

In 2024/25 3.34 million journeys were made on our InterCity routes which generated £45 million in revenue. These routes provide access to employment, education and training opportunities, while also being a key driver for regional economic growth through tourism, cultural experiences and hospitality.

At almost 50 years old, the High-Speed Trains that run these InterCity services are the oldest trains in ScotRail's fleet. They have been a staple feature of the rail network in Great Britain and have transported passengers for many years. However, with the age of the fleet, it is becoming increasingly more expensive to keep them in service and they require growing amounts of unplanned maintenance. This is a problem that will only continue to grow and threaten ScotRail's ability to provide a reliable and financially sustainable InterCity service.



Our Plan

We need to replace the current High-Speed Trains that operate on our InterCity routes. In December 2024, we began the procurement to replace these trains.

We recognise that a significant extent of electrification infrastructure is required in order to introduce zero-emission trains on this route. We have appraised options and have identified two credible options. These are:

- the deployment of younger lower-emission diesel trains cascaded from elsewhere in Great Britain; or
- the procurement and introduction of new bi-mode electro-diesel trains.

A younger diesel transition fleet would bridge the gap between the existing diesel trains being removed from service and the supporting infrastructure being ready for the introduction of a new-build zero-emission fleet, allowing flexibility in the pace and extent of required electrification, reducing disruption to passengers and freight customers from engineering work and spreading the funding requirement over a longer period, while still reducing emissions and ensuring continuity of service. This approach would maintain the operational sustainability of our InterCity services.

A cascaded fleet would also have many benefits to our passengers, as the trains will have a more modern design and will contain features that are consistent with passengers' expectations of modern trains, such as passenger information systems inside and outside the train, wheelchair accessible toilets in both standard and first class, at-seat power and an improved Wi-Fi service.

A new fleet of bi-mode electro-diesel trains would enable the use of existing electrification from the point of introduction, whilst also ensuring the continuity of services whilst electrification is extended at an affordable and sustainable rate.

As with a cascaded fleet, a new bi-mode fleet would also have many benefits to our passengers and would result in emission reductions. It would contain features that are consistent with passengers' expectations of new trains, particularly in terms of accessibility and passenger information systems.

Long-term Vision

Our InterCity routes intertwine with wider parts of our network, however, given the vast distances between passenger destinations along with the importance of rail freight on these routes, electric services with sufficient electrification are the desired end-state for this part of the network.

We know that a significant amount of electrification will be required to allow electric services to run on these routes and these works will disrupt the performance of the network and will have an impact on both passengers and freight services.

This is why our current plan has identified the opportunity for a transition fleet. If a transition fleet is the outcome of the procurement exercise, it would allow the flexible delivery of electrification on the InterCity routes and provide time for the Scottish Government and the rail industry to respond to changes in funding availability and technology.

In the transition fleet scenario, the transition fleet would eventually be replaced by new build zero-emission trains. The timeline for the introduction of this zero-emission fleet will be dependent on the pace at which we sufficiently electrify these routes which will be driven by the availability of funding and technological maturity.

Whilst the focus of this plan is on ScotRail's own fleet the railway network is used by many cross-border passenger operators, charter operators and rail freight operators. All of these rail operators provide extensive economic, social, connectivity and environmental benefits to Scotland. As we work towards the long-term vision in replacing ScotRail train types, the industry will continue to closely engage with all rail users when planning infrastructure upgrades to ensure they can benefit from, and plan in, their own rolling stock well in advance of deployment.

Scotland has shown genuine leadership in supporting the rail freight sector and Network Rail and the wider industry have been empowered to focus on sustaining and growing the amount of freight on the rail network. As we replace ScotRail's fleet, and as we increase the extent of electrification, we will seek to increase opportunities for rail freight. These could include timetable changes and improvements to capability (gauge) and capacity to ensure that rail freight remains a credible and attractive option.

Chapter 4: Suburban

Our suburban rail services are largely concentrated to Scotland's central belt. They support our business, education and tourism sectors linking our two largest cities and also gateways to some of Scotland's most renowned historical landmarks. These services form a key part of our rail network, with travel on East and West suburban rail services accounting for circa three quarters of ScotRail's passenger volumes.

A majority of these routes have already been modernised and a number of our passenger services have benefitted from the introduction of the Class 385 ScotRail fleet in 2018 which allowed older fleets to be retired or cascaded to other parts of the network.

The line to Barrhead was the most recent addition to the electrified network, and our rolling programme of electrification continues through the East Kilbride enhancement project. With over £143 million of Scottish Government investment, passengers on this line will benefit from electrified services on this route from December 2025.

We recognise the importance of our suburban services and the need to sustain them. Taking this into consideration, we will replace the trains that run on the below routes:

- **Edinburgh via Fife to Perth and Dundee.**
- **The Borders route from Edinburgh to Tweedbank.**
- **The Glasgow inner suburban network.**

Collectively, this procurement will replace train fleets which carry 30% of Scotland's Passengers (Glasgow Inner Suburban 23% and Borders and Fife 7%).

Work is already underway in the East of Scotland to sufficiently electrify the line between Haymarket and Dalmeny to support the Fife electrification scheme.

In addition to this, we have been investing in delivering an electric power Feeder Station Programme. Phase 1 will see six feeder stations delivered at Tweedbank, Thornton, Portobello and Newton, with feeder stations already completed at Ferguslie and Currie. This programme will provide the power to facilitate the electrification of the Fife and Border routes along with maintaining the resilience of the electrical power required for the Scottish rail network.

Our Plan

We are investing £342 million to introduce new electric and battery-electric trains on the Glasgow inner suburban network and our Fife and Borders lines which will ensure the operational sustainability of these services.

Many of the electric trains that currently operate within the Strathclyde region are reaching the end of their life. To sustain our passenger services, we will replace these fleets with new electric trains on this part of the network.

We are also replacing the diesel trains that currently operate on the Fife and Borders routes by introducing new battery-electric trains to the network. This will be the first time this type of bi-mode train will operate on the Scottish rail network, and we will deliver sufficient electrification to allow these trains to enter into service. Electrifying these routes in this manner will reduce disruption to our passenger services whilst also reducing the capital costs of electrification. This has been made possible thanks to the recent advancements in technology.

These new trains will provide many of the same benefits as the InterCity fleet in terms of improved maintenance, reliability and environmental credentials.



Chapter 5: Rural

Scotland's transport network provides a lifeline for our rural communities and this undoubtedly extends to our railway. It is important that passengers from rural areas can continue to benefit from reliable, resilient, accessible and efficient rail services.

Beyond this our rural trains provide a front-row seat for passengers to admire Scotland's natural beauty from our mountainous regions to our dramatic coastlines these services truly highlight what Scotland has to offer. Every year tourists come to Scotland to see and explore these landscapes and our railway can provide a cleaner and convenient way for them to enjoy Scotland. Tourism is one of Scotland's most important industries and getting more people to visit our rural communities can help to boost local economies and growth.

Over time the diesel trains that operate on our rural routes will reach the end of their useful life and will be phased out from the network. This process will take time due to the geographical challenges of these lines and it may be the case that it is not a one size fits all approach in terms of our solutions for these routes. However, it is important that we develop a plan that can sustain these services while we explore the options for replacement trains.



Our Plan

As we progress with the replacement of our suburban fleet, this will free up the newer diesel trains that currently operate on the Fife and Borders routes. These Class 170s and 158s will be cascaded onto the rural network to replace the life-expiring diesel trains that currently operate on these lines. This will ensure that our rural communities continue to benefit from a reliable, resilient and more modern rail service.

We are keen to continue modernising our rural services, not just the way that the rolling stock operating on these routes is powered. It is important that our trains are equipped with the facilities that cater to passenger needs, particularly as there is overwhelming potential to capitalise on the rural leisure market.

In May 2025, ScotRail launched a trial which saw trains operating in the Scottish Highlands fitted with equipment that connects to satellite technology to improve the reliability of digital connectivity. Six class 158 trains that operate in the north of Scotland from Inverness to Wick, Thurso, Kyle of Lochalsh, and Aberdeen have been fitted with the equipment for the six-month trial. The trial seeks to deliver benefits to passengers on these routes, which include:

- Improved customer Wi-Fi.
- Improved GPS tracking of the trains to enable joined-up public transport journeys.
- Improved on-train journey information for customers.
- Live on-board CCTV access and download.

If the trial is successful, the same technology will be rolled out across our other rural lines. Innovative solutions such as this are essential for enhancing the passenger experience and supports the Scottish Government's commitment to provide better services to our rural communities.

Our rural lines attract passengers who travel for sport and leisure and in 2020 ScotRail introduced five Class 153s onto the West Highland Line. These 'Highland Explorer' trains were upgraded to support active travel by providing space for bikes, skis and other sporting equipment. Innovations such as this are key to fully realising the potential of our rural markets and will promote tourism, particularly for those interested in outdoor sport and support climate-friendly transportation.

We continue to consider the future of our rolling stock solutions for our rural routes, taking cognisance of technology development. While we do this, we will continue to work collaboratively with our delivery partners to ensure that we make best use of what we already have and continue to provide an attractive, resilient and modern service for our passengers.

Long-term Vision

Given the complex geographies of our rural routes, we have identified independently-powered trains as a potential solution to sustaining the future performance of our rural services. These trains could be introduced on the Far North Line, West Highland Lines, Kyle of Lochalsh Line as well as the Glasgow to Southwest and the Aberdeen to Inverness routes. There may not be a one size fits all approach to sustaining services on our rural routes and it is important that we take the time to assess all options against technological maturity and available budgets.

As it stands, the potential options for independently-powered trains include battery-only or hydrogen-powered trains, however, both are still technically and commercially immature and time is needed to allow the supply chain to scale up before these can be deployed on the network. Options will continue to be developed and will be appraised against benefits and costs, capabilities and maturity, to select solutions that meet service requirements effectively and efficiently.



Conclusion

Our strategy to replace ScotRail trains as they reach the end of their useable life is key to ensuring we have a railway that is resilient and reliable for our passengers both now and into the future. However, our rail system does not exist within a vacuum, and it is important that our approach to replacing our trains is pragmatic, considers passenger needs, emissions targets, technological maturity, infrastructure requirements and the financial landscape.

These factors have informed our approach to ensuring that we can continue to deliver rail services that are operationally, financially and environmentally sustainable. We have already commenced the procurement of our InterCity and Suburban fleets and this will help to sustain and modernise services on these routes for years to come, while also releasing newer diesel trains to make our rural services more attractive, resilient and reliable.

Our plan will help to deliver against the Scottish Government's legally binding emissions reduction targets by 2045, as we seek to introduce more zero-emission trains to our rail network. Our plan also directly supports wider ambitions to decarbonise Scotland's transport sector and is aligned with wider strategies across the public transport network.

The long-term plans for our InterCity and rural markets will continue to develop as technological advances are realised. We are taking action to ensure passengers continue to benefit from Scotland's railway and we will continue to work collaboratively with our rail delivery partners to attract more people onto our rail services.





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