

High Speed 2 – Market Insight Report

Rail Cluster Project

HS2 Market Insight Report – December 2021

This market insight report on HS2 was written to complement the virtual rail cluster event, “HS2 opportunities for Scottish businesses” that took place on the 6 December, 2021 in collaboration with the HS2 supply chain team. You can find a recording of the event on the rail cluster web portal - <https://www.scottishengineering.org.uk/railcluster/>.

The paper provides an overview of the HS2 programme, implications for the UK’s transport systems, the scale of the investment programme and the supply chain opportunities it brings, and links to key supplier resources. It reviews publicly available material and seeks to extract and summarise the most salient themes for the rail cluster SME community.

Rail Cluster Project

The Rail Cluster Builder project was awarded to Scottish Engineering in August 2020 and is an 18-month programme funded by Scottish Enterprise and supported by Transport Scotland. The purpose of the project is to facilitate connections for SMEs in the engineering and manufacturing sectors in Scotland seeking to diversify into the rail market or grow their existing business in rail.

The project is jointly funded by Scottish Enterprise and the 2014 – 2020 European Structural and Investment Fund through SPRITE (Scottish Programme for Research, Innovation and Technology Ecosystem). This is a programme which aims to improve the innovation performance of Scotland’s Small and Medium Sized Enterprises (SMEs) and stimulate greater coordination between stakeholders and partner organisations to help businesses capitalise on new economic and public sector innovation opportunities.



The roots of the rail cluster project lie in the Rail Services Decarbonisation Plan through which the Scottish Government aims to decarbonise passenger rail services in Scotland by 2035, ahead of the UK’s target of 2040. These targets present a real challenge to the industry and its

supply chain, requiring a massive uplift in the electrification programme, new efficient train fleets powered by electricity, battery and hydrogen to replace diesel, and innovations and efficiencies to deliver this transformation whilst keeping rail transport affordable for taxpayers and users.

This presents real opportunities for Scottish engineering and manufacturing SMEs with the potential creation of new skilled, sustainable employment. The Rail Cluster Builder supports



High Speed 2 – Market Insight Report

SMEs in establishing their presence in rail and is helping develop Scotland as a leader in the innovation and manufacture of net zero rail products and services. Decarbonisation of our railways is not the end of the story, but it is the key to unlocking the potential of the future ‘world ‘class rail transportation network envisaged by Government, offering greater connectivity and accessibility, better service, and faster travel times the length and breadth of the UK, and encouraging modal shift from road and air transport.

HS2 presents wide ranging opportunities for Scottish manufacturing and engineering companies to be a part of, due to the size and scale of this project. If your company would like to know where to start, contact the Rail Cluster via shonaclive@scottishengineering.org.uk and we will be glad to help.

1 What is HS2?

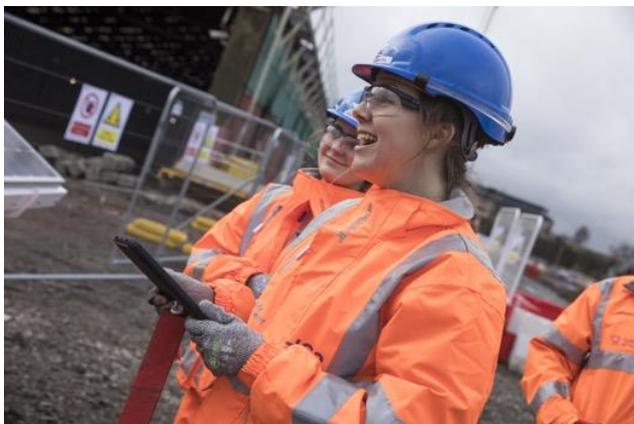


High Speed 2 (HS2) is a high speed railway that will create links between London and major cities in the Midlands and the North of England. It will increase capacity on congested railways and improve connections between our biggest cities and regions.

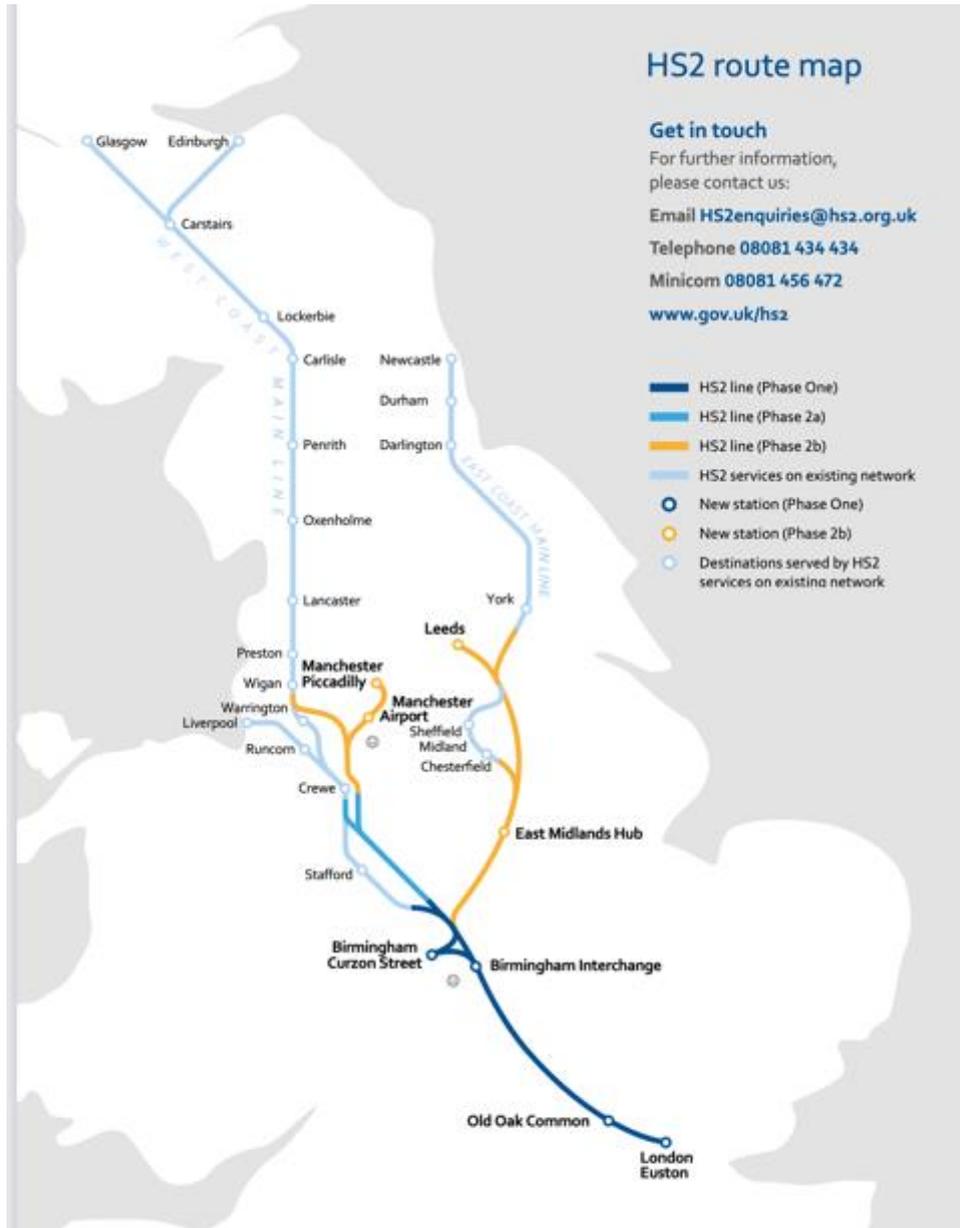
It will generate jobs, skills and economic growth. By providing new routes for intercity services, HS2 will free-up space on the existing rail network for new commuter,

regional and freight services and will relieve overcrowding and improve reliability for millions of people using Britain’s railways.

HS2 aims to create thousands of local jobs and apprenticeships.



High Speed 2 – Market Insight Report



The construction of the new railway was originally split into three phases:

- Phase 1 linking London and the West Midlands;
- Phase 2a linking the West Midlands and the North via Crewe; and
- Phase 2b completing the railway to Manchester, the East Midlands and the North has undergone a scope review alongside the Integrated Rail plan, see section 1.4 for detail.



High Speed 2 – Market Insight Report

1.1 Phase 1: London to the West Midlands

Phase One of HS2 includes 140 miles of a new high speed railway line constructed from London to the West Midlands, where it will re-join the existing West Coast Mainline. It has more miles of tunnels than Crossrail and a bridge longer than the Forth Rail Bridge. Services will travel onwards to places including Manchester, Glasgow, Liverpool, Preston and Wigan. Phase One will open between 2029 and 2033.

Tunnels - The London to West Midlands part of the HS2 route will have 64 miles of tunnels including:

- **Euston Tunnel** – a 4.5 mile tunnel that will take passengers from Euston station to Old Oak Common station.
- **Northolt Tunnel** – an 8.4 mile tunnel under London that will take passengers from Old Oak Common to West Ruislip.
- **Chiltern Tunnel** – the longest and deepest tunnel will be the Chiltern tunnel measuring 10 miles (16km) long and will go as deep as 90 metres.
- **Long Itchington Wood Tunnel** – a short 1 mile long tunnel under Long Itchington Wood, preserving this ancient woodland.
- **Bromford Tunnel** – a 3.5 mile twin-bore tunnel situated just outside Birmingham.

Stations - HS2 will build four new stations as part of construction of the route between London and the West Midlands at:

- Curzon Street Station in Birmingham
- Interchange Station in Solihull
- Old Oak Common Station in West London
- Euston Station in London



Viaducts and bridges

- Over 500 bridging structures will be constructed under and over the route.
- Over 50 viaducts measuring about 9 miles (15km) in length will be built.
- The UK’s longest viaduct will cross the Colne Valley. It will be over two miles (3.4km) long, which is 0.6 miles longer than the Forth Rail Bridge.
- Delta Junction outside Birmingham is 5.9 miles (9.5km) long and consists of 7 bridges and viaducts spanning 3 rail lines, 8 roads, 5 rivers and canals and the M6.



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Cuttings and embankments

- Over 70 cuttings will be excavated, measuring over 44 miles (72km) in total.
- The longest is the Calvert Cutting at 2.5 miles (4.1km) with a maximum depth of 9.7m.
- The deepest is Lower Thorpe Cutting at 30.5m deep.
- Over 110 embankments, measuring about 38 miles (61km) long, will be constructed.
- The longest embankment will be Grendon Underwood at 1.8 miles (3km) long.

1.2 Phase 2a: West Midlands to Crewe



The Phase 2a line will run from the northern end of Phase 1 at Fradley in the West Midlands to Crewe in Cheshire. These services will join the existing rail network to create direct services to places including Liverpool, Manchester, Preston, Carlisle and Glasgow. Crewe is also the station for connections to North Wales and Shrewsbury. It will be built at the same time as the line between London and the West Midlands. High speed services will begin operating between London, Birmingham and Crewe between 2029 and 2033.

Facts and figures about Phase 2a

Building Phase 2a will support 6,500 jobs. Almost 1,500 more than previously forecast.

The infrastructure will consist of:

- 17 viaducts
- 65 bridges
- 36 embankments
- 26 cuttings
- 1 maintenance base
- 2 tunnels

Journey time benefits

Extending the benefits of HS2 further north with Phase 2a unlocks significant journey time savings for towns and cities on and beyond the high speed network. When finished the journey time between Crewe and London Euston will be 56 minutes. The current fastest journey time is 1 hour 30 minutes.



High Speed 2 – Market Insight Report

West Coast Mainline benefits

Phase 2a unlocks more rail capacity on the West Coast mainline. It will carry six long distance high speed services per hour, freeing up the West Coast Mainline between Lichfield and Crewe. This could see services rise from hourly to half-hourly or better between Crewe and Stoke-on-Trent to Nuneaton, Tamworth, Lichfield and Rugeley, as well as more services from Crewe to Runcorn and Liverpool, as well as via Crewe between North Wales, Chester and London.

Environmental mitigation

As part of the Phase 2a scheme, 78 hectares of woodland will be planted. Over 13.5 hectares of existing ancient woodland will be boosted by freeing it of invasive species such as Rhododendron, and Japanese knotweed that harm and damage native trees and shrubs. In addition, the densest areas of trees will be thinned to help the strongest ones to grow faster, which helps to promote greater woodland diversity.

1.3 HS2 Phase 2b: Crewe to Manchester, West Midlands to Leeds

HS2 Phase 2b will see the high-speed rail network extended from Crewe to Manchester, serving new stations at Manchester Airport and Manchester Piccadilly. The West Midlands to Leeds section is under review and part of the Integrated Rail Plan described below.

1.4 Integrated Rail Plan

The Integrated Rail Plan, whilst not additional to HS2 remains relevant to integration with it, was published on 18 November 2021 and sets out the Government’s proposals to transform the rail network in the North and Midlands.

The plan outlines how major rail projects, including the currently planned section of HS2 Phase 2b, Northern Powerhouse Rail and Midlands Rail Hub, will be delivered so that communities, towns and cities across the North and Midlands are better connected with more frequent, reliable and greener services and faster journey times.

The Government’s Integrated Rail Plan sets out the following plans:

- Subject to consultation, a stretch of new high-speed line will be built from the West Midlands to the East Midlands, based largely on the existing safeguarded route, connecting to the existing railway line near East Midlands Parkway Station (close to East Midlands Airport).
- The Government will accelerate transport improvements at Toton, such as a station for local/regional services, with delivery subject to significant private sector investment – on a 50:50 match-funded basis with the taxpayer – coming forward at the site and developer contributions.



High Speed 2 – Market Insight Report

- Complete electrification of the Midland Mainline, which will allow HS2 trains to serve Nottingham, Derby and Sheffield.
- Taking forward a package of upgrades to the East Coast Mainline (ECML), delivering faster and more reliable services to Leeds, York, Newcastle and other places on the ECML.
- The Government is also undertaking further work to look at the most effective way to run HS2 trains to Leeds, including assessing capacity at Leeds station.

The Government will continue to work on the implementation of the Integrated Rail Plan and anticipate providing further information as soon as this is available.

In the meantime, the Government has asked HS2 Ltd to pause work on the West Midlands to Leeds section of HS2 Phase 2b.

2 Recent HS2 contract award for the manufacture of high speed trains



HS2 Ltd confirmed that a Hitachi/Alstom JV has been awarded the contracts to build Britain's next generation of high speed trains at their factories in Derby and County Durham

The landmark contracts – worth around £2bn – will see the JV design, build and maintain a fleet of 54 state-of-the-art high speed trains that will operate on HS2 – the new high-speed railway being built

between London, the West Midlands and Crewe.

Capable of speeds of up to 225mph (360km/h), the fully electric trains will also run on the existing network to places such as Glasgow, Liverpool, Manchester and the North West. Building on the latest technology from the Japanese Shinkansen ‘bullet train’ and European high-speed network, they will be some of the fastest, quietest and most energy efficient high-speed trains operating anywhere in the world.

The design, manufacture, assembly, and testing of the new trains will be shared between Hitachi Rail and Alstom.

- The first stages including vehicle body assembly and initial fit-out will be done at Hitachi Rail’s facility at Newton Aycliffe, County Durham; and
- The second stage of fit out and testing will be done at Alstom’s Litchurch Lane factory in Derby.

In another major boost for train-building in the UK, all the bogies (which house the wheelsets) will both be assembled and maintained at Alstom’s Crewe facility – the first time since 2004 that both jobs have been done in the UK.



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Hitachi Rail has recently completed a £8.5m investment in new welding and painting facilities at Newton Aycliffe where the 432 HS2 bodysells will be manufactured.

The first train is expected to roll off the production line around 2027. Following a rigorous process of testing and commissioning, the first passengers are expected to be carried between 2029 and 2033.

A recent study commissioned by Hitachi/Alstom JV estimates that the award could generate benefits of £157m per year across the UK and support 2,500 jobs including opportunities for apprenticeships and graduates.

Designed to be fully accessible, the interior layout will be decided following a two and a half year collaborative design process involving HS2 Ltd, the Department for Transport and the West Coast Partnership, the operator of the trains when they first come into service.

Serving destinations such as Liverpool, Glasgow, Birmingham, and London, HS2 trains will operate seamlessly between HS2 and the existing rail network reducing journey times across the UK. Each train will be around 200m long, with the option to couple two units together to create a 400m long train with up to 1,100 seats.

The train will also benefit from Hitachi Rail’s pioneering low noise pantograph – the arm which collects power from the overhead wires. Developed in Japan, this technology will make it quieter than comparable high speed train and use regenerative braking to boost energy efficiency.

It will also be 15 per cent lighter and offer 30 per cent more seats than comparable high-speed trains in Europe – such as the Italian ETR1000 built by JV between Hitachi Rail and Alstom.

Alongside, design, manufacturing and testing, the contracts also included 12 years of maintenance which could be extended in the future to cover the estimated 35-year life of the rolling stock. The fleet will be maintained at a new maintenance depot being built by HS2 Ltd at Washwood Heath on the outskirts of Birmingham, creating jobs and additional apprenticeship opportunities.

It is the Rail Cluster’s intention to engage with the Hitachi/Alstom JV to secure supply chain opportunity events for manufacturers in Scotland, and any manufacturers interested in such events are encouraged to register at www.scottishengineering.org.uk/railcluster



High Speed 2 – Market Insight Report

3 Why HS2?



HS2 is a state-of-the-art, high-speed line critical for the UK's low carbon transport future. It will provide much-needed rail capacity across the country, and is integral to rail projects in the North and Midlands.

3.1 Carbon – putting Britain on track to a net zero carbon future

In June 2019, the UK became the first major economy in the world to pass laws to end its contribution to global climate change by 2050. As one of the most sustainable high speed railways in the world, HS2 will support the UK in making the transition to a net zero carbon economy. It will minimise carbon emissions as it is built, it will deliver low carbon journeys and cut carbon emissions from other forms of transport.

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3.1.1. HS2 journeys will be low carbon

Rail is by far the most carbon efficient transport system available.

HS2 will be the backbone of the national rail network, delivering better connections between eight out of ten of Britain's largest cities, more than doubling the number of seats available from Euston in peak hours, and carrying over 300,000 people a day or 100 million passengers a year

3.1.2 Powering HS2 trains

HS2 trains will be highly energy efficient and powered by a grid that uses increasing amounts of energy from zero carbon sources, for example renewable energy from solar and wind generation. In future, with the grid supplying 100% zero carbon energy, journeys on HS2 will be zero carbon.

3.1.3 Environmentally Responsible Travel

HS2 will be a cleaner, greener way to travel, offering some of the lowest carbon emissions per passenger kilometre, significantly less than cars and domestic air travel.



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3.1.4 HS2 will reduce carbon emissions from other modes of transport

Cars

In 2017, road traffic accounted for 91% of transport emissions. In the same year cars, taxis and light vans were responsible for 70% of road transport emissions.

Car miles grew from 255 billion vehicle miles per year in 1990 to 328 billion vehicle miles in 2018, a rise of 28%.

By moving high speed trains on to a new, dedicated intercity line, HS2 will free up space on the existing rail network to run more local and regional commuter trains, thereby providing a viable alternative transport option displacing private and light road traffic.

Planes

HS2 is a cleaner, greener alternative to domestic aviation.

Not all aviation is international. HS2 can play a major role in reducing domestic flights between Britain’s core cities. The network will serve over 25 stations connecting around 30 million people and significantly improve connectivity from Scotland, through to the Midlands and the South East.

People are more likely to make the shift from plane to train if rail journeys are faster, frequent and more reliable, with a reduced carbon footprint.

Lorries

Heavy goods vehicles (HGVs) cause congestion on roads, emit significant amounts of carbon and impact air quality. By moving high speed trains onto a new, dedicated intercity line, HS2 will free up space on the existing rail network to carry more goods via freight trains. According to the Rail Delivery Group, every freight train could take up to 76 lorries off the road. Transporting freight by rail reduces carbon emissions by 76% compared to road haulage. HS2 will enable a shift from road freight to rail freight, decarbonising the UK transport sector and supporting the transition to net-zero carbon emissions by 2050.



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3.1.5 HS2 stations will be energy efficient and low carbon in operation

HS2's stations will be amongst the most sustainable stations in the world. The four stations that will be built between London and Crewe will be designed to utilise renewable technologies to minimise carbon.

HS2 will maximise energy efficiency in its stations and buildings

In order to deliver a sustainable railway and associated buildings, energy demand and consumption will be minimised.

As part of HS2's commitment to managing its carbon footprint, HS2 has set ambitious targets for its supply chain to minimise the whole life carbon emissions of its assets including buildings.

3.2 Capacity – helping reduce overcrowding

Much of the UK's rail network was built over 100 years ago. Rail travel has more than doubled over the last 20 years. Network Rail invests more than £130 million in improvements for passengers each week, 22% of the UK's entire infrastructure spend. Over the past 10 years, rail infrastructure investment has amounted to more than £74 billion, but this can't provide all the additional capacity required on the network.

Further upgrades to current lines would cause significant disruption for passengers and lineside communities, and would deliver a fraction of the capacity as a new railway line. It is estimated that upgrading existing lines instead of building the first phase of HS2 would result in 2,700 weekend closures over 15 years.

3.2.1 How HS2 creates more rail capacity

As a brand new railway line, HS2 is the best option for taking the pressure off the existing network. It adds extra capacity where it is needed most. Building HS2 frees up space on the existing railway by placing long distance services on their own pair of tracks. Once HS2 is operating, services can run closer together, meaning there can be more rush hour trains, helping to relieve overcrowding.



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Once the full network is operational, HS2 trains are expected to carry over 300,000 passengers a day. HS2 aims to be future proofed, by making sure the network can grow with increased demand.

When complete, HS2 will add greater capacity along the UK’s current main North-South rail routes; West Coast, East Coast and Midland main lines. This means more train services across the country, more seats for passengers and fewer delays.

3.2.2 More capacity for rail freight

By putting direct inter-city services on dedicated high-speed lines, HS2 will create more space on the existing railway for rail freight services. Rail freight has a key role to play in the low carbon economy too, as rail produces 76 per cent less carbon dioxide emissions than the equivalent road journey. One freight train can carry enough material to build 30 houses, and in London, over 40 per cent of construction materials are delivered by rail – and there is demand to move more.

3.2.3 Fewer lorries



HS2 will also take hundreds of thousands of lorries off the roads every year as more freight can travel by rail. This will make our motorways safer, improve air quality and help reduce carbon emissions. Each freight train removes up

to 76 lorries from our roads, which currently amounts to 1.5 billion fewer kilometres a year by heavy goods vehicles, or more than seven million lorry journeys.

3.3 Connectivity – catalysing growth

3.3.1 Connecting cities

HS2 trains will serve over 25 stations including eight of Britain’s ten largest cities, also enabling both Northern Powerhouse Rail and the Midlands Rail Hub to further connect the cities of the Midlands and the North.

3.3.2 Better connections mean growth and jobs

Station cities are already planning for growth and investment off the back of the arrival of high speed services. HS2 growth plans around the country account for around half a million jobs.



High Speed 2 – Market Insight Report



Solihull's new Interchange station will support 70,000 jobs.

3.3.3 Better connections will boost tourism and leisure

Better transport connections which bring the country closer together will be a huge boost to the tourism industry, worth over £200 billion to the economy every year and responsible for supporting millions of jobs nationwide.

4 HS2 Ltd

HS2 Ltd was set up by the UK Government to develop, build and operate HS2. It is a non-departmental public body funded by the Secretary of State for Transport and sponsored by the Department for Transport.



HS2 is one of the largest and most complex infrastructure projects ever undertaken in the UK and requires a bespoke delivery organisation to manage the planning, design and integration of the component parts of the new high-speed railway.

HS2 Ltd is responsible for procuring and bringing together a supply chain of designers and contractors to deliver billions of pounds worth of contracts, acquiring an



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unprecedented volume of land and property, in line with the Compensation Code, to build, maintain and operate the railway.

The company must demonstrate compliance with the required technical, safety and environmental standards at all times.

4.1 HS2 strategic goals

 <p>Catalyst for growth Be a catalyst for sustained and balanced economic growth across the UK.</p>	 <p>Capacity & connectivity Add capacity and connectivity as part of a 21st century integrated transport system.</p>	 <p>Value for money Deliver value to the UK taxpayer and passenger.</p>	 <p>Customer experience Set new standards in customer experience.</p>
 <p>Skills & employment Create opportunities for skills and employment.</p>	 <p>Health, safety & security standards Set new standards in health, safety and security in the construction and operation of the railway.</p>	 <p>Sustainable & a good neighbour Create an environmentally sustainable solution and be a good neighbour to local communities.</p>	

4.2 A responsible business

HS2 Ltd is committed to operating as a responsible business; it is the most significant economic regeneration project in Britain for decades, aiming to help every region of the UK reach its economic potential, create jobs and opportunities, increase productivity and help Britain compete on the global stage.

Local economic plans based around HS2 show almost 500,000 jobs and nearly 90,000 new homes resulting from the improved connectivity these services will provide across the country.



High Speed 2 – Market Insight Report

4.5.1 Skills, employment and education



HS2 provides opportunity to create new jobs, up-skill the existing workforce and create a brand new industry in high speed rail for Britain to export around the world. Its Skills, Employment and Education activities are crucial to achieve this. They will leave a legacy of a highly skilled and diverse workforce able to deliver HS2 and future infrastructure projects. At

peak construction, 30,000 people will be needed to design and build the railway.

These job opportunities will be across the country, not just along the HS2 route. HS2 will also support some 2,000 apprenticeships during the life of the project. Since 2017, 650 people have already started an apprenticeship on the HS2 project either in the supply chain or with HS2 Ltd.

4.5.2 Equality, diversity and inclusion (EDI)

Making sure HS2 is inclusive and accessible to everyone is central to the way the team works. As part of the design phase, the team is working with train users to help build a railway that is accessible and inclusive to all. Work on equality, diversity & inclusion is organised under four themes: organisation, supply chain, communities, and design and operation.

Because of its approach to EDI, HS2 Ltd, is surpassing industry averages for gender, ethnic and disability diversity. It is aiming for 60% of its supply chain to be with SME firms. Currently, over 70% of contracts are with SMEs.

HS2 Ltd has gained recognition as a Level 3 Disability Confident Leader from the Department for Work & Pensions. The Disability Confident scheme aims to help employers successfully employ and retain disabled people and those with health conditions.

HS2 Ltd has won many awards for its EDI work including:

- Public Sector Overall Winner at the ENEI Awards 2018
- The Top Employer Award at the Women in Rail Awards 2018
- The Corporate Champions Award at the 2018 REACH Society Awards, for work inspiring young BAME people into careers in infrastructure
- RIDI award in Disability Confident Category 2019
- Armed Forces Covenant Defence Employer Recognition Scheme silver award 2018/19



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- MSDUK and ENEI Inclusive Procurement Awards 2017 & 2018 which recognise HS2’s UK leading approach to inclusive procurement and supplier diversity
- Gold Award TIDE Benchmarking 2018
- VERCIDA No 1 Gender Inclusive Employer Award 2019
- The Clear Assured Platinum Standard, the only organisation in the UK to have reached this.

4.5.3 Race at Work Charter

HS2 has shown its commitment to racial equality by signing up to Business in the Community’s Race at Work Charter, an initiative designed to improve employment outcomes for black, Asian and minority ethnic employees in the UK.

4.6 Health and wellbeing

HS2 Ltd’s aim is to create a new standard of safety through its ‘safe at heart’ culture where no one gets hurt. This prioritises the health and wellbeing of those who build, operate, use and host HS2 services and infrastructure.

Building HS2 will affect the lives of thousands of people along the line of route. In partnership with its contractors, the team is working hard to look after the public who live and work near to its sites. The health and quality of life of local people is being protected by limiting noise, air pollution and traffic congestion.

4.7 Responsible business and the environment

The aim of HS2 is to achieve no net loss in biodiversity and minimising all emissions that contribute to climate change by designing and operating HS2 with low carbon material. The target is to reduce emissions by 50% during construction of the railway in civils, stations and rail systems. A target has also been set to reduce carbon emissions from office, estate and domestic travel by at least 50% by 2027.

4.7.1 Protecting and enhancing the environment



HS2 will deliver low carbon, long-distance journeys that will be supported by low-carbon energy. It will help the UK to tackle climate change and the drive to reach net zero carbon emissions. The most effective way to cut transport carbon emissions in the UK and to improve air quality is to invest in rail, including HS2. HS2 will



High Speed 2 – Market Insight Report

help to get more people out of their cars, off domestic flights and take lorries off congested roads.

Its aim is to protect the environment wherever possible, and to do more than just mitigate in the areas where construction of the railway is taking place. In many places, the aim is to leave behind richer, more diverse and better connected wildlife habitats.

In June 2018 an announcement was made that alongside the route, a green corridor will be created, protecting and enhancing wildlife habitats and creating a positive legacy for communities as well as integrating the railway into the landscape.

Seven million trees and shrubs will be planted along the length of the route, creating woodlands, new pools and ponds.

4.7.2 HS2 Net Zero Carbon Plan

HS2 has just issued a Net Zero Carbon Plan (January 2022) in which it explains the work that has already been undertaken so far and what is being currently done. It also maps out its plans for its ‘destination net zero’ journey by 2035.

A copy of the Plan can be found here - [HS2 Net Zero Carbon Plan](#).

5 HS2 and Scotland

HS2 will cut journey times between Glasgow and London and Birmingham by up to an hour, with Glasgow and Edinburgh acting as gateways to the rest of Scotland. The Scottish Government is acting to ensure the benefits are spread throughout Scotland, and a consultation has been launched on proposals for a train stabling facility in the Dumfries and Galloway area to stable, clean and maintain HS2 trains serving Scotland and North West England. When fully operational, this facility would provide 100 skilled and unskilled jobs.

5.1 HS2 ambition

The UK and Scottish governments share the ultimate ambition of three-hour rail journeys between London and Scotland’s Central Belt.

The Scottish Government, Transport Scotland, Network Rail and HS2 are working together on options for infrastructure improvements between 2019 and 2026 that will increase capacity, cut journey times and improve reliability on routes between Scotland and England.



High Speed 2 – Market Insight Report

5.2 25 Scottish companies have already won work with HS2

The University of Dundee is already working with HS2 to make sure the project has enough qualified workers during construction. Whole Life Consultants Limited (WLC Ltd) has led on the delivery of a report to forecast the labour and skills requirements for the HS2 high-speed rail project. The document also assesses the occupations where skills gaps will be more prevalent as the project progresses.

WLC Ltd led a consortium of skills forecasting experts, including the National Skills Academy for Rail.

For more information - <https://www.dundee.ac.uk/stories/university-spinout-supports-hs2-jobs-forecasting>

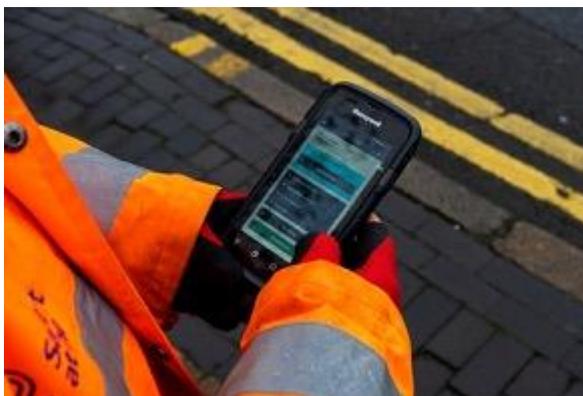
Read the report here - [HS2 labour and skills demand and supply forecasting and analysis.](#)

5.3 Scottish case studies



Based in Glasgow, GAP Group supplies leading edge solar and hydrogen powered cabins being used on HS2 construction sites at the southern end of the route. Developed with manufacturing partner AJC Trailers, the EasyCabin EcoSmart ZERO product is the world’s first solar and hydrogen

powered welfare unit, combining solar and hydrogen power to eliminate carbon emissions from construction sites, and is set to be rolled out further across the HS2 project.



PODFather is an Edinburgh-based SME, employing 40 people from the local area. The company developed a fully automated system to track and monitor deliveries, allowing suppliers to book them in on a digital system, negating the need for spreadsheets and printed paper tickets, and reducing time lost waiting for processing as bookings can be managed efficiently in real time.

Working on the HS2 project has meant that they have been able to create new roles and sustain employment levels through the Covid-19 pandemic. The company became engaged in the HS2 project in 2013 and attended events designed to support businesses interested in working on the project such as ‘Meet the Contractor’ events.



High Speed 2 – Market Insight Report

6 Supply Chain Engagement

The aim of HS2 is to build a diverse, world-class supply chain with SMEs at its heart. Thousands of opportunities are being created throughout the supply chain, spanning multiple business sectors and suitable for businesses of all sizes. Many of the tier 1 contracts for the key categories have been awarded for Phase One, in turn giving rise to thousands of smaller sub-contract opportunities.

There is an entire section on the HS2 website dedicated to supply chain engagement - <https://www.hs2.org.uk/supply-chain/>. Information includes a Supplier Guide, Case Studies, Supply Chain Maps, FAQs and Technical documents including scope, policy and specifications.

These are the categories of work.

					
Design and services Includes development partners, professional services and design services.	Civil engineering Enabling Works and Main Works which include: archaeology, ecology, demolition, earthworks (tunnels, cuttings and embankments), drainage, bridges, viaducts, and other structures.	Stations Phase One Euston Old Oak Common Birmingham Interchange Curzon Street Phase Two East Midlands Hub Manchester Airport Manchester Piccadilly Leeds	Railway systems Includes track, overhead catenary, telecommunications, traction power, signalling and mechanical and electrical systems	Rolling stock Rolling stock for Phase One including initial maintenance. Rolling stock for Phase Two will follow at a later stage.	Corporate procurement Includes commercial services, assurance & regulatory services and a diverse range of direct business support contracts.

6.1 Direct opportunities

By registering on the e-procurement portal, companies can respond to direct HS2 tender opportunities as they arise: <https://hs2.bravosolution.co.uk>.



High Speed 2 – Market Insight Report

6.2 Supply Chain opportunities



For each category, HS2 Ltd has bought, or is buying, a relatively small number of high-value, direct contracts. These few large contracts are now generating significant supply chain opportunities, the number of which is likely to multiply through each tier of the supply chain. HS2 Ltd’s direct/ tier 1 suppliers will source these lower tier contracts directly. To maximise opportunities for suppliers, HS2 tier 1 contractors are mandated to use **CompeteFor** - <https://www.competefor.com/hs2/> - to advertise all opportunities, and to cascade this requirement down through their own supply chains.

6.3 Who are the main HS2 suppliers?

Main works and station contractors



BBV Joint Venture
Main works between North Warwickshire, Birmingham and Staffordshire



EKFB Joint Venture
Main works from North Warwickshire down to Chiltern Tunnel north portal



Align Joint Venture
Chiltern Tunnel and Colne Valley Viaduct



SCS Railways Joint Venture
Main works within Greater London (mostly tunnel)



BBVS Joint Venture
Old Oak Common Station construction



MACE/Dragados
Euston & Curzon St Station construction



High Speed 2 – Market Insight Report

6.4 Supply chain guidance

<p>View HS2 supplier guidance</p>  <p>www.hs2.org.uk</p>	<p>Register on CompeteFor</p>  <p>www.CompeteFor.com/hs2</p>	<p>Use free industry resources</p>  <p>www.supplychainschool.co.uk</p>	<p>Work with business organisations</p>  <p>FSB, ACAS, Scottish Enterprise etc</p>	<p>Contact us directly</p>  <p>scc@hs2.org.uk</p>
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HS2 presents wide ranging opportunities for Scottish manufacturing and engineering companies to be a part of, due to the size and scale of this project. If your company would like to know where to start, contact the Rail Cluster via shonaclive@scottishengineering.org.uk and we will be glad to help.

7 Surveys and Reports

7.1 HSRG/RIA SME Supplier Survey Findings

In March 2021, the High Speed Rail Group (HSRG) and Railway Industry Association (RIA) created and issued a joint survey to SMEs in the rail supply chain, inviting them to share their opinions and expectations of HS2.

This survey was divided into two sections; one for HS2 suppliers and one for non-HS2 suppliers. Suppliers were asked about how they expected HS2 to impact their businesses regarding turnover, staffing, and skills. Non-suppliers were asked about any barriers faced to applying for HS2 contracts, the expected impact on their business should they win a contract, and opinions on the Eastern Leg.

A full copy of the report can be found here - [HSRG RIA Supplier Survey Findings](#).

Here is a summary of the key findings:

7.1.1 Suppliers

- 63% of suppliers saying that they have experienced an increase in turnover as a result of their work on HS2
- 61.5% have taken on more staff



High Speed 2 – Market Insight Report

- 38.5% have hired more apprentices
- 69.2% have invested more in the skills
- 82.7% of suppliers expect to see growth in their company as a direct consequence of HS2
- 96.1% believe that HS2 will be very or somewhat important for the future of their company
- Suppliers anticipated a negative impact of their business should the West Midlands to Leeds portion be cancelled
- 67.2% of respondents said they hoped to win a contract to work on the eastern leg of HS2

7.1.2. Non HS2 suppliers

- Non-HS2 suppliers had primarily not bid for HS2 contract with 65% not having done so compared with 27.9% who had
- More than half of non-suppliers who responded said that they faced barriers to becoming a supplier for HS2.
- Despite barriers, 83.6% intend to bid for HS2 contracts in the future with respondents saying that winning a contract would boost turnover (88.5%), they could hire more staff (82%), invest more in the skills of their workforce (62.3%) and hire more apprentices (57.4%)
- Non HS2 suppliers were just as optimistic as suppliers about the important of winning an HS2 contract with 90.2% saying that doing so was very important or somewhat important.

7.2 Learning from Major Projects

RIA also published a report in November 2021 on Learning from Major Projects which has a section on Innovation and Contribution of SMEs with numerous Case Studies.

[https://www.riagb.org.uk/RIA/Newsroom/Stories/Learning from Major Projects.aspx](https://www.riagb.org.uk/RIA/Newsroom/Stories/Learning_from_Major_Projects.aspx).



High Speed 2 – Market Insight Report

8 Summary



HS2 is a once-in-a-generation opportunity to better connect UK towns and cities, regenerate communities and make a step change in the Government’s commitment to becoming Carbon Zero.

Its aim is to help boost the economy and that trend is expected to continue into the next decade and beyond. Already over 2,400 businesses are working on HS2, 97% of them are UK based and 70% are SMEs and there is much more to come.

Construction of Birmingham – London phase of the railway is expected to create some 400,000 contract opportunities and businesses in Scotland are well placed to take advantage.

