

Hitachi Bombardier Joint Venture

Rail investment – a rolling stock perspective

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UK Transport Strategy

DfT: UK transport investment strategy, moving Britain ahead – July 2017

High performing infrastructure can enable delivery of the Industrial Strategy. By maintaining and upgrading our transport infrastructure – an integrated network that underpins not only our daily lives but our economy too – we can connect communities and businesses and help deliver balanced growth across the country.

Major projects - importance for the UK manufacturing and transport strategy

- Investment supports UK rolling stock manufacturing – a sector where Britain has historically and consistently demonstrated technology leadership and has the core skills to continue to drive global innovation
- Expands regional supply chains to help boost local economies
- Opportunities for innovation leading to increased scope for new technology involving specialist SMEs and educational sector (high speed rail college and universities)
- Training the next generation of engineers with a strong focus on diversity and inclusion to attract the new talent the rail industry needs
- Has the potential to create a transformational experience for passengers and to improve connectivity and capacity
- The development and delivery of flagship technology can create an exportable supply and skills base across the UK in high speed rail engineering and innovation

Hitachi and Bombardier have joined forces to design the next generation of high speed trains



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Where? Joint office opened at Millennium Point, Birmingham on Sep 2018

Who? A core team of up to 50 engineers, designers and sector specialists linked to both companies global capacity in Italy, Germany and Japan.



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Hitachi Rail's Global High Speed Rail Expertise



Japan: Series E6 (320km/h)



Japan: Fastech 360 (360km/h)



Japan: Series E5 (320km/h)



Japan: Series N700 (300km/h)



Japan: Series 800 (285km/h)



Japan: Series 500 (300km/h)



Taiwan series 700T (300km/h)

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Bombardier's Global High Speed Rail Expertise



V300ZEFIRO (Italy)



CRH380D (China)



CRH1A-250 (China)



CRH-1 (China)



ICx (Germany)



ICE 3 (Germany)



ICE 1 & 2 (Germany)



ETR 500 (Italy)



AVE S-102 (Spain)



AVE S-130 (Spain)



TGV Duplex / Thalys (France/Bel)



Acela Express (US)

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Working together in Italy



- Jointly - proven collaboration on flagship high speed rail project in Italy – The Frecciarossa 1000, aka the Red Arrow
- Builds on our respective global high speed pedigree (Shinkansen and Zefiro)
- Has transformed connectivity between important Italian cities with high passenger comfort: fastest service train in Europe



FRECCIAROSSA trains cross Italy reaching the maximum speed of 300 km/h, entering the heart of major cities, shortening distances.

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Bombardier Transportation in the UK

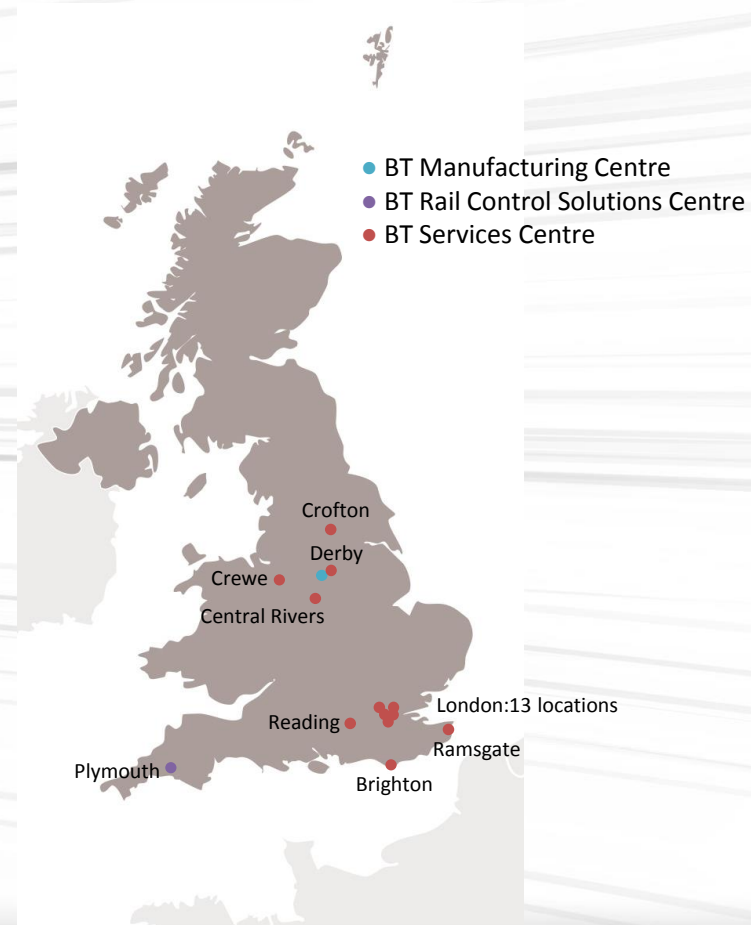
Bombardier is a leading solution provider to the UK's rail industry:

- the only company present in the UK who designs, builds, tests and maintains trains – including for export
- the trains our Services teams maintain keep Britain moving on one of the busiest and most complex rail networks in the world
- thriving Rail Control Solutions engineering and manufacturing business.

BT has supplied over 60% of the current fleet in the UK and has a total of 4,000 employees

Maintenance of >3,000 vehicles across the UK

Invested in ex-British Rail sites such as Derby, Crewe, Willesden and Ilford + new, cutting-edge facilities such as Central Rivers, New Cross Gate, Old Oak Common and Reading



Bombardier in Derby: 180 years of train making



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Hitachi Rail in the UK – our new manufacturing facility in the North East opened in 2015



Along with Bombardier we are delivering around 80% of the new fleets coming into service in the UK

Delivering for GWR, WoE, TPE, Scotrail and LNER - offering passengers more seats, shorter journeys and modern on-board technology - connecting cities across UK

Hitachi's maintenance teams will be responsible for 281 trains running across Britain by 2020, moving thousands of passengers reliably every single day.



We are bringing new digital solutions to the UK to make the railway more efficient

Hitachi's contribution goes beyond UK rail. We are a positive story for the economy, jobs and growth, both in the North East and the wider UK

Hitachi is committed to building trains in the UK: We have invested over £370 million so far at our locations across the country

We use British suppliers wherever we can and in the last few years (to 2017) we spent £628m with our supply chain of 1166 businesses spread all across the UK

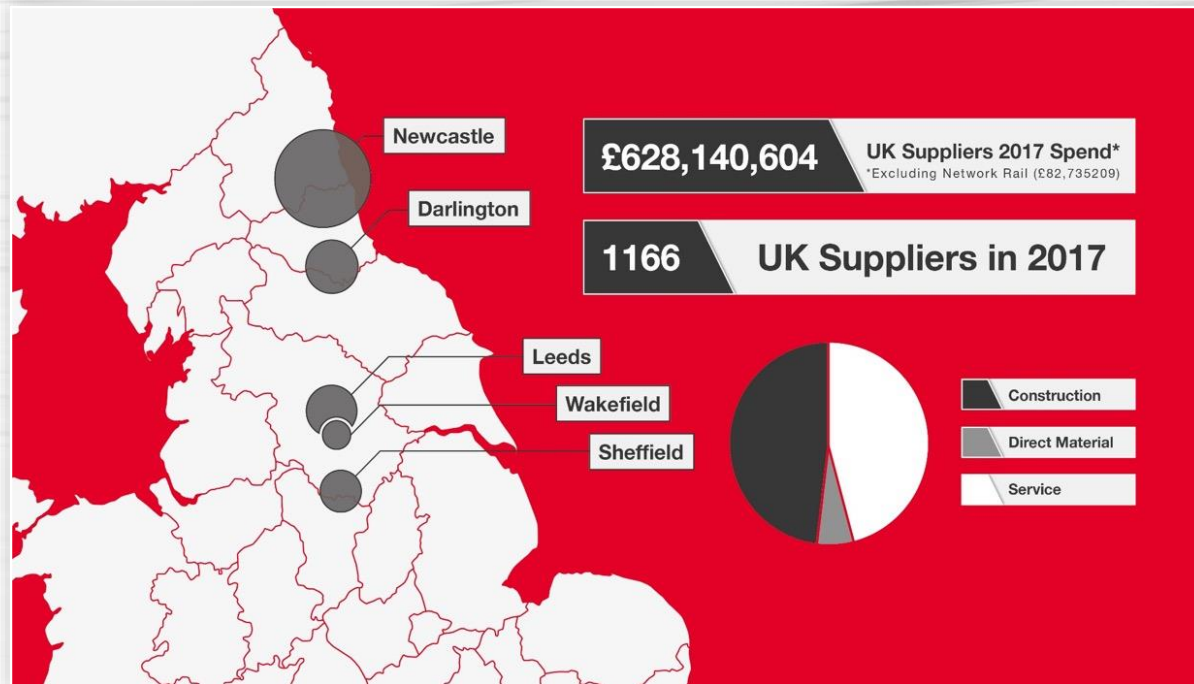
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How rail investment translates into regional supply chain growth

Hitachi already support hundreds of SMEs, who employ thousands of people all across the rail supply chain



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Creating skills for the future

Supporting sustainable skills at South Durham UTC, next to Hitachi's Newton Aycliffe facility, also supporting the NCHSR in Birmingham and in Doncaster

Hitachi's bespoke manufacturing apprentice and graduate scheme had recruited over 110 young people by the end of 2018



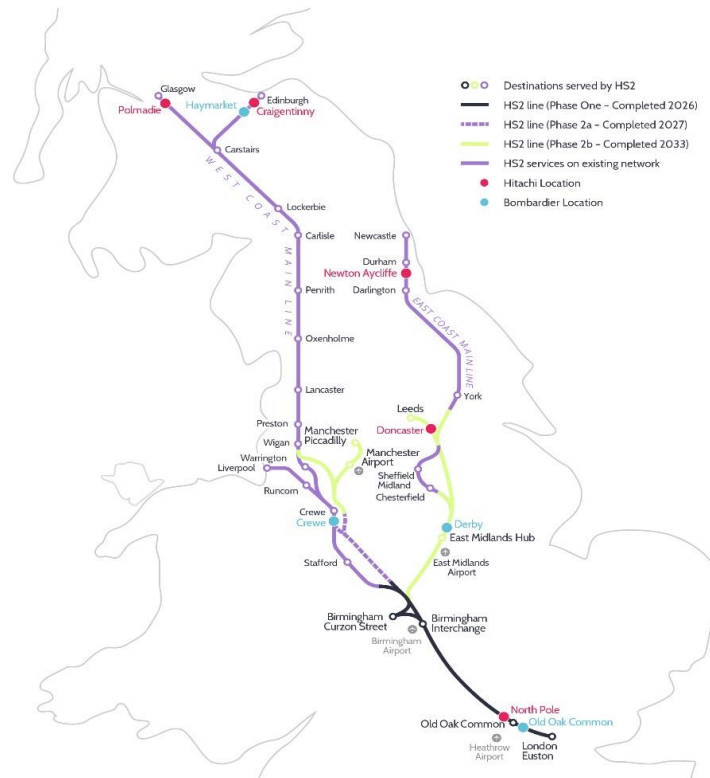
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In summary this is a once in a generation opportunity to leave a transformational UK rail legacy

HS2 Network Map



Our own case studies and footprint demonstrate these type of project can drive improvements in:

City connectivity

An improved passenger experience

Regional economic growth helped driven by manufacturers and their suppliers

Skills and opportunities for future generations

Thank you



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