

HITACHI
Inspire the Next[®]



Supporting Decarbonisation
Working to delivery a long term alliance for Scottish Rail

05/03/2020
Jim Brewin
UK Country Lead

A focus on fleet delivery across the UK



LOCATIONS & PEOPLE

Manufacturing

1. **Newton Aycliffe**
900 people (inc. FTCs)

Train Maintenance Centres

- 2. **Ashford**
150 people
- 3. **Doncaster**
100 people
- 4. **Stoke Gifford**
136 people
- 5. **North Pole**
158 people
- 6. **Swansea**
28 people

Headquarters

7. **London**
550 people

Other operations and outstation locations (c. 300 people)

- 8. **Bounds Green**
- 9. **Ferne Park**
- 10. **Craigtinny**
- 11. **Polmadie**
- 12. **Heaton**
- 13. **Additional smaller sites in the UK x 4**

Contract Awards



Southeastern
174 Class 395 cars
Delivery 2009



East Midlands Trains
200 AT300 cars



IEP Great Western Mainline
369 Class 800/801 cars
Delivery October 2017



West Coast Partnership
175 AT300 cars



IEP East Coast Mainline
497 Class 800/801 cars
Delivery 2019



Abellio ScotRail
234 AT200 cars
Delivery 2018

Current Digital Bids



Transport for the North e-Ticketing – 5 cities



West of England
173 AT300 cars
Delivery 2018



TMS for TransPennine



TransPennine Express
95 AT300 cars
Delivery 2019



ETCS for East Coast Mainline



East Coast Open Access
25 AT300 cars

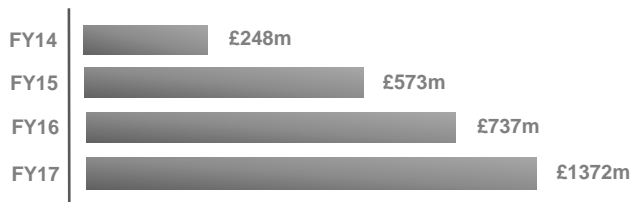


Hull Trains
25 AT300 cars
Delivery 2019



Thameslink/Network Rail
TMS
Delivery 2019

Annual Revenue



A significant partner for Scotland

- Our current rolling stock portfolio shows our commitment to Scotland and the rail network - from the Borders to the Highlands, these trains are improving connectivity and passenger experience
- We currently directly employ over 300 people in Scotland with over 500 employees working on projects
- Our focus is to provide a long-term investment – we will be based at Craightinny for nearly 30 years – we want to upskill our teams, provide digital maintenance solutions, work with the local community
- We have already invested £20m into Craightinny, and an additional £10m into Aberdeen and Inverness so passengers across the network can benefit from new trains
- By the end of 2020 there will be 159 Hitachi trains in service across four different operators:
 - ScotRail
 - London North Eastern Railway
 - TransPennine Express
 - East Coast Open Access



We're not just selling trains, it's a solution

Hitachi Rail Limited @HitachiRailEU · Jan 30
Great to see that the #Class385's performance has helped to boost passenger satisfaction in latest @TransportFocus survey.

89% of @ScotRail passengers happy with overall service & 78% of passengers satisfied with punctuality and reliability! 📈👍🇬🇧



ScotRail's new Edinburgh-Glasgow trains top reliability table

ScotRail's new Edinburgh-Glasgow main line trains are the most reliable according to industry experts.

Hitachi Rail Limited @HitachiRailEU · Jan 30
The most reliable new train in Britain keeps on improving! 🍷🍷🍷

- ✓ 89,000 miles per technical incident (MTIN) in Period 10
- ✓ 30% increase from last period
- ✓ 8.8 million miles of zero emission train travel

#Class385 @ScotRail @transcotland




Period	Miles Per Technical Incident (MTIN)
18 Sep - 12 Oct	~35,000
13 Oct - 7 Nov	~32,000
18 Nov - 7 Dec	~60,000
8 Dec - 4 Jan	89,000



1 16 50

2020, 10:45 am



ScotRail passengers 'feeling benefit' of investment

28 January 2020



Satisfaction with ScotRail's service is rising, according to the Transport Focus group

Environmental benefits of the electric Class 385:

- It is a zero-emission train - improving air quality in train stations, working towards Scotland's transport emission reduction targets
- We're proud of our people, product and reliability on the Class 385 project – and that's also thanks to ScotRail, Transport Scotland and Network Rail for their support and partnership in delivering this record-breaking train.
- But what next?



- The Cabinet Secretary for Transport and Scottish Government adopted a leading role in tackling climate change and decarbonising rail
- The pledge of no diesel by 2035 and legal target of no net emission by 2045 is clear – which surpasses UK Government targets
- It incentivises companies like Hitachi to rise to the challenge and innovate
- And we believe our battery train technologies are part of the solution

But we're not talking about new technology



2006
First fuel cell
train in the
world



2009
Fastest domestic high
speed dual voltage train
in the UK



2017
Bi-mode fleet
(diesel/electric) enters
service in the UK

2003
First Hitachi
battery/diesel train

2007
First high speed
battery/diesel
train

2013
First Hitachi
battery train
launched in Japan

2017
Second major battery
commuter train in
service in Japan



2007
First Hitachi
battery/diesel train in
commercial service





- The Class 395 contract launched Hitachi Rail into the UK, bringing Japanese technology and design
- Launched a preview service six months ahead of schedule
- The fastest domestic train in the UK with project challenges of working across new and existing infrastructure, plus a dual-voltage system and multiple signalling systems – multiple new and innovative engineering solutions had to be applied to make the project a success
- Key player in the 2012 Olympic transport strategy



- IEP is the largest contract award in the UK with 122 trains entering service on the Great Western and East Coast Main Lines
- DfT specification, two operators, managed through a period of government change and upheaval and franchise changes
- Specifically designed to support electrification – a bi-mode solution to run on electric and diesel depending on infrastructure, that would also operate for 27.5 years – so had to consider how to later remove the diesel elements in operation

Rail still needs to play catch up

- Innovative solutions are needed across all areas to develop the tools which will secure the future of our industry – based on proven technology
- But the key is to work in partnership to deliver short and long-term solutions so we don't get caught out by a lack of supporting infrastructure
- The automotive industry is facing this challenge now – how do we meet targets, customer demand and expectations?
- Hayabusa was Europe's first battery-assisted diesel-electric power car – back in 2007 – but do we have the right infrastructure in place now over 10 years later to support our battery and hydrogen plans?



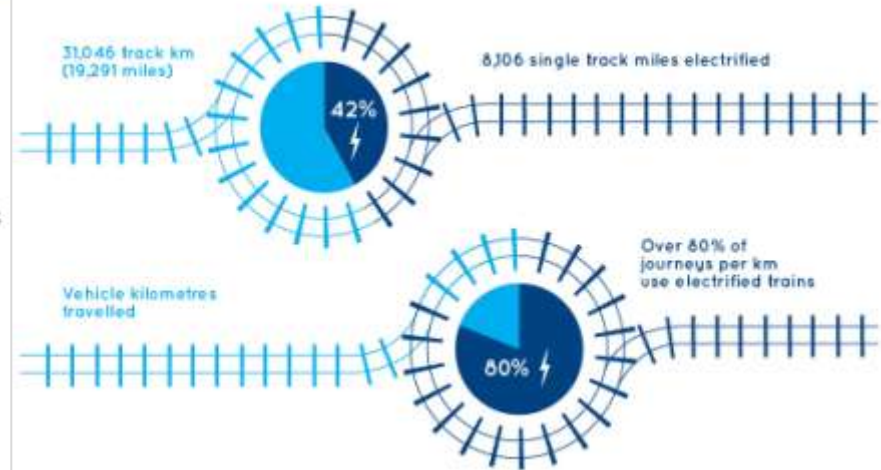
ARTICLE

Scotland's ambition to deliver a decarbonised rail network

Michael Matheson, Cabinet Secretary for Transport, Infrastructure and Connectivity for the Scottish Parliament, explains that although Scotland's commitment to decarbonise its passenger rail services is demanding, it is indisputably something that must be tackled to benefit future generations.

Tackling climate change is an obligation that we owe to succeeding generations. As the teenage activist Greta Thunberg has so pithily reminded us, 'There is no Planet B'. And, as there is no alternative, it is something that we must tackle now.

How much of Britain's railway is electrified?



09-20 NOV 2020
GLASGOW

COP26

IN PARTNERSHIP WITH ITALY



Work as an Alliance

Develop Infrastructure

Educate People

- There are so many answers to how we work together for decarbonisation – one solution won't work for everyone and all Scottish routes – we need to work together in partnership to deliver on our promises
- The longer-term benefits are potential full battery-electric intercity train by late 2040s
- Adopting a staged approach, we can incrementally replace diesel engines with alternative fuels
- Battery technology can also allow for wider discussion on discontinuous electrification
- And allow us to drive a change in maintenance and infrastructure requirements
- The technology exists now and we're ready to started on the step change needed that would deliver:
 - Increase in performance – up to 20%
 - Fuel savings – up to 30%
 - Instantly helping to improve air quality for passengers and our own employees

So how do we achieve these goals?



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