Infrastructure and High Speed Trains: New Possibilities in the UK

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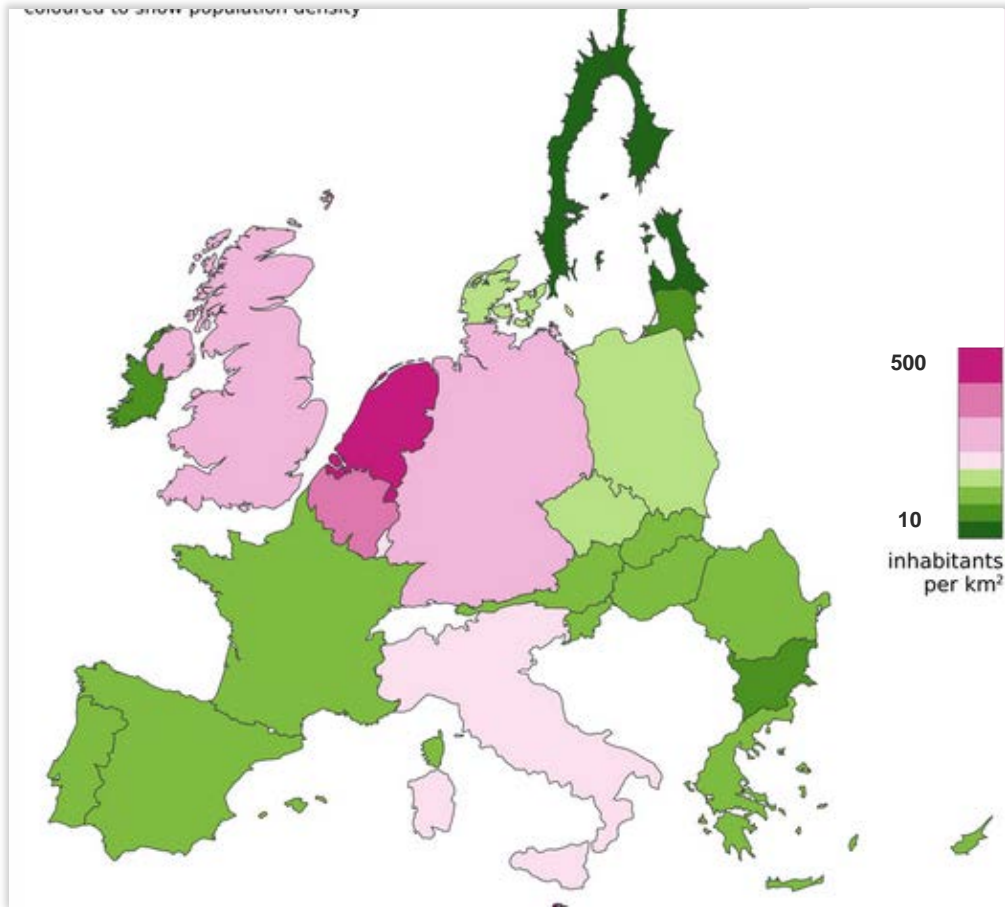
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Agenda

1. Population and city density

2. Economic background

3. Political background

4. Britain's rail history

5. What is HS2 ?

6. Journey times

7. UK problems - Swedish solutions

8. High Speed Rail Global Pipeline

9. Alstom's High Speed offering

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Density – Population and City

coloured to show population density

500

10

inhabitants
per km²

- Sweden: 21 people per sq km
- France: 114 people per sq km
- Germany: 221 per sq km
- UK: 262 people per sq km
- Holland: 501 people per sq km

- **People per square km**

- Lyon 1,400
- Paris 3,550

- Washington 1,300
- Boston 900
- New York 2,050

- Birmingham 3,800
- Manchester 4,000
- Leeds 4,050
- London 5,100

- Stockholm 4,273
- Malmo 1,842
- Gothenburg 1,000

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Economic background

- Between 1997 and 2006 London and the South East's share of output (GVA) was 37%.

- Since 2007 London and the South East's output has risen to 48%.

- Former industrial powerhouses the West Midlands urban area, home to the UK's second city Birmingham, and Greater Manchester contribute less than 4% each to the total UK GVA.

- The average house price in London is £443,399 – more than double the UK average and over three times higher than the average in the North.

Note: Gross Value Added (GVA) + taxes on products - subsidies on products = Gross Domestic Product (GDP)

Homes being sold for £1 in Liverpool just 20 miles from the HS2 Crewe stop

In London apartments at One Hyde Park are on the market at up to £75 million.

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Political background

- The Government is committing to creating a "Northern Powerhouse" and has invested £13 billion in transport projects to support this.

- The Government is also promoting devolution of powers, key services and money to cities that introduce elected mayors covering the wider city region.

- Liverpool, Leeds, Newcastle, Birmingham and Sheffield have committed to an elected mayor.

- London will elect a new mayor in May 2016.

- The contest is between Conservative MP Zac Goldsmith and Labour MP Sadiq Khan.
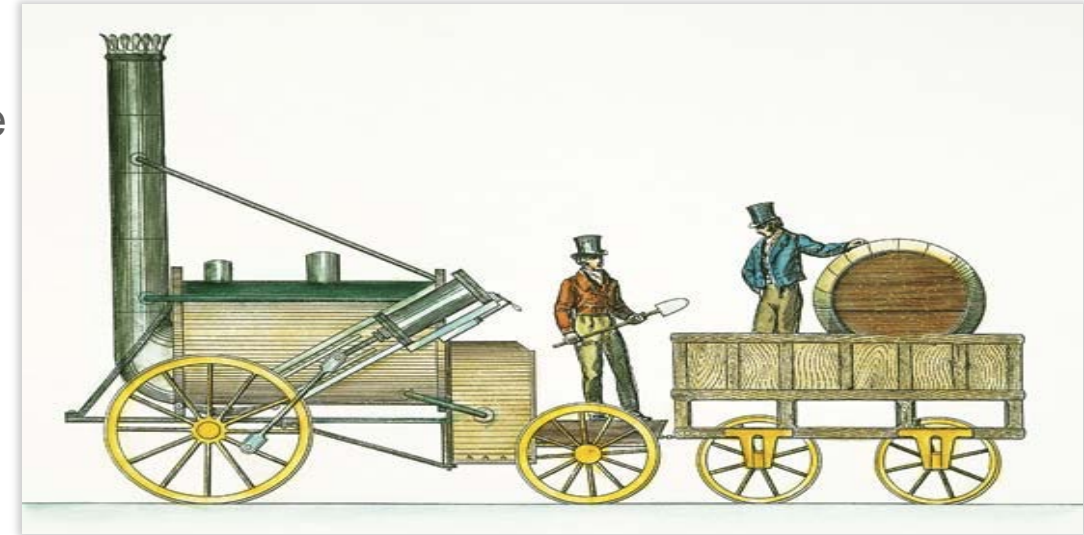
Chancellor George Osborne and Sir Richard Leese

London Mayoral Election Candidates Zac Goldsmith and Sadiq Khan

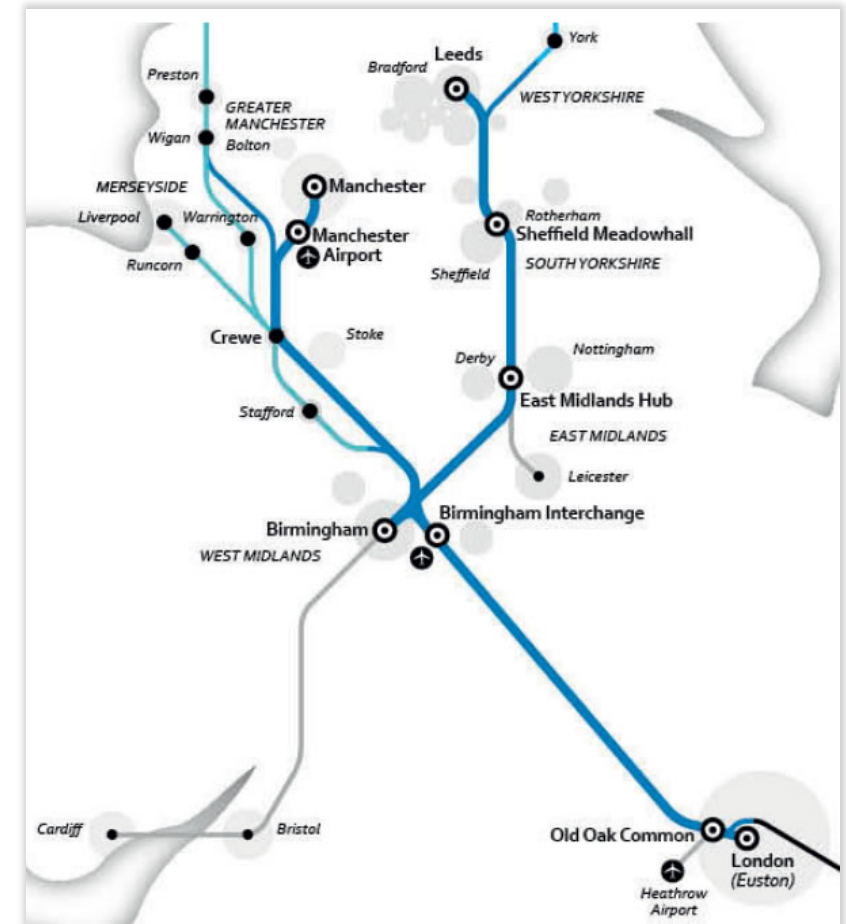**ALSTOM**

A track history

- The world's first railway was built by British pioneer George Stephenson in 1825.

- The loading gauge of British railways is smaller than the European standard, as lines were modelled on the earliest steam locomotives designed by Stephenson, such as The Rocket.

- Britain also pioneered tilting technology with the 1970s Advanced Passenger Train. This technology was adapted and enhanced by Alstom for the Pendolino.

- While rail investment fell in recent decades, the present Government has committed to the biggest rail investment programme since the Victorian era.
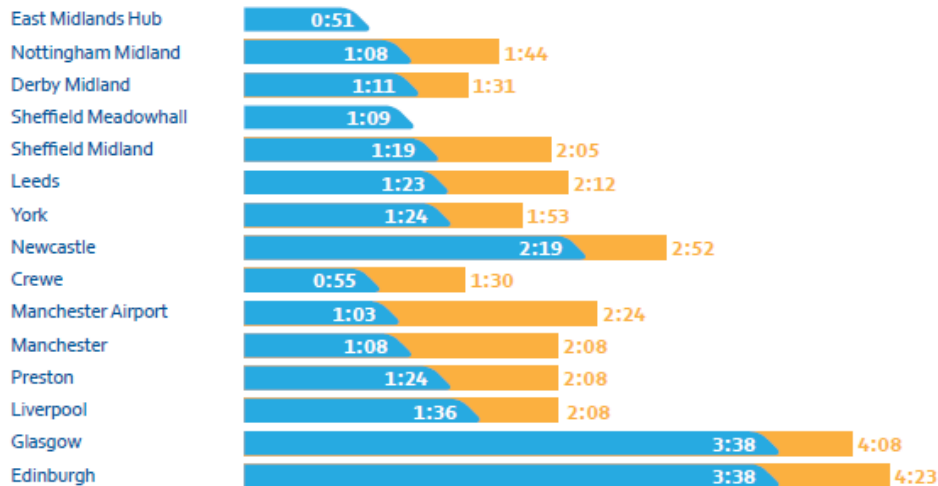
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What is HS2 ?

- A planned 531 km high speed rail line linking up London and Birmingham, Manchester, Sheffield and Leeds.

- It will create more than 25,000 jobs directly and the first phase will open in 2026. Phase 2a will be complete in 2027. The final phase will be complete by 2033.

- The estimated cost of the scheme is £55.7billion.

- There will be 18 trains carrying 20,000 passengers an hour.

- More than 50% of Phase 1 to Birmingham will be partly or completely concealed in tunnels or cuttings with the longest tunnel running for nearly 13km under London and the longest viaduct being 3.2km.
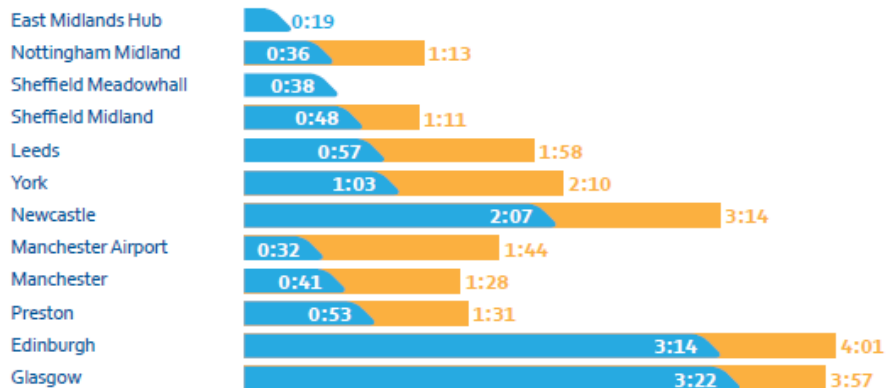
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HS2 Time Savings

London to

Destination		
East Midlands Hub	0:51	
Nottingham Midland	1:08	1:44
Derby Midland	1:11	1:31
Sheffield Meadowhall	1:09	
Sheffield Midland	1:19	2:05
Leeds	1:23	2:12
York	1:24	1:53
Newcastle	2:19	2:52
Crewe	0:55	1:30
Manchester Airport	1:03	2:24
Manchester	1:08	2:08
Preston	1:24	2:08
Liverpool	1:36	2:08
Glasgow	3:38	4:08
Edinburgh	3:38	4:23

Birmingham to

Destination		
East Midlands Hub	0:19	
Nottingham Midland	0:36	1:13
Sheffield Meadowhall	0:38	
Sheffield Midland	0:48	1:11
Leeds	0:57	1:58
York	1:03	2:10
Newcastle	2:07	3:14
Manchester Airport	0:32	1:44
Manchester	0:41	1:28
Preston	0:53	1:31
Edinburgh	3:14	4:01
Glasgow	3:22	3:57

Key
- LGV Nord (1993)
- Channel Tunnel (1994)
- High Speed 1 (2007)
- High Speed 2 (phase 1)
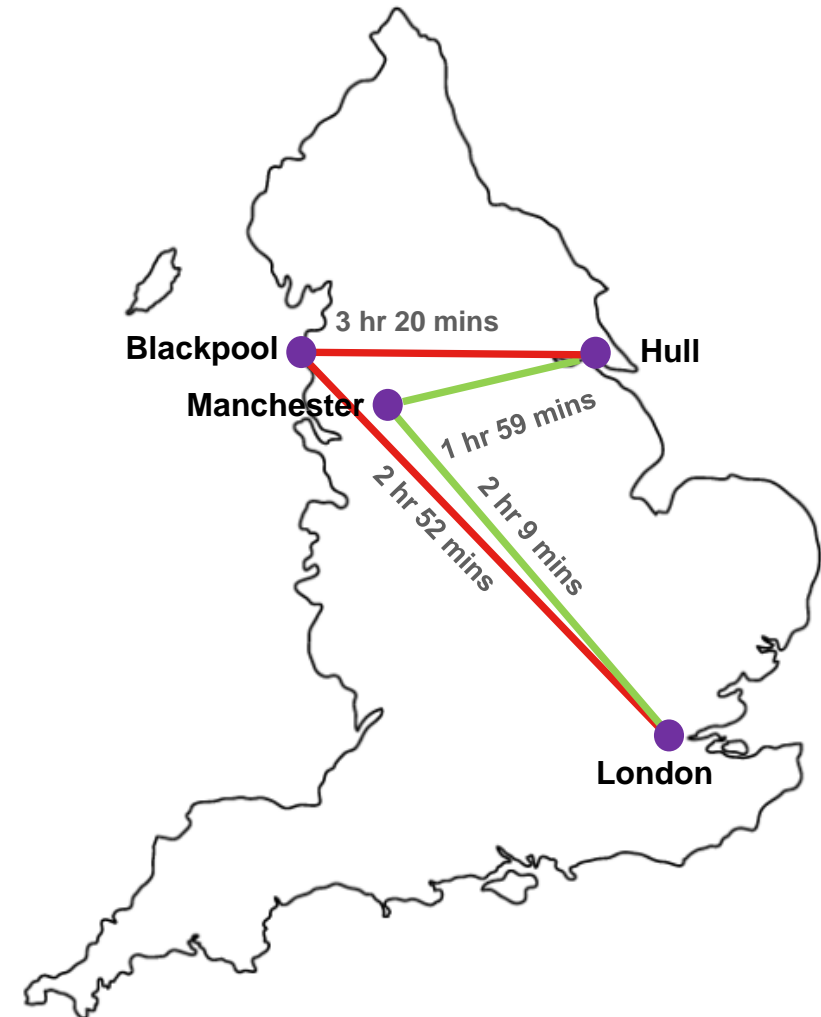- High Speed 2 (phase 2)
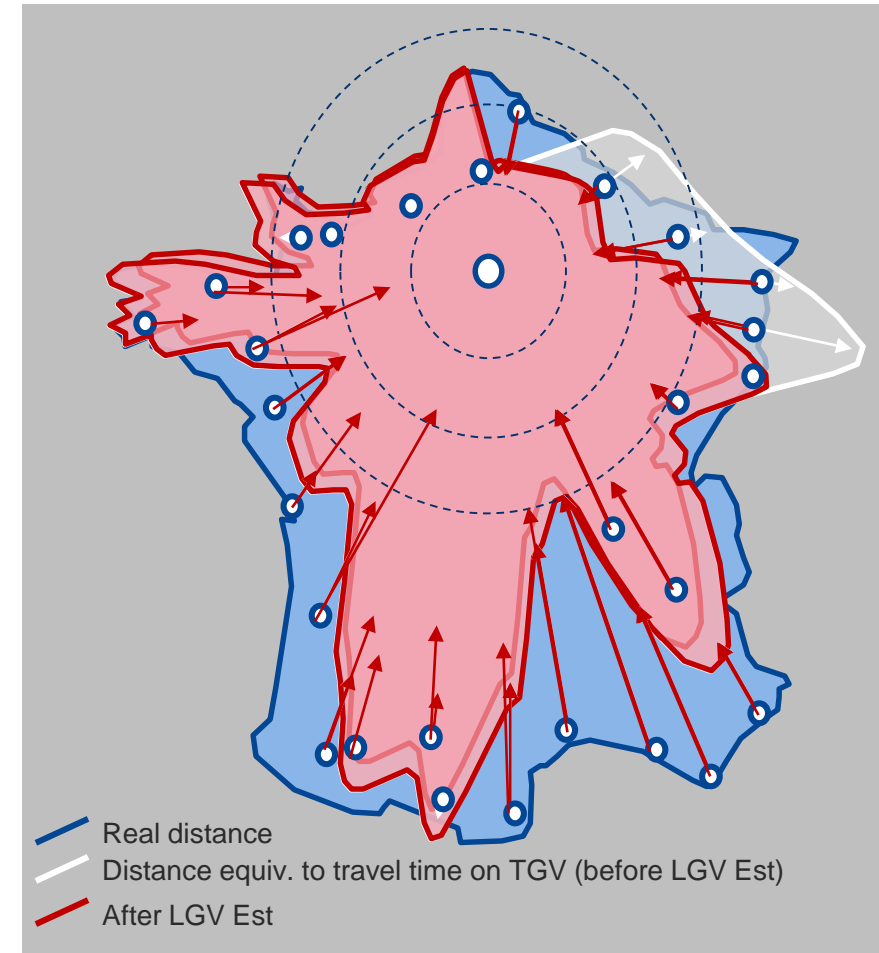- Future phases (proposed)

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HS3 – Connecting the Northern Powerhouse

- It often takes longer to travel between cities in the North of England than between the North and London.

- HS3 will be a rail line linking Northern cities.

- Talking about HS3 has helped to cement the idea that HS2 is definitely happening.

- HS3 will cut journey times between Manchester and Leeds from 55mins to 34 mins.

- It would cost £5bn.

- It would reduce journey times between Liverpool, Manchester, Leeds, Sheffield and Hull.

Blackpool — 3 hr 20 mins — Hull

Manchester — 1 hr 59 mins

2 hr 52 mins

2 hr 9 mins

London

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High Speed Rail brings communities closer together

- High Speed Rail brings cities closer together.

- Cities that prepare for High Speed rail benefit the most.

- High Speed rail spreads wealth as more areas become viable business centres.

- Major businesses need to be within a certain travel time of the Capital. High Speed extends this.
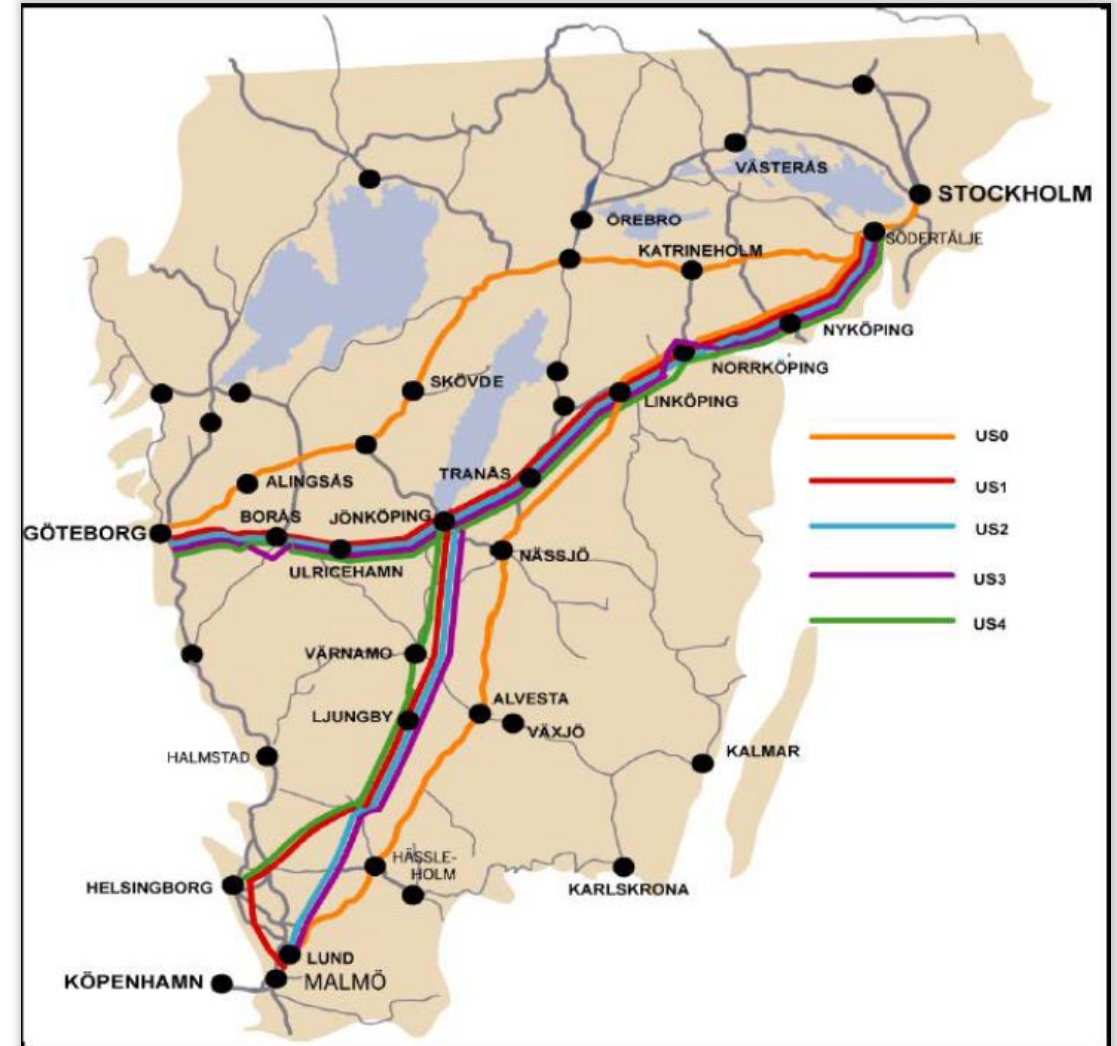

Real distance
Distance equiv. to travel time on TGV (before LGV Est)
After LGV Est

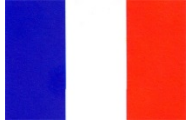France by train from Paris

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Similarities between UK and Sweden:

▪ Getting more people into public transport.

▪ Capacity issues

▪ Reducing journey times to bring cities closer together.

▪ Connectivity with other transport modes.

▪ A spring board for further regeneration.

▪ Mixed network.

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High Speed Rail – Global pipeline

France - 670 km

Paris – Strasbourg
Opening - 2016
Length - 106 km
Speed – 320kph

Tours – Bordeaux
Opening – 2017
Length - 302 km
Speed – 320kph

Le Mans - Rennes
Opening - 2016
Length - 182 km
Speed – 320kph

Nimes- Montpellier
Opening – 2017
Length - 80km
Speed – 300kph

Turkey – 955 km

Ankara - Sivas
Opening – 2018
Length - 393 km
Speed – 250kph

Eskishehir – Izmir
Opening – 2025
Length – 487 km
Speed – 250kph

Bursa – Bilecik
Opening – 2015
Length – 75 km
Speed – 250kph

Saudi Arabia – 444 km

Medina – Mecca
Opening – 2016
Speed – 300kph

India – 534 km

Mumbai - Ahmedabad
Opening – 2024
Speed – 350kph

Morocco – 350 km

Tangier – Casablanca
Opening – 2018
Speed – 320kph

UK – 531 km

London – Leeds & Manchester
Opening – Phase 1 2026; Phase 2 2033
Speed – 360kph

USA – 837 km

LA – San Francisco
Opening – 2029
Speed – 350kph

Hong Kong – 142 km

Hong Kong - Guangzhou
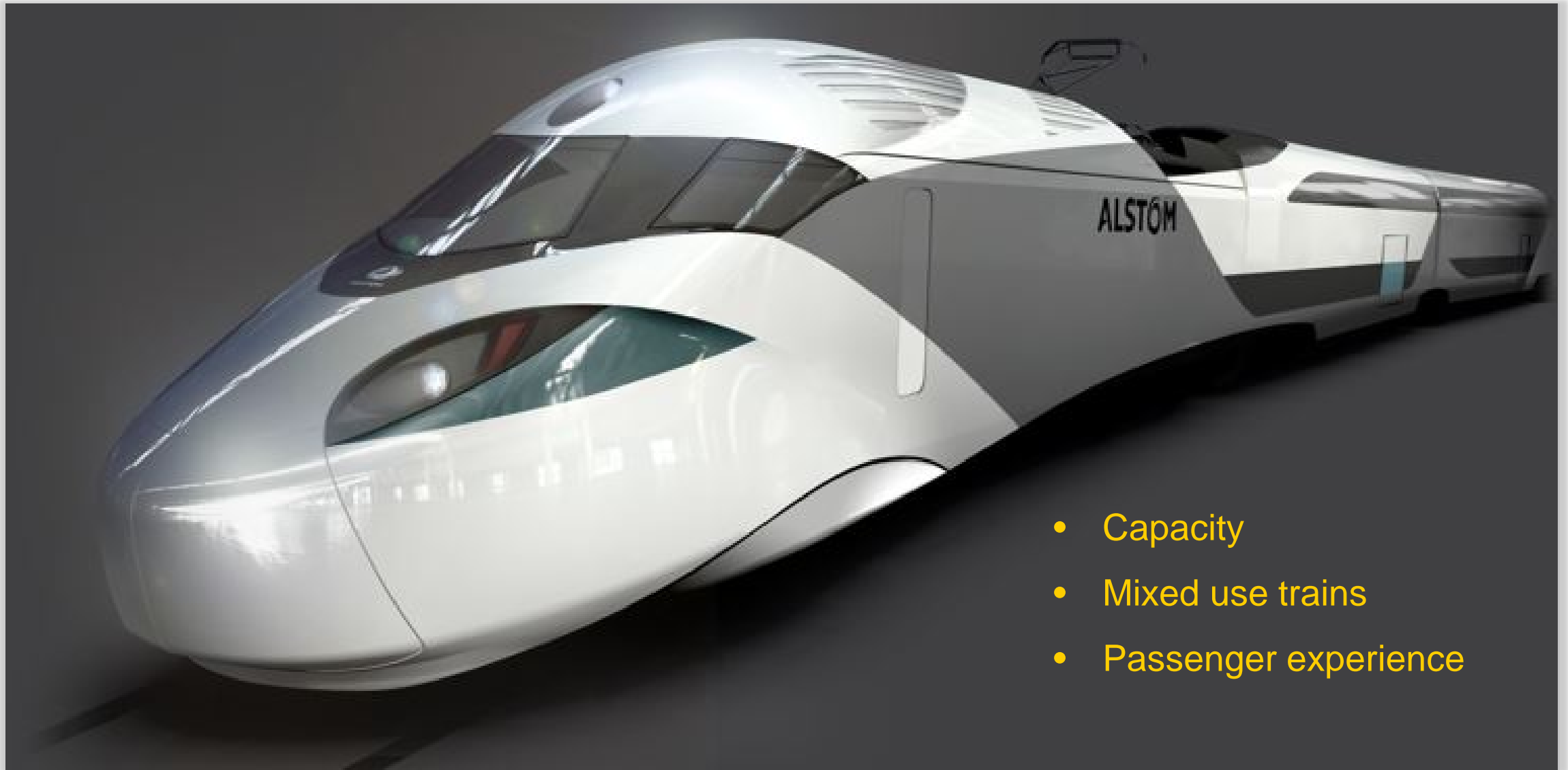Opening – 2017
Speed – 350kph

Malaysia – 330 km

Singapore – Kuala Lumpur
Opening – 2022
Speed – 300kph

Russia – 770 km

Moscow - Kazan
Opening – 2020
Speed – 400kph

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- Capacity

- Mixed use trains

- Passenger experience

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