

HSR the creation of a mega-project

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Outline

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- Motivations
- The formative history on HSR: how a mega-project emerges
- Objective-setting: the critical task
- Greengauge 21's Public Interest Group
- Where have the network concepts come from?
- Conclusions



The big picture

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1. We have to make a 80% cut in carbon and this is not realistically achievable just by taxation/restraint policies
2. We have a country still expected to grow, with a mid-century population expected that is higher than Germany's
3. We have had less investment in transport infrastructure than our near European neighbours, across the board
4. We therefore have declining transport efficiency, and also the highest level of car dependency of major European countries
5. We have a very unbalanced pattern of land use development across the nation.



Much of the answer lies elsewhere

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- Most journeys are local so walk/cycle, smarter choices, new localism, better public transport *etc* all important
- Since travel is a derived demand, policy measures across other sectors (health, education, retail *etc*) are critical and need to change, to ensure local is not replaced by regional
- A switch to cleaner fuels/energy supply would improve the carbon efficiency of existing modes, but:
 - It would mean a huge increase in electricity supply for 30m vehicles
 - It would reduce private vehicle *range*
- None of this addresses longer distance travel or underlying growth (and in part exacerbates it)



Longer distance travel (over 25 miles)

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- Accounts for 46% of person travel measured as passenger-km (up from 43%, mid 1990s)
- So equates to around half of all carbon emissions
- Over 25 miles, rail is relevant as an alternative to car, but still only 14% share and suffers from:
 - Lack of coverage (against dispersed demand)
 - Lack of access opportunities
 - Limited advantages over car comforts
 - High perceived (and often actual) cost
- Cannot be solved by wistful thinking about pre-Beeching era wider networks; needs an integrated approach that will attract car users



And the prospects, across the modes?

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- Longer distance demand is growing strongly across the modes, led by rail
- There are no plans to increase trunk road network capacity except at the margin and through 'Managed Motorways'
- There is no consensus on road user charging and no Plan B
- Airports are seriously congested and under-performing
- Rail is growing so strongly that key routes will be full within 10 years even with better utilisation measures, which are now well-developed in the rail sector
- So the prospect is of ever growing congestion



Generic responses

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1. Assume that taxation (road user charges, airline taxes) can be used to reduce traffic to efficient levels. This requires:
 - *either* an acceptance of centrist-autocracy (we have enough evidence that no democratically elected government would do this today)
 - *or* wishful thinking that people will somehow be persuaded to desist
- Adopt behavioural change measures as possible, (but recognise their limitations (20% demand reduction)) *and* adopt greener technologies (won't be as fast as King Report) *and* expand the capability and thus market share of the less carbon-intensive modes



Questions – and an answer

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- So is there any evidence on the best kind of investment to make (for longer distance travel)?
- Has anyone done the serious studies needed, comparing investment across the modes?
- Yes, Atkins (and others) in 2001-3, engaged by the Strategic Rail Authority have investigated HSR, with a professional thoroughness. The capacity gain comes from a combination of new routes and relief of existing networks; complementary investments are also needed.



Evidence on north-south HSR: Business Case (ie benefit:cost appraisals) from Atkins *et al* (2002/3)

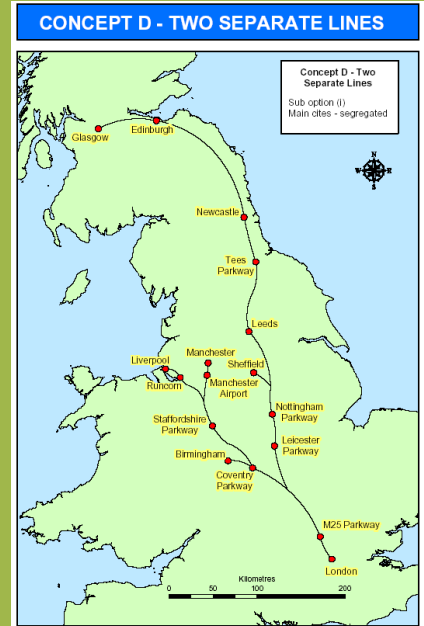
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- Optimism Bias as per Treasury Green Book; looked at road and rail investment options N-S, effects of road user charging etc
- Key conclusions on shaping the HSR concept:
 - BCRs over 2:1
 - Not building into city centres results in the loss of the business case
 - no business case to build a north-south freight route alongside the HSR tracks
 - no business case to build a line and operate it at conventional speeds (200km/h)
 - good business case to build a route from a north-south HSR line direct into Heathrow airport (as a branch)



Atkins – Early Network Concepts

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Recent history on HSR (1)

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- 2000 East Coast 20-year franchise bid
- 2001 SSRA response: study commissioned
- 2003 Strategic Rail Authority Atkins, Ernst & Young *et al* complete their work
- 2004 Atkins study published in summary form on DfT web-site
- 2005 Strategic Rail Authority wound up. Greengauge 21 formed



Wider policy backdrop

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- In 1970s, Britain develops APT – fast tilting trains on existing infrastructure (WCML); France develops the idea of TGV
- In early 1980s, APT abandoned; TGV launched (Paris – Lyon)
- By 1983, SNCF publishes a national long-term TGV strategy; in Britain InterCity Strategy designed to get the ‘business sector’ into profit
- Early 1990s: Railtrack in JV identifies new signalling as key to WCRM
- 1997: the last franchise is let: ICWC to Virgin with a commitment to build on route renewal with fast tilting trains (the Pendolino fleet – now by far the most successful tilt train application in the world)
- At 200km/h, Pendos slow *cf* AGV (360 km/h), but even with extra route capacity, WCML already overloaded (‘congested by mid 2020s’)



Recent history on HSR (2)

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- January 2006 Greengauge 21 releases its Manifesto
- December 2006 Eddington Transport Report published
- June 2007 Greengauge 21 publishes HS2
- July 2007 Rail White Paper
- November 2007 St Pancras and HS1 open to acclaim
- December 2007: DfT say they plan nothing further specifically on HSR
- January 2008 Greengauge 21 starts to form Public Interest Group
- March 2008 S of S asks Network Rail to consider long term capacity needs



Recent history on HSR (3)

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- Summer 2008, transport ministers change
- September 2008, mid credit crunch Tory party announces a £15.6bn public spending commitment on HSR 2015 -2027
- January 2009, around the Heathrow R3 announcement, Minister commits to a company 'HS2', headed by ex-PS Sir David Rowlands, to study HSR between London and West Midlands



What should follow HS1?

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High Speed Two A Proposition by Greengauge 21

June 2007



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Production of this Report has been sponsored by the Railway Forum 



High Speed Two: June 2007

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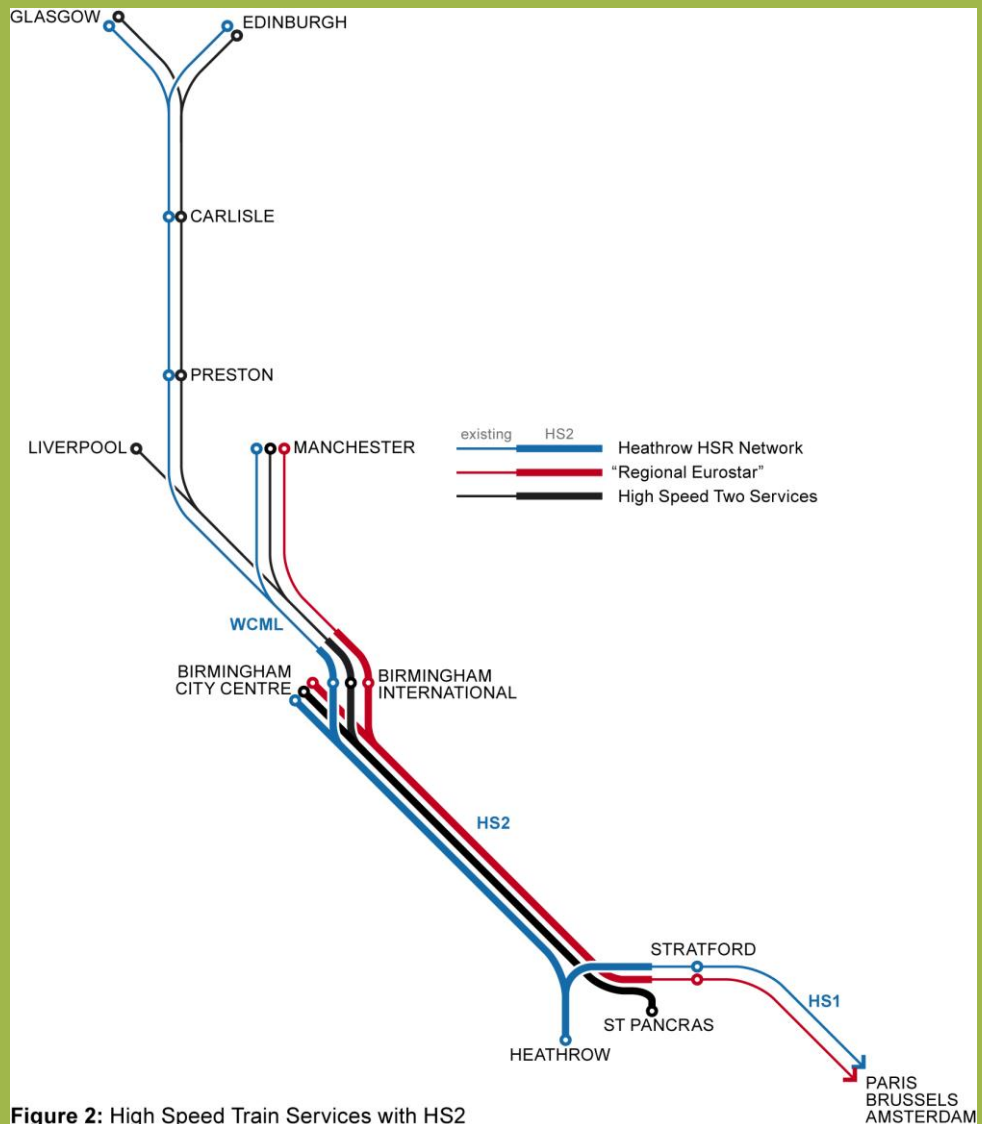


Figure 2: High Speed Train Services with HS2

20th May 2009



Public Interest Group

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- Largest City Councils in England and Scotland
- English Regional Development Authorities
- Network Rail
- Transport for London
- RIA, ATOC
- PTE Group
- Corporation of the City of London
- BAA
- Further Regional Agencies in England and Scotland



Outputs from Greengauge 21's HSR Development Programme: corridor level

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Route Corridors





Sir David Rowlands letter to Lord Adonis

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Proposed approach to the ‘Scope of work beyond the West Midlands’:

“longer term options and priorities...building on Network Rail’s work...[earlier studies]...and Greengauge 21 Proposals. We do not propose commissioning major new work on longer term options”

“also consider longer term options to the west as well as the north. Greengauge 21 is considering a corridor to the west”.



Lord Adonis' response...

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“Government endorses the broad objectives and remit you have set out.”



Outline

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- Motivations → objectives
- The formative history on HSR: how a mega-project emerges
- **Objective-setting: the critical task**
- Greengauge 21's Public Interest Group: attempting to engage regional and local representative interest as well as national
- Where have the network concepts come from?



Guiding Principles for High Speed Rail

approved by the Public Interest Group, January 2009

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1. Capacity

- where there is unmet demand, for the national transport system
- relief to the existing rail network

2. Economic Regeneration

- growth, regeneration and wider productivity benefits
- sustainable pattern of development

3. Alternative to Car Use

- address the whole journey; an attractive, lower carbon, alternative to car use

4. Modal Switch from Aviation

- attract demand from short-haul aviation to free-up runway capacity and/or reduce carbon emissions

5. Nationwide Benefits

- phased national network, reducing carbon emissions from the transport sector.



Analysis of High Speed Two (HS2) Objectives

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Govco HS2 Objectives in broad priority order	Comment
Passenger capacity	'Driving consideration', but no reference to capacity of transport modes other than rail
Optimised Speed	Expects at least 300km/h <i>Greengauge 21</i> regards speed as a means to the ends defined in the Guiding Principles
Land use and development	Focus on providing capacity in West Coast corridor to deliver additional housing Economic regeneration in West Midlands mentioned but nothing on role in relieving development pressure in wider south-east
Freight	HSR should be freight capable ('German approach')
Modal shift from car	Key gain expected Heathrow/Thames Valley from Heathrow Interchange No specific requirements from HS2 – will emerge from appraisals Parkways may be acceptable
Modal shift from air	Not expected from HS2 Consideration of West Midlands – Europe HSR services



In short..

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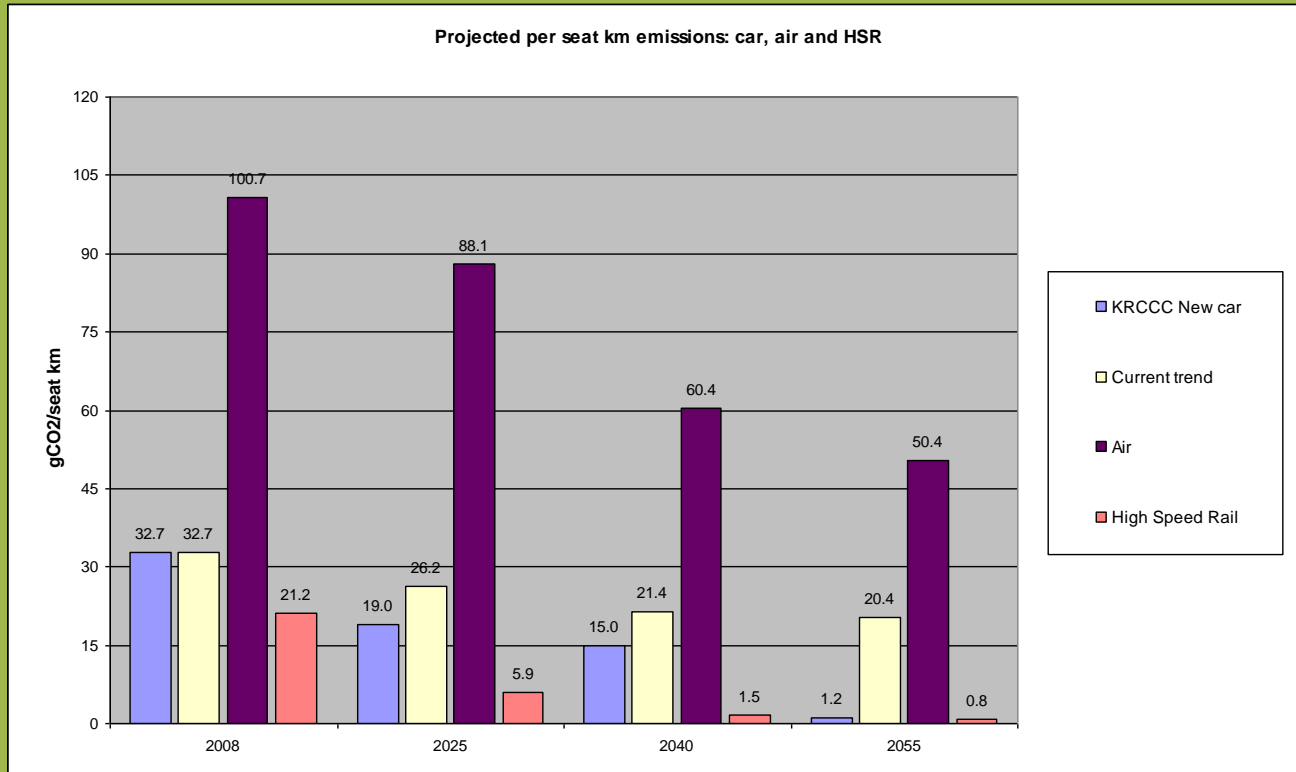
Key differences on objectives are:

- Greengauge 21 believes this is about an across-the-modes intervention to address wider economic and environmental challenges
- HS2 is seeing the problem more narrowly, not looking for specific results across the modes, with scepticism around modal switch and no explicit carbon reduction target



Projected Carbon Emissions for Car, Air and High-Speed Rail

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Source: Estimates based on earlier assumptions and CCC forecasts for CO₂ intensity of generation.



Four Network Shapes

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Conclusions

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- HSR is a partial solution; it can avoid the need for a lot of short-haul aviation
- But can it offer, with complementary measures at a regional scale the ‘people’s alternative’ to the ‘family car’?
- Will it bring the sought after stimulation to regional economies?
- Does it offer a serious reduction in carbon from the transport sector?
- Is it affordable?

Yes, yes, yes and yes.



Thank You.