GREENGAUGE21

Bircham Dyson Bell

GREENGAUGE 21 – "FAST FORWARD"

Summary of stakeholder seminars to discuss final conclusions

Introduction

Greengauge 21 invited a number of stakeholders who had been previously involved in their High-Speed Rail development programme to a series of seminars held around the UK to present the conclusions of the culminating report of the programme, *"Fast Forward"*.

The sessions were held as a way to feed back on the programme of work which so many stakeholders had contributed to, largely to present the final conclusions included in the report, but also, importantly, to have an open debate about what stakeholders thought about these conclusions and how they should be presented.

Stakeholders had been involved in the programme through their membership of the Greengauge 21 Steering Group and Public Interest Group, and also included those who had been interviewed as part of the high-level stakeholder consultation and regional workshops.

Seminars were held in Edinburgh, Birmingham and London to accommodate the majority of stakeholders. Each of the meetings was divided into three sessions, which followed the format of Greengauge 21's "Fast Forward" report on High-Speed Rail.

Greengauge 21 – Stakeholder Session, Friday 4th September 2009

Introduction

The first stakeholder session took place at the City of Edinburgh Chambers on Friday 4th September 2009. In attendance were representatives from:

- Edinburgh Chamber of Commerce
- Edinburgh City Council
- Federation of Small Businesses
- Glasgow City Council
- Grayling (attending on behalf of chair of HS2S)
- High Speed 2 Scotland
- SEStran
- Scottish Council for Development and Industry
- Strathclyde Passenger Transport
- Transform Scotland
- Transport Scotland

Session One

Julie Mills (JM) detailed the objectives of Greengauge 21's programme and explained the background to the work. In particular, JM noted the need for the report to be clear on why High-Speed Rail is required and the development of the guiding principles for the development programme. JM went on to explain the findings of the attitudinal research undertaken on the travelling public and how it could be summarised as 'save time to make time'. Major issues coming out of this research included the level and complexity of fares and feeling of exclusion by young people when making last minute decisions to travel. It is clear that the needs of the consumer need to be built into the design of any High-Speed Rail network.

The carbon credentials of High-Speed Rail were presented, comparing its performance against conventional rolling stock. Issues such as load factors, stopping patterns, and decarbonised energy generation were highlighted as being important for the discussion of sustainability. Network Rail's recent *New Lines* report also examined the environmental impacts of construction, but Greengauge 21's report does not.

Session One – feedback

A discussion took place around the environmental and carbon reduction statistics for High-Speed Rail and whether an equivalent reduction in the number of cars could be stated as this would help in communicating the findings of the report. JM noted that the largest shift is from air to rail, accounting for around 20% of HSR demand. High-Speed Rail would help to make a contribution to reducing the carbon emissions of long distance travel. It was requested that the report be clear on the comparison with Pendolino trains on issues such as passenger numbers, length of trains etc.

Following a request for clarification, JM explained that whilst interest in High-Speed Rail had been great in Scotland for some time, the opening of the new St. Pancras had heightened interest still further and was the spur needed to start the work of Greengauge 21.

It was suggested that all those who supported High-Speed Rail should speak with one voice on its environmental credentials, otherwise the debate would focus in on any differences. The messages would need to be simple to help keep the public on board. JM promised that a number of simple statistics would be included in the final version of the report. Calls were made to ensure that Greenguage 21 were engaging with the right people in Government on these issues, particularly those in the Department for Transport who underplayed the environmental credentials in earlier papers. JM reassured the group that discussions were taking place with all the relevant bodies such as HS2 and Network Rail.

Worries were expressed over the lack of political cohesion on High-Speed Rail, in particular in relation to the Conservative Party in London who have stated that a line would only go to the North of England, whilst the Party in Scotland states that it will go north of the border. JM explained that the 'Fast Forward' report was being launched before the party conferences took place so that it could have most impact, and maybe challenge some existing thinking. It was suggested that the business case currently being prepared for presentation to Scottish Ministers, and then to HS2, was of fundamental importance.

It was suggested that the report should mention the vulnerability of oil supply in its discussion of the environment.

Session Two

The main part of the meeting detailed what a national High-Speed Rail might look like with Greengauge 21's conclusion that two north-south routes are required to deal with capacity issues in a cost-effective manner (HS-NW and HS-NE). In addition, three east-west routes are examined but a staged upgrade could be considered on some routes. City centre stations are required both for the business case but also to ensure development opportunities and regeneration. Edge of city stations could, in some places, act as transport hubs.

These plans would deliver a step-change in journey times, for instance London to Glasgow or Edinburgh in 2 hours 30 mins with no stops with all-new infrastructure, or 2 hours 40 minutes with one stop. Whilst Network Rail's *New Lines* study was more optimistic on journey times, Greengauge 21's work has taken into account specific alignments and SYSTRA's experience on operating allowances.

The work suggests the internationally accepted UIC GC gauge should be adopted which also allows for double-deck trains.

HS-NW has the best business case but a good case remains for HS-NE. However, a HS-NE link from Newcastle to Edinburgh would be more of a challenge as an existing High-Speed link between London and Scotland would already exist. However, arguments around network resilience would remain strong. JM presented some suggestions for High-Speed in Scotland which do not form part of the 'Fast Forward' report.

The role of Heathrow was discussed as was the phasing of a potential network – the HS-NW from London to Manchester should be first, and then consideration given to its extension to

Scotland as well as construction of HS-NE. The extension of HS-NW to Scotland has a very good Benefit:Cost Ratio (BCR).

Session Two – feedback

It was asked whether a southern spur route around London to the South East had been considered. JM explained that whilst some services to Gatwick had been tested this was not part of the core work.

It was asked whether any costs associated with UIC GC upgrades had been included in the cost estimates, particularly on the Edinburgh-Glasgow route. JM stated that these had been factored in where appropriate. There were also concerns expressed about the capacity issues which could be generated with a modal shift from air to High-Speed Rail. JM explained that Greengauge 21's figures assume an approximately 90% market share, with 10% for air.

A discussion took place around how to present the case for extending High-Speed Rail to Scotland based both on the BCR and environmental benefits. JM noted that the whole line was needed if all the benefits were to be delivered but that there was no reason why construction of the line could not be started at both ends at the same time.

The issue of funding was raised and the discussion around a possible contribution, and size of contribution, from the Scottish Government. In addition, it was believed that there could be opportunities for, for instance, Edinburgh airport, taking trade from Heathrow, attracting potential users from the north of England up, i.e. presenting Edinburgh as an alternative to Heathrow. It was considered that this was an area which could usefully be studied to inform such strategic decisions.

Session Three

Largely dealing with appraisal, finance and the need for High-Speed Rail's integration with city and regional plans, this section looked at the financial costs involved in the development of a network. It was explained that the value for money calculations were based on the Government's latest guidelines and that appropriate sensitivity tests had been conducted.

A system would relieve capacity on the existing network and there would then be issues to address around what do with this capacity – regional services, more commuter services, opportunities for freight etc. The expected breakdown of demand for High-Speed Rail was explained (modal shift, new demand etc).

It was explained that significant economic benefits accrued to the regions from High-Speed Rail, especially for Scotland. The basis of the 'imperfect competition' benefit figures were detailed by JM following a request for more information, as was the 60-year period taken for the NPV figures.

In relation to funding, a London-Birmingham-Manchester route would cost around £19bn and a range of options remain open to securing the finance required, such as a DBFT arrangement used on HS1. Open access provisions need to be considered in such discussions so the franchise and regulatory system has to be managed and dealt with as these issues relate to affordability.

Integration with city and regional plans needs to take place to secure connectivity and regeneration. There are both good and bad examples on existing high-speed networks.

JM ended the session by explaining why High-Speed Rail should be included in the forthcoming National Policy Statement on national networks, the possible processes under which a network could be authorised and the possible role of HS2 going forward (with a broader remit being required).

Session Three – feedback

A figure for the total build cost was requested, and an estimate of £69bn was suggested. The figures include all the spurs to Heathrow, HS1 (as well as optimism bias) etc. In relation to timings, 10 years would be optimistic for the opening of a first line, with 15 years being more realistic. The scope of what would be built in any first phase would depend on the level of funding available but issues around supply chain, which are sometimes noted as being a potential brake on development, are, it is believed, less important than political and funding commitment.

The funding issue is down to one of choices, such as spending alternatives, but the potential outlay would be relatively low for the next five years or so whilst the system is fully planned.

Clarification about how the level of fares was dealt with in the calculations included in the report was requested. JM explained that they mirrored existing fare levels and that if a premium fare was charged for High-Speed Rail then revenue would rise and demand would fall, meaning that the BCR would fall but affordability would increase. Broadly speaking, a 20% fare premium would reduce demand by 10-15%.

The impact of High-Speed Rail on existing train operating companies was discussed with JM urging their early involvement so that the franchise map could, if necessary, be restructured. The Government may have to offer more subsidies but this eventuality is covered in the cost estimates.

The session ended with a general noting of the decisions to be made on funding, and how High-Speed Rail would need to be measured against other transport spending. In addition, it was seen as important not to overstate High-Speed Rail's environmental credentials, as it has a number of other benefits as well, but to highlight the shift away from aviation.

Greengauge 21 – Stakeholder Session, Friday 18th September 2009

Introduction

The second stakeholder session took place at the Birmingham City Chambers on Friday 18th September 2009. In attendance were representatives from:

- Advantage West Midlands
- Birmingham City Council
- Centro
- East Midlands Regional Assembly
- East Midlands Regional Development Agency
- Metro
- Newcastle City Council
- West Midlands Regional Assembly

Session One

Julie Mills detailed the objectives of Greengauge 21's programme and explained the background to the work, also noting the relationship with the HS2 company and Network Rail's *New Lines* study. JM made it clear that Greengauge 21's work was always focused on the development of an entire high-speed network and to look at the network in a context broader than just transport.

In particular, JM noted the need for the *Fast Forward* report to be clear on why High-Speed Rail is required and the development of the guiding principles for the development programme. JM went on to explain the findings of the attitudinal research undertaken on the travelling public and how it could be summarised as 'save time to make time'. Major issues coming out of this research included the level and complexity of fares, the feeling of exclusion by young people from making last minute decisions to travel and the wish for an easy, hassle-free end-to-end journey. It is clear that the needs of the consumer should be built into the design of any High-Speed Rail network to make it appealing, helping to attract customers to it (particularly regarding fare structures and the operation of a seven-day railway). The research also found that 78 per cent of respondents thought that High-Speed Rail is essential for Britain's economic future, 95 per cent thought it an appealing concept. They did though express questions around who would deliver the scheme and how it would be funded.

The carbon credentials of High-Speed Rail were presented, comparing its performance against conventional rolling stock. Issues such as load factors, stopping patterns, and decarbonised energy generation were highlighted as being important for the discussion of sustainability. Network Rail's recent *New Lines* report also examined the environmental impacts of construction, but Greengauge 21's report does not – Network Rail estimated that construction could add around 25 per cent to operation figures for emissions. The report also compares high-speed trains against other modes – car and air – and comes out very favourably, even when construction is factored in.

Session One – feedback

It was asked whether the case for High-Speed Rail had been compared against conventional rail when it came to enhancing capacity. JM referred to the earlier work undertaken by Atkins for the Strategic Rail Authority which demonstrated that the additional speed helped to make the business case as it delivers modal shift. Network Rail's recent analysis showed that as speed increased costs also increased but the benefits increased at a much faster rate.

It was stressed that the case for High-Speed Rail had to be made on a number of levels, not just carbon reductions, or increased capacity. A call was made though for some clear 'killer facts' on the environment which would help to make the case. JM highlighted the reduction of one million tonnes of carbon per year, mainly as a result of the shift from air travel as Greengauge 21's network includes Scotland.

Concerns were expressed that the car lobby would be looking for opportunities to attack the report. JM noted that motorways need more land take than rail lines. It was suggested that pictures be produced showing how 1,000 passengers could disembark at London against how many cars this would require.

The impact that the Government's potential failure to de-carbonise electricity generation would have on Greengauge 21's carbon figures was questioned. JM explained that in putting the figures together, ATOC had used two sets of figures – one based on the Government's energy commitments, the other where the commitments are delivered but over a longer period of time. Under both scenarios, High-Speed Rail comes out favourably. It was suggested that more work may need to done in this area, preferably by an independent organisation, or possibly jointly with the roads lobby. It was also noted that although the car fleet may shift to electricity for its fuel congestion would remain an issue.

The role that consumer research was playing in HS2's work, and whether Network Rail had undertaken any was posed. JM was not aware of any but believed that Greengauge 21's work was helping HS2 understand what the travelling public want from High-Speed Rail.

A discussion took place over the levels of fares suggested in the report, and whether these were robust. JM explained that the figures quoted were intended only to be an indication of likely starting fares and were based on the existing HS1 levels (removing the cost of the use of the Channel Tunnel). More work would be required in the development of a pricing structure.

The role of the development of effective local services was raised with JM suggesting that possible actions need to be considered in the next stage of High-Speed Rail's development. It may, JM suggested, be that High-Speed Rail can help make the economic and business case for such complementary measures.

High-Speed Rail's ability to offer a 7-day service was cited as a powerful message.

Session Two

The main part of the meeting detailed what a national High-Speed Rail network might look like with Greengauge 21's conclusion that two north-south routes are required to deal with capacity issues (HS-NW and HS-NE). In addition, three east-west routes are examined but a

staged upgrade could be considered on some routes. City centre stations are required both for the business case but also to ensure development opportunities and regeneration. Edge of city stations could, in some places, act as transport hubs (i.e. airports often enjoy good road links) and complement the city centre stations. The network would have connections to the existing system as interoperability will help spread the benefits.

These plans would deliver a step-change in journey times, for instance London to Glasgow or Edinburgh in 2 hours 30 mins with no stops with all-new infrastructure, or 2 hours 40 minutes with one stop. Birmingham to Paris would take around 3 hours so could attract modal shift from air.

The work suggests the use of the internationally accepted UIC GC gauge which also allows for double-deck trains.

HS-NW has the best business case but the case remains for HS-NE. However, a HS-NE link from Newcastle to Edinburgh would be more of a challenge as an existing High-Speed Rail link between London and Scotland would already exist. However, arguments around network resilience would remain strong.

The role of Heathrow was discussed as was the phased development of a potential network – the HS-NW from London to Manchester should be first (which includes links with Heathrow and HS1), and then consideration given to its extension to Scotland. This extension has a very good Benefit:Cost Ratio (BCR) primarily because of the shift from air.

The 'reverse S' style network had also been tested but this did not deliver sufficient journey time improvements or capacity enhancements.

HS-NE has a good business case and should be integrated with plans for the upgrading of the East Coast Main Line to help optimise the work due to take place. The Trans-Pennine route is more difficult, both on environmental and cost grounds, so the report considers a mix of electrification, upgrades and mixed-use lines.

Greengauge 21 has worked with Transport for London on issues around accessing London, disbursement of passengers etc. The case for a station at Heathrow is helpful to London as it would help to relieve capacity issues. Heathrow could, it was suggested, follow a French-style through route approach (such as Charles de Gaulle airport) and it helps the business case if it can be made to serve the whole network.

Phased implementation did not mean that all areas would not benefit if HS-NW is delivered first. For instance, a link to the Midland Mainline would help to deliver benefits to Sheffield and Newcastle.

Session Two – feedback

The experience of other countries in designing their network was discussed. JM noted the French experience of choosing which stations to serve on a network which has resulted in some uneconomic services being provided. There is no one answer to this issue and it, instead, often comes down to political decisions. The issue of released capacity also has to be dealt with. The role of politicians in signing up to a network and the phasing of its development was considered central to the success of any scheme and this, it was believed,

would also deliver the certainty that the private sector would require to become involved in its development.

Some cities, it was suggested, may lose existing services to/from London if a High-Speed Rail network were to be delivered. This was an issue which would have to be worked on and considered as part of the design on any scheme.

It was asked whether the money spent on the West Coast Main Line upgrades had been wasted. This was not considered to be the case as a relatively small proportion was spent on upgrades with the rest going on renewals required to bring the infrastructure up to modern standards. The programme had delivered benefits, including reduced journey times.

How best to serve Heathrow as part of a network was considered. JM highlighted that placing it at the heart of a network of through services, with a station at the airport itself, delivered the best business case. The challenge for HS2 was noted as being delivering a recommendation on Heathrow, with a business case, when only one line is being developed.

The need to demonstrate the economic benefits for all parts of the country from the outset of any plans was raised. JM stressed that these would come from released capacity and the use of the existing network as well as any new lines.

It was asked whether Wales was happy with the plans, and it was believed that they were content and knew that the needs of the country were being seriously considered in the development of High-Speed Rail.

If a network is developed, the plans for the East Coast Main Line should be examined as a matter of priority, it was suggested. It was agreed that it may be possible to delay or cancel some planned works saving some investment,

It was asked whether serving Northern Ireland had been part of the remit of the work but it was not. It was an issue which could be looked at in the future.

Session Three

Largely dealing with appraisal, finance and the need for High-Speed Rail's integration with city and regional plans, this section looked at the financial costs involved in the development of a network. It was explained that the value for money calculations were based on the Government's latest guidelines and that appropriate sensitivity tests had been conducted.

A system would relieve capacity on the existing network and there would then be issues to address around what do with this capacity – regional services, more commuter services, opportunities for freight etc. It was explained that significant economic benefits accrued to all regions from High-Speed Rail. It was also important to look at a whole network otherwise there was a small, but significant, impact on those areas which would not be served if just a west coast route were to be implemented.

In relation to funding, a London-Birmingham-Manchester route would cost around £19bn and a range of options remain open to securing the finance required, such as a DBFT arrangement used on HS1. Open access provisions need to be considered in such discussions so the franchise and regulatory system has to be managed and dealt with as these issues relate to

affordability. Hypothecated charges could be levied against some transport users but that would only be part of the funding package. Staged payments would be required from Government and once construction was completed it could be handed to an infrastructure manager.

Integration with city and regional plans needs to take place to secure connectivity and regeneration. There are both good and bad examples on existing high-speed networks.

JM ended the session by explaining why High-Speed Rail should be included in the forthcoming National Policy Statement on national networks, the possible processes under which a network could be authorised and the possible role of HS2 going forward (with a broader remit being required).

Session Three – feedback

The issue of hypothecation was discussed with questioning on whether a Crossrail-style funding package was possible as it would largely be a national, rather than 'local', scheme. JM explained that the ideas presented in the *Fast Forward* report on funding sources were meant to act as an indication that some businesses that benefit, i.e. airports, may be in a position to contribute.

RDAs, it was suggested, need to capture the wider economic benefits from the proposal and more details were requested. These details, it was noted, would be available in an appendix to the main report. However, more work on the impact of phasing on wider economic benefits would be useful as part of the next stage of planning for High-Speed Rail.

It was asked what the stage of work would be for Greengauge 21. The future work of the organisation is currently being considered but Greengauge 21 will continue to exist. The Public Interest Group may commission work which attempts to fill in the evidence gaps which would, in turn, help make the case to politicians. There will be a hiatus until the HS2 report is made public so there may be a role for Greengauge 21 in helping to keep the debate alive and pushing for the inclusion of High-Speed Rail in the party manifestos.

Organisations, such as the Core Cities and the PTE Group, could, it was suggested, assist in the debate around phasing whilst continuing to argue the case for a complete network. There is also a need to communicate the case for High-Speed Rail beyond transport audiences. JM noted the importance of DBIS (Department for Business, Innovation and Skills) and Peter Mandelson in the debate going forward, and Infrastructure UK was also highlighted.

The session ended with a discussion of the role of the regions and RDAs in starting to build High-Speed Rail into their DaSTS (Delivering a Sustainable Transport System) priorities.

Greengauge 21 – Stakeholder Session, Monday 21st September 2009

Introduction

The third stakeholder session took place at the offices of Bircham Dyson Bell on Monday 21st September 2009. In attendance were representatives from:

- ATOC
- BAA
- British Chambers of Commerce
- City of London Corporation
- Centre for Cities
- CPRE
- Eurostar
- Institution of Railway Operators
- London First
- RAC Foundation
- Railway Industry Association
- South East England Development Agency
- Transport for London
- Welsh Assembly Government

Session One

Julie Mills (JM) detailed the objectives of Greengauge 21's programme and explained the background to the work, also noting the relationship with the HS2 company and Network Rail's *New Lines* study. JM made it clear that Greengauge 21's work was always focused on the development of an entire high-speed network and looked at the network in a context broader than just transport.

In particular, JM noted that the Fast Forward report had been clear on why High-Speed Rail was required and consideration of these guiding principles for the development programme had been a fundamental and early consideration. JM went on to explain the findings of the attitudinal research undertaken on the travelling public and how it could be summarised as 'save time to make time'. Major issues coming out of this research included the level and complexity of fares, the feeling of exclusion by young people when making last minute decisions to travel and the wish for an easy, hassle-free end-to-end journey. It is clear that the needs of the consumer should be built into the design of any High-Speed Rail network to make it appealing, helping to attract customers to it (particularly regarding fare structures and the operation of a seven-day railway). The research also found that 78 per cent of respondents thought that High-Speed Rail is essential for Britain's economic future, and 95 per cent thought it an appealing concept. They did though express questions around who would deliver the scheme and how it would be funded. Customers were looking for a step change in customer service and a quicker, but punctual, journey.

The carbon credentials of High-Speed Rail were presented, comparing its performance against conventional rolling stock. It was noted that earlier comments by Government, such as those in the 2007 White Paper, were not accurate on the carbon performance of High-

Speed Rail. Issues such as load factors, stopping patterns, and decarbonised energy generation were highlighted as being important for the discussion of sustainability and were all taken into account in the work on this issue undertaken by ATOC. Network Rail's recent *New Lines* report also examined the environmental impacts of construction, but Greengauge 21's report does not – Network Rail estimated that construction could add around 25 per cent to operation figures for emissions. The report also compares high-speed trains against other modes – car and air – and comes out very favourably, even when construction is factored in.

Session One – feedback

A discussion took place on the energy performance of High-Speed Rail and whether the figures had been 'future-proofed' for when it would open in around 2021, for instance using figures which compared High-Speed Rail to improved conventional rolling stock, i.e. not today's Pendolinos. Load factors, it was noted, would remain important in any case and that the average carbon content would need to be used to ensure that a fair comparison was being made. The sources of energy should also be considered and the position becomes more favourable over time. In any case, the draw from the grid for High-Speed Rail would only be around one per cent.

The definition of High-Speed Rail was raised with EU definition being 250 kph and above whilst Greengauge 21 has assumed that high-speed trains would operate at 320kph (200 mph).

The possible development of personal carbon budgets was noted and its impact on travel patterns discussed.

The impact of city centres was considered and whilst regeneration would likely occur, for instance in Birmingham, there were worries that nearby centres, such as Coventry, may lose out, for example through a less frequent rail connection to London. It was agreed that this was an issue which required more work.

The possible link between High-Speed Rail and Heathrow airport was questioned and JM explained that the Fast Froward report did look at the issue of Heathrow. There was some welcoming of the benefits of inter-alignment between Heathrow, Charles de Gaulle, and Schipol airports.

Session Two

The main part of the meeting detailed what a national High-Speed Rail network might look like with Greengauge 21's conclusion that two north-south routes are required to deal with capacity issues (HS-NW and HS-NE). In addition, three east-west routes are examined but a staged upgrade could be considered on some routes. City centre stations are required both for the business case but also to ensure development opportunities and regeneration. Edge of city stations could, in some places, act as transport hubs (i.e. airports often enjoy good road links) and complement the city centre stations. The network would have connections to the existing system as interoperability will help spread the benefits. The option of a four-track railway was noted but the costs involved and the issue of a terminus in London do not make this a viable option.

These plans would deliver a step-change in journey times, for instance London to Glasgow or Edinburgh in 2 hours 30 mins with no stops with all-new infrastructure, or 2 hours 40 minutes with one stop. Birmingham to Paris would take around 3 hours so could attract modal shift from air.

The work suggests the use of the internationally accepted UIC GC gauge which also allows for double-deck trains. The technical parameters of the work assumed 320km/h trains, 400 metres long with a capacity of 15 trains per hour.

HS-NW has the best business case but the case remains for HS-NE. However, a HS-NE link from Newcastle to Edinburgh would be more of a challenge as an existing High-Speed Rail link between London and Scotland would already exist. However, arguments around network resilience would remain strong.

The work also looked at a possible 'reverse S' shape network, as is currently being suggested by the Conservative Party, but it was found that this would not deliver the necessary journey time reductions for Scotland and would also not provided the capacity required.

The role of Heathrow was discussed as was the phasing of a potential network – the HS-NW from London to Manchester should be first (which includes links with Heathrow and HS1), and then consideration given to its extension to Scotland. This extension has a very good Benefit:Cost Ratio (BCR) primarily because of the shift from air.

HS-NE has a good business case and should be integrated with plans for the upgrading of the East Coast Main Line to help optimise the work due to take place. The Trans-Pennine route is more difficult, both on environmental and cost grounds, so the report considers a mix of electrification, upgrades and mixed-use lines. This would offer benefits to passenger (local and regional) and freight services, and well as connection to the High-Speed network and is a clear demonstration that High-Speed Rail is not just about links to London.

The electrification of the Great Western Main Line will allow High-Speed Rail services to run at 200km/h and a connection into Heathrow. The 'Fast Forward' report suggests a gradually phased development with capacity enhancement between Didcot and Wootton Bassett as the key priority. This approach would gradually build journey time improvements to Wales and the South West.

Greengauge 21 has worked with Transport for London on issues around accessing London, dispersal of passengers etc. The case for a station at Heathrow is helpful to London as it would help to relieve capacity issues. Heathrow could, it was suggested, follow a French-style through-route approach (such as Charles de Gaulle airport) and it helps the business case if it can be made to serve the whole network.

Phased implementation did not mean that all areas would not benefit if HS-NW is delivered first. For instance, a link to the Midland Main Line would help to deliver early benefits to Sheffield and Newcastle.

Session Two – feedback

The need to look carefully at connectivity and phasing was championed. JM agreed with this explaining that as well as looking at the phasing of routes it was also important to consider

appropriate services and how the benefits can be spread across the country from the outset of a network. For instance, having sub-fleets of trains would facilitate through services and broaden connectivity, such as occurs in Europe.

It was wondered about the level of tunnelling that would be required in London, and JM noted that whilst some will be required around terminus stations, for the HS-NW plans very little was required.

It was asked whether Greengauge 21 was confident about the ability to run trains every four minutes and this was confirmed to be the case as this was the experience of other systems, and had already been built into the design of other systems.

There was a call for more emphasis, in general, on an integrated analysis and not just transport analysis – that it was about journeys, not systems. There may also need to be look at the impact on Europe of projects, not just the UK. For instance, if High-Speed Rail were used to access Heathrow and then fly, the journey carbon may fall but the UK's carbon consumption would rise.

The possibility of a London orbital route was raised and JM noted that the work had included cross-London movements as part of the wider network.

It was considered that some of the journey times were optimistic given the time involved for braking, accelerating etc. JM detailed the thinking about the use of spurs from the network and how this meant that the journey times were accurate.

The journey time improvements to Wales were welcomed although a note of caution that electrification was not the same as high-speed was sounded. JM explained that a full 300 km/h route has not been tested as part of the work.

In relation to Heathrow, journey times and frequency were considered to be the most important elements of its inclusion in a High-Speed rail network, not whether it was serviced as a through station or a spur.

Concerns about building through a National Park as part of the Trans-Pennine work were expressed. JM stated that some tunnelling would be required but the aim of Greengauge 21's work had not been to decide on the orientation or alignments but instead to set out a strategic network. This means that more work would be required once general alignments were decided.

How High-Speed Rail stations would connect into city centres and existing local networks was discussed with a possible roll for rapid transit systems noted. It was agreed that journey time improvements could easily be lost if the connections to/from stations were not dealt with as well.

Session Three

Largely dealing with appraisal, finance and the need for High-Speed Rail's integration with city and regional plans, this section looked at the financial costs involved in the development of a network. It was explained that the value for money calculations were based on the Government's latest guidelines and that appropriate sensitivity tests had been conducted.

A system would relieve capacity on the existing network and there would then be issues to address around what do with this capacity – regional services, more commuter services, opportunities for freight etc. It was explained that significant economic benefits accrued to all regions from High-Speed Rail (approximately one-third to Scotland, one-third to the North of England and one-third to London and the South East). It was also important to look at a whole network otherwise there was a small, but significant, impact on those areas which would not be served if just a west coast route were to be implemented.

In relation to funding, a London-Birmingham-Manchester route would cost around £19bn and a range of options remain open to securing the finance required, such as a DBFT arrangement used on HS1. Open access provisions need to be considered in such discussions so the franchise and regulatory system has to be managed and dealt with as these issues relate to affordability. Hypothecated charges could be levied against some transport users but that would only be part of the funding package. Staged payments would be required from Government and once construction was completed it could be handed to an infrastructure manager. A full network would costs around £69 billion and has a Benefit: Cost Ratio of 3.5:1.

Integration with city and regional plans needs to take place to secure connectivity and regeneration. There are both good and bad examples on existing high-speed networks.

JM ended the session by explaining why High-Speed Rail should be included in the forthcoming National Policy Statement on national networks, the possible processes under which a network could be authorised and the possible role of HS2 going forward (with a broader remit being required).

Session Three – feedback

The role of the Regional Development Agencies in the debate on High-Speed Rail was mentioned, particularly in relation to improving economies and connecting population centres. There was a danger of being too London-centric in discussions over High-Speed Rail and instead the focus should be on reliable, high-quality, fast connectivity. However, it was noted that UK rail flows are dominated by movements in and around London so discussions would be required about capacity and achieving balanced growth elsewhere in the country. JM argued that High-Speed Rail deals with a number of the issues and challenges facing the country and the transport system, more generally. The difficulty was in conveying what is quite a complex message.

In relation to funding, the revisions being made to TEN-T funding and the consultations which are currently taking place, were said to offer opportunities for the development of High-Speed Rail in the UK. It was suggested that the UK had missed previous opportunities to utilise this potential funding stream and if such money could be used it would also help in providing confidence to the private sector.

The benefits of High-Speed for Wales was raised again and it was believed that the development of an improved, and possibly High-Speed line, would help to deliver a good business case for other projects, such as the electrification of the rail lines to the Valleys.

The location of stations was discussed with JM stating that this would vary between cities and regions and that, in some cases, it may be possible to leverage development funding.

Similarly, it was wondered where the finance to improve transport in the cities would come from if High-Speed Rail went ahead. JM cited Lord Adonis' comments that the project would need to be viewed as a national infrastructure project, not just a transport project and that this would help to address all the wider issues and requirements which would need to be looked at if the network were to deliver on its aims.

What happens to the capacity on the existing networks – road, rail etc – if High-Speed Rail were to operate was considered in some detail. On the existing rail services benefits would accrue to commuter services, freight, and local/stopping services as well as helping decongestion on the roads network, although this has not been measured in Greengauge 21's work. It was though a worry expressed by some that a lessening of congestion would simply generate more local road trips. It was suggested that High-Speed Rail would need to be appraised against the classic network, new station openings, electrification etc. in a bid to accurately measure the costs and benefits. JM noted that whilst Greengauge 21's work had not measured High-Speed Rail against the alternatives, the earlier work by Atkins had and it had fared well against motorways, airports and traditional rail. It was really up to the DfT to take a broader view of the all the alternatives.

The issue of funding was raised in the context of the effective leveraging of the secondary benefits of a High-Speed Rail network. In particular, the need to control costs and to learn from experiences abroad was cited as fundamental. A question was asked whether funding would be sought from business. This was not, JM stated, an area which had been developed in great detail but had instead been included in the work as an indication of where resources may be sought. The Government, however, remained the main source of finance.

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