

Cynulliad Cenedlaethol Cymru / National Assembly for Wales

Pwyllgor yr Economi, Seilwaith a Sgiliau/ Economy, Infrastructure and Skills Committee

Masnachfaint Rheilffyrdd a chyflwyno Metro / Rail Franchise and the Metro

Ymateb ychwanegol gan yr Athro Stuart Cole / Additional evidence from Professor Stuart Cole

SUPPLEMENTARY NOTES

SUPPLEMENTARY NOTE 1: ROLLING STOCK

Rolling stock and station waiting requirements

New rolling stock is needed for the new franchise if journey quality is to improve as this with station waiting quality are the primary passenger experience factors.

Before any move is made to procure rolling stock an analytical process has to be completed. This is

Demand > Capacity > Services > Rolling stock > Depot locations

Stage 1 Demand analysis

The expected growth rates in the rail passenger market have to be determined.

There is an assessment of risk transfer of course but which company takes the revenue risk – the franchisor (Government) or the franchisee train company).

Forecasting revenue over more than three years is a difficult task as markets change rapidly in retailing – clothing, food, motor cars, DIY, and of course railways and buses. Cost forecasting is also tricky as many transport companies have found in trying to forecast the price of oil products which once were only about five per cent of total costs but have now risen to nearly twenty per cent in some companies.

So a decision has to be made by Welsh Government on whether franchising is possible without the transfer of revenue risk. To achieve this, the franchise conditions have to be clearly set out and a whole range of possible options built in. This involves considerable vision and forward thinking and the provision of break clauses where neither party has unfair advantage.

This is not easy particularly for long term franchises. In 2003 for example when the Wales and Borders franchise was let forecasting the electrification of the southern network would be underway was not a consideration. The Government will be involved in revenue support interventions if it wishes to achieve other economic, social and environmental objectives thus accurate subsidy projections are essential.

Stage 2 Capacity

Having determined the potential demand levels the size of vehicle will have to match that and several options for future vehicle procurement have to be determined. The capacity of the rolling stock has to be balanced against purchasing vehicles in which space will never be used (thus 'overspending') and not procuring enough capacity making it necessary to procure at a later date either assuming the same vehicles are available or having a non-standardised fleet if demand expands.

Stage 3 Services

The services to be provided will vary from route to route. See Supplementary note 2

In all cases integration of train and bus services using the 4I's principle

Information + Interchange + Investment + Imagination

is vital to the success of the post 2018 rail franchise. This requires the reregulation of bus servicers in Wales as proposed in the Buses Bill for England currently going through both Houses.

Stage 4 Rolling Stock

Wales requires a mix of rolling stock to match the service requirements outlined above. They are:

- Metro style electric trains with three / four double double-door locations
- Regional electric express services with two / three double-door locations
- Regional diesel trains with two double-door locations
- Local diesel trains with two double-door locations

There are several options for rolling stock procurement and several potential suppliers. Please see Supplementary Information 1.

In evidence to the National Assembly Enterprise and Business Committee report *The Future of the Wales and Borders Rail Franchise* December 2013, both Professor Stuart Cole and a train leasing company, Porterbrook, advised that detailed plans should begin at that time to achieve deadlines in 2018 for new trains. The lead time for new electric trains can be 2 / 3 years and 3 / 4 years for diesel units. In exceptional circumstances if another order is in place with manufacturers for an appropriate train this time lag can be reduced slightly.

Cascaded stock v new trains and latest procurement date

Cascaded rolling stock will derive from existing franchises. This will require options to lease agreed with ROSCO's by the end of 2014 or a similar date with manufacturers if new trains are to be procured. This applies to both electric and

diesel trains. However cascaded rolling stock will require replacement within 15 years.

The fact that the current Wales and Borders franchise will have a good supply of local diesel trains (e.g. Class 150 / 158) this does not mean that they will automatically be available to the new franchise. The contractual arrangements will have to be made anew by the Welsh Government and the TOC. There is competition for trains (excluding Pacers) such as we have at present. The Northern franchise, for example, will take up trains in 2016 so the Government will have to be clear about Wales rolling stock needs if they are to get the best deal

Cascaded electric rolling stock which formed the basis of the south Wales electrification Transport Business Case to HM Treasury is currently in use on for example London Suburban Essex (e.g. Class 313 / 315) Greater Anglia services (Class 321) and on Thameslink from Bedford to Brighton (Class 319). New trains either have been ordered or are being negotiated for these services. In either event the existing trains are 20 years old and have an expected life of 15 years. The risk here is that the cascaded trains will not be available by 2018 and in Wales we will have electrified track and no electric trains.

These trains could be available from one of the ROSCO's. A complete refurbishment internally and mechanically would be required but they are cascaded (i.e. second hand) trains. This might not be acceptable both in terms of the image of Wales and its railways and maintenance and leasing economics.

Alternatively trains could be procured directly or through a Special Purpose Investment Vehicle (SPIV) 'owned' by the Government.

Which company if new build electric trains are chosen?

Although the Treasury's Transport Business Case was based on cascaded trains the Welsh Government can make a policy decision to lease or purchase (becoming a ROSCO itself) new electric trains.

The unit cost is reduced as numbers of train units purchased increases. The Welsh Government could buy trains in co-operation with other authorities. Merseyrail have to replace their complete fleet by 2018 and new trains are being procured for Thameslink and Crossrail in London. It should consider entering into a procurement agreement for new trains with such organisations.

There are three manufacturing companies:

Siemens produce the Desiro Class 380 which has operated successfully in Scotland since 2010 and has the advantage of a proven operating record

Hitachi produce their AT range of trains. The AT – 100 Metro suitable for Valley Lines (*CwmFro / Valley Vale Metro*) and the AT – 200 Regional. These are now in the design / prototype stage and may be available by 2018

Hitachi with Agility Trains, are also the providers of the Great Western Main Line InterCity electric trains and will have a maintenance depot in Maliphant Sidings, Swansea and therefore a rail presence in Wales.

Bombardier produces the 'S8' type rolling stock currently in use on the Metropolitan Line of London Underground. This is not a dissimilar service in terms of distance and mainly surface operation to Valley Lines... The local suburban version (same train different interior) the 'S7' recently introduced on the Hammersmith and City, Circle and District Lines and can be seen at Paddington Station. These have a similar profile to the other trains above. These are not deep level tube trains

There are also other sources

Arriva Trains Wales it should be recalled are owned by DB German railways who of course have a long standing supply relationship with Siemens. This is another channel that might be pursued. It has advantages and disadvantages.

Specialist rolling stock companies (ROSCO's) were created at rail nationalisation to lease rolling stock to train operating companies. The ROSCO's ownership is generally outside the railway industry and more in the financial sector.

There is an argument that government should own and lease to franchisors the rolling stock in particular new rolling stock but some suggest this is 'back door' part-nationalisation. This however is not being said about the DfT's actions as indirect financiers of the new Intercity Express Programme (IEP) trains for use on the Great Western Main Line. On this basis the Welsh Government with appropriate borrowing powers and a funding stream (Severn Bridge tolls have been suggested) could from 2018 become the owners of the Wales and Borders railway fleet. The Transport Wales Act 2006 does appear to give it those powers.

Stage 5 Depot location

Depots provide the operating base for maintenance (either routine or heavy) and overnight and off peak stabling of trains.

The location has to fit the logistics of train operations to minimise 'dead' mileage (out of service running) particularly at the start and end of the operating day. They also have to be located to minimise the recovery time (and passenger inconvenience) to replace a failed train. The present depot at Canton was designed for diesel trains and would require major changes or replacement for joint electric / diesel operations

SUPPLEMENTARY NOTE 2: TRAIN SERVICES

The intensive service on **Valley Lines Metro** should operate at eight – ten minute intervals. The Swansea – Cardiff – Bristol Temple Meads route will require an electric fleet to provide stopping and express services on a half hourly frequency to

supplement the InterCity IEP London service and the Great Western Franchise Cardiff – Portsmouth Harbour service.

There is a decision on whether this should operate as a tram (light rail) or a heavy (conventional) rail basis. Trams operation could provide further penetration onto the road network into roads such as Greyfriars Road and Westgate Street and the planned public transport interchange.

Carmarthen – Manchester should continue on an hourly basis. It provides for Wales the link between south and mid Wales with bus or rail connections at for example Pontypool, Abergavenny, Hereford Church Stratton and Shrewsbury. This should remain a part of the W&B franchise as it provides an essential link between south Wales and parts of mid and north Wales and has a limited role in England. It also provides one through service each hour between Carmarthen and Cardiff.

Aberystwyth – Birmingham through services. This route provides commuter and international airport journeys and should be retained within the W&B franchise

To separate these two sets of services at Shrewsbury as has been suggested by the DfT and HM Treasury detracts from the current convenient through journeys provided. Shrewsbury Station has insufficient track / platform capacity for interchange; train unit and train driver interchange between companies / franchises presents serious negative implications for insurance, financial penalties for late running and customer convenience – the most important element form this Committee's consideration.

On the **Cambrian Line to Aberystwyth** an hourly service is now operationally possible with connections at Machynlleth for the Pwllheli service

Services **to / from west Wales** would be expected to increase in frequency providing a half hourly service between Swansea, Llanelli, Carmarthen and Whitland and hourly to Pembroke Dock and Milford Haven. Whitland should become a major park and ride facility using available railway land and its nearness to the A 40 trunk road. These west Wales diesel services will require a change at Swansea into a high frequency (3 / 4 trains per hour) electric service east of Swansea.

The **Heart of Wales** line services require the results of the current analysis into its markets and if / how a five train a day service may be justified.

Wrexham – Bidston services are currently a diesel service and thus a W&B franchise operation as Merseyrail is entirely electric. The logical objective is to electrify the line and create a 'circle line' service between Liverpool – Birkenhead –

Chester – Wrexham General – Wrexham Central - Wirral Stations – Bidston – Birkenhead – Liverpool. When this is complete the service would transfer to Merseyrail with a Memorandum of understanding between Welsh Government and Merseytravel on fares, train frequencies and reliability and service interchange for Welsh travellers.

The Liverpool City Region Combined Authority is looking to bi-modal trains to transform the Borderlines Line but the most likely option in the shorter term is to double the frequency of the existing diesel service. This would still require changing trains at Bidston.

A key impact to be considered in this ‘North East Wales Metro’ is the traffic reduction possibilities on commuting routes into Chester and Liverpool centre

On the **North Wales Main Line** the combined services of the Wales and Borders and the West Coast Main Line will require increased capacity to match expected growth. The electrification on this route should begin within the timespan of the next franchise beginning in Control Period 6 (2024 – 2019)

Llandudno to Blaenau Ffestiniog services will continue to have a summer peak demand.

SUPPLEMENTARY NOTE 3: FRANCHISE – ADDITIONAL LINES; INFRASTRUCTURE NEEDS

Additional lines, enhancements to existing lines, new stations or other infrastructure – set out below are investment options

Electrification

- Valley Lines and Vale of Glamorgan (*CwmFro Metro*)
- North Wales Main Line
- South Wales Main Line
- Marches Line

Higher line speeds on primary routes

Creation of a *CwmFro / ValleysVale Metro*

Increase in capacity to meet future demand

High Speed Rail between Bristol / Cardiff (HS3) and London

Integrated public transport policy and planning (bus/rail/car/cycle/taxi)

Current investment

Network speed and capacity improvements CP 4

- Aberystwyth – Shrewsbury frequency increased to 1 tph
- Cardiff area re-signalling
- Track doubling from Cockett (Gowerton) to Llanelli and the new Afon Llŵchwr viaduct provides capacity for increased service frequency west of Swansea (e.g. half hourly to Llanelli / Carmarthen and hourly to Pembroke Dock and Milford Haven)
- Re-signalling of the GWML and SWML

In the case of increased capacity provisions for Aberystwyth and Llanelli, the current shortage of rolling stock makes the increase in frequency unlikely. However if electrification is introduced in time for the next franchise in 2018 (the target date) then considerable diesel rolling stock will become available for refurbishment and re-releasing to the Wales and Borders franchise (please see section on rolling stock above)

Investment - planned/under consideration

Network speed and capacity improvements CP5 and beyond

- *Valley Lines / CwmFro* electrification / *City Line* capacity
- SWML Electrification
- Wrexham – Chester redoubling
- Wrexham / Bidston / Liverpool / Chester electrification

New / reopened stations / increased frequency

- Gateway Wales – Cardiff Airport frequency at 3 tph
- Bridgend frequency increased to 2 tph
- Swanline stations: east - increased frequency
- Queen Street Station Cardiff – two new platforms to increase capacity; new frontage to improve station quality
- Cardiff Central Station new platform for valley Lines; new south side entrance to improve passenger experience. The role of Cardiff Central Station in the proposed transport interchange – including rail, bus, car setting down / picking up, cycles, walkers, taxis, car parking
- Swansea Station - £3m refurbishment of the platforms and redesigned concourse. Interchange issues with buses remains

Integrate bus and rail/car and rail

Additional P&R stations; expanded capacity at existing P&R

P&R becomes significant player to/from:

- Whitland station P&R (enlarged to major regional P&R)
- Central Cardiff/Newport/Swansea
- Port Talbot Parkway
- Swanline (e.g. Gowerton, Baglan. Skewen)
- Llanelli , Carmarthen

New * P&R / increased capacity p&r (examples)

- SWML/ *South Wales Metro De Cymru*
- Bridgend
- Pencoed
- Llanharan
- Pontyclun
- St Mellons *
- Llanwern *
- Coedkernew *
- Severn Tunnel Junction

CwmFro / ValleysVale Metro (South)

- Gateway Wales – Airport *
- Llantwit Major
- Barry Docks *
- Dinas Powys (? Land availability) *

CwmFro / Valleys/Vale (North)

- Llandaf
- Taffs Well
- Trefforest
- Abercynon
- Merthyr Tydfil (to include enlarged bus facilities)

Potential new / re-opened lines

- Beddau / Talbot Green / Creigiau to Danescourt (City Line)
- Re-opened lines: Creigiau from *City Line*; Aberdare to Hirwaun
- New lines and river bridge Coryton to Radyr (for inner circle line)

- Aberdare – Hirwaun
- Vale of Glamorgan line – branch to Gateway Wales / Cardiff Airport (Govt. owned); PPP / Section 106 scheme.

Platform extensions

On planned electrified services the current platforms will mainly accommodate any 4-car sets being considered. However the City Line (Radyr to Cardiff Central via Danescourt) platforms will require extending. If 6-car sets are to be used some platforms will accommodate them but all Valley Lines platforms will require extensions to accommodate 8-car sets required if passenger demand rises significantly in the future

Cardiff Central

The current annual passenger footfall is 13m; by 2028 this is expected to reach 23m (Network Rail estimates). Capacity was increased with platform 0 some years ago and platform 8 opened in 2017. However platform with may not be consistent with safety requirements at peak periods. In addition with Cardiff aiming to be an events city as well as an economically successful city it is clear during major events that Cardiff Central was not designed to move 35k to 50k passengers each day (as has happened in rugby events (with concentrated post- match departures and during the Christmas shopping period 2017). Additional platforms will be required and a suggested solution to the west of the station where development land could be available (Brains brewery site)

SUPPLEMENTARY NOTE 4: COMPETITIVE FRANCHISING – BENEFITS OF SUPPLY SIDE COMPETITION

Whichever of the options outlined above is selected there will be a requirement for competitive procurement referred to here as supply side competition or competition for the contract to operate the Wales and Borders rail network. The only exception could be Option 3 above where the Government owned NfD Company has sole position in the process

There are significant benefits to be derived from the franchising system whether it is competition between PLC's as at present, Not for Dividend companies or Co-

operative suppliers. The control of the rail network remains in the hands of the Welsh Government. The benefits of franchising are:

- it allows competition in terms of service provision ideas and funding levels
- it provides a more secure train market and service not entirely dependent on the commercial market
- it allows other economic, environmental and social factors to be taken into account
- it prevents instability in the market through an operator of the last resort i.e. the Welsh Government (see the parallel in South Central and the east Coast Main Line)
- it retains network benefits such as integration of services within the Welsh operation and in relation to Great Britain rail operations
- it prevents 'cherry picking' of the most profitable routes leaving loss making operations to the public authority (under free market competition)
- it gives value for money
- it can provide for the transfer from one operator to another and any phased changes required in connection with rail electrification
- subsidy forecasting can be more accurate
- efficiency without instability
- Integrated bus and rail branding
- increase integration of timetables / ticketing / inter TOC discounts

Professor Stuart Cole

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