



House of Commons
Welsh Affairs Committee

The cancellation of rail electrification in South Wales

First Report of Session 2017–19



House of Commons
Welsh Affairs Committee

The cancellation of rail electrification in South Wales

First Report of Session 2017–19

*Report, together with formal minutes relating
to the report*

*Ordered by the House of Commons
to be printed 15 May 2018*

Welsh Affairs Committee

The Welsh Affairs Committee is appointed by the House of Commons to examine the expenditure, administration, and policy of the Office of the Secretary of State for Wales (including relations with the National Assembly for Wales).

Current membership

[David T. C. Davies MP](#) (*Conservative, Monmouth*) (Chair)

[Tonia Antoniazzi MP](#) (*Labour, Gower*)

[Chris Davies MP](#) (*Conservative, Brecon and Radnorshire*)

[Geraint Davies MP](#) (*Labour (Co-op), Swansea West*)

[Glyn Davies MP](#) (*Conservative, Montgomeryshire*)

[Paul Flynn MP](#) (*Labour, Newport West*)

[Simon Hoare MP](#) (*Conservative, North Dorset*)

[Susan Elan Jones MP](#) (*Labour, Clwyd South*)

[Ben Lake MP](#) (*Plaid Cymru, Ceredigion*)

[Anna McMorrin MP](#) (*Labour, Cardiff North*)

[Liz Saville Roberts MP](#) (*Plaid Cymru, Dwyfor Meirionnydd*)

Powers

The Committee is one of the departmental select committees, the powers of which are set out in House of Commons Standing Orders, principally in SO No 152. These are available on the internet via www.parliament.uk.

Publication

Committee reports are published on the Committee's website at www.parliament.uk/welshcom and in print by Order of the House.

Evidence relating to this report is published on the [inquiry publications page](#) of the Committee's website.

Committee staff

The current staff of the Committee are Kevin Maddison (Clerk), Ed Faulkner (Second Clerk), Anna Sanders (Inquiry Manager), Rhiannon Williams (Committee Specialist), Susan Ramsay (Senior Committee Assistant), Kelly Tunnicliffe (Committee Assistant), George Perry (Media Officer) and Ben Shave (Media Officer).

Contacts

All correspondence should be addressed to the Clerk of the Welsh Affairs Committee, House of Commons, London SW1A 0AA. The telephone number for general enquiries is 020 7219 8363; the Committee's email address is welshcom@parliament.uk.

Contents

Summary	3
1 Introduction	4
Background	4
Our inquiry	5
2 The decision to cancel electrification	7
Background to the cancellation	7
Reaction to the cancellation	10
3 Bi-mode trains	12
Journey times	12
Other factors	12
Environmental impact	13
Conclusion	14
4 Investment in Welsh rail and other options for the Cardiff to Swansea route	15
Welsh Government view and investment in Welsh rail	15
Options for the Swansea-Cardiff line	16
Straightening the track	16
Swansea Bay Metro	17
New technologies	19
Conclusions and recommendations	20
Annex: Work recommended	23
Formal minutes	24
Witnesses	25
Published written evidence	26

Summary

In July 2017, the UK Government cancelled the planned electrification of the railway line between Cardiff and Swansea. The cancellation followed failures by Network Rail and the Department for Transport to manage the Great Western rail modernisation programme effectively. It has left local people and businesses feeling badly let down.

Instead of electrification, services between Cardiff and Swansea will be provided by new 'bi-mode' trains running in diesel mode. The UK Government has argued that, on this route, electric trains would have offered little saving in journey times over bi-modes. Electrification would, however, have brought other advantages, including fewer emissions.

We have heard serious concerns about a lack of funding for the Welsh railways, compared with other parts of the UK, which have been exacerbated by the cancellation of electrification. There is a strong case for investing the money saved in rail infrastructure in Wales; the UK Government should engage the Welsh Government in identifying other cost-effective options for improving the rail network in Wales. It should consider the case for straightening the track between Cardiff and Swansea to enable trains to run at higher speeds. It should carefully consider the merits and potential costs of the recent proposal for a Swansea Bay Metro, a proposal which has strong support from business and community leaders in the area. It is particularly important to consider this idea in light of the Swansea Bay City Deal. As new technologies such as battery and hydrogen powered trains come on stream, Wales should be considered a prime candidate for their introduction.

1 Introduction

Background

1. In 2009, the UK Government announced its intention to electrify the Great Western mainline between London and Swansea within eight years. The then Secretary of State for Transport, Lord Adonis, said that electrification would enable the introduction of a “predominantly electric” fleet of high speed trains which would “offer faster journey times, more seats, greater reliability, improved air quality and lower carbon emissions than their diesel equivalents, as well as being cheaper to buy, operate and maintain”.¹

2. Since 2009, while the UK Government has consistently reiterated its commitment to electrify the line from London to Cardiff, it has changed its position on the electrification of the line between Cardiff and Swansea three times. In March 2011, the then Secretary of State for Transport, Rt Hon Philip Hammond MP, while confirming the Government’s intention to electrify the London to Cardiff line, stated that there was “not, at present, a viable business case for electrification of the main line between Cardiff and Swansea”.² In July 2012, Mr Hammond’s successor, Rt Hon Justine Greening MP, reversed this decision, and announced that the Department for Transport and the Welsh Government had agreed on a proposal to complete electrification of the line to Swansea. She stated that this investment, along with the electrification of the valley lines into Cardiff, would “help to unlock significant economic and employment opportunities in some of the most deprived parts of Wales”.³

3. In 2014, the then Prime Minister David Cameron affirmed his commitment to the plans, saying:

I am delighted to announce today that we are going to press ahead with the electrification of the Valley Lines. After years of neglect, this part of Wales will finally get the infrastructure it needs with faster, more modern, more efficient trains and the impact will be huge. Spreading the employment opportunities from Cardiff and out to the Valleys and helping hardworking people from all parts of this great nation to get on. This has only been possible because of the UK government and shows our long-term economic plan in action and working for the people of Wales.⁴

4. The latest decision about the line to Swansea was taken in July 2017 when the Secretary of State for Transport, Rt Hon Chris Grayling MP, announced that the Government no longer intended to electrify this stretch of the railway. He argued that electrification was no longer necessary because the Government had procured new Intercity Express (IEP) trains, which, through ‘bi-modal’ operation, would “switch seamlessly between electric and diesel power”. Mr Grayling said that these new trains would deliver “faster journeys and more seats for passengers without disruptive work to put up wires and masts along routes where they are no longer required”.⁵

1 Department for Transport, [Britain’s Transport Infrastructure: Rail Electrification](#), July 2009, para 2

2 HC Deb, 1 March 2011, [col 186](#)

3 HC Deb, 16 July 2012, [col 688](#)

4 10 Downing Street press release, [“PM announces rail package to electrify Valley Lines and boost Welsh economy”](#), 21 November 2015

5 Department for Transport press release, [“Rail update: bi-mode train technology”](#), 20 July 2017

Table 1: Timeline of announcements on Cardiff to Swansea rail electrification

Date	Transport Secretary	Decision	Comments
July 2009	Lord Adonis	Go ahead	<p>“Work will begin immediately on the electrification of the Great Western Main Line between London, Reading, Oxford, Newbury, Bristol, Cardiff and Swansea, to be completed within eight years.”⁶</p> <p>“These trains will offer faster journey times, more seats, greater reliability, improved air quality and lower carbon emissions than their diesel equivalents, as well as being cheaper to buy, operate and maintain.”⁷</p>
March 2011	Philip Hammond	Cancel	<p>“I regret to have to say that there is not, at present, a viable business case for electrification of the main line between Cardiff and Swansea.”⁸</p>
July 2012	Justine Greening	Go ahead	<p>“My Department and the Welsh Government have agreed on a proposal for the electrification of the valleys lines into Cardiff and for the completion of the electrification of the Great Western main line to Swansea.</p> <p>“That is fantastic news for people in south Wales [...] I expect that investment to help to unlock significant economic and employment opportunities in some of the most deprived parts of Wales.”⁹</p>
July 2017	Chris Grayling	Cancel	<p>“New bi-mode train technology offers seamless transfer from diesel power to electric that is undetectable to passengers [...] we no longer need to electrify every line to achieve the same significant improvements to journeys”.¹⁰</p>

Our inquiry

5. Following the announcement in 2017, we agreed to launch an inquiry into the Government’s decision to cancel electrification between Cardiff and Swansea. In three oral evidence sessions we heard from railway experts, representatives of the industry and the Minister of State for Transport, Jo Johnson MP. We also received written evidence from a range of stakeholders, including local authorities, businesses and organisations with an interest in the railways. We are grateful to all those who gave evidence to us.¹¹

6 Department for Transport, *Britain’s Transport Infrastructure: Rail Electrification*, July 2009, para 1

7 Department for Transport, *Britain’s Transport Infrastructure: Rail Electrification*, July 2009, para 2

8 HC Deb, 1 March 2011, [col 186](#)

9 HC Deb, 16 July 2012, [col 688](#)

10 Department for Transport press release, “[Rail update: bi-mode train technology](#)”, 20 July 2017

11 A full list of witnesses and written evidence is available on pages 25–26.

6. Our Report falls into three parts: in Chapter 2, we look at how the most recent decision to cancel electrification between Cardiff and Swansea came about; in Chapter 3, we consider the bi-mode trains that will now operate on the Cardiff-Swansea route, and compare their operation to that of purely electric or diesel trains; in the final Chapter, we look at what other options might be available to enhance the experience of rail users in South Wales, and identify new investment opportunities in Welsh rail, given the cancellation of the electrification programme. In particular, we recommend that the Government seriously considers all options for improving the South Wales railway, including the Swansea Metro system, and the re-routing of the line to reduce journey times between Swansea and Cardiff.

2 The decision to cancel electrification

Background to the cancellation

7. The decision to cancel electrification between Cardiff and Swansea came after concerns were raised about large increases in the estimated costs of the Great Western modernisation programme. In November 2016, a National Audit Office (NAO) value-for-money report into the programme found that the estimated cost of electrification between Maidenhead and Cardiff alone would be £2.8 billion, an increase of £1.2 billion against 2014 estimates and £1.7 billion against Network Rail's 2013 estimate.¹² Alongside these cost increases, the NAO reported that there would be between 18 and 36 months of delays to electrification compared to Network Rail's 2014 plans. The Department for Transport (DfT) estimated an increase of £330 million in its net costs as a result of the delays.¹³

8. The estimated costs of electrifying the Cardiff to Swansea stretch of line also increased dramatically. A Welsh Government business case in June 2012 estimated the costs to be £156 million.¹⁴ The NAO report stated the costs in March 2014 were estimated to be £295 million.¹⁵ By August 2016 this figure had risen to £433 million.¹⁶

9. As a result of the increase in costs, the benefit-cost ratio (BCR) of the full programme was substantially reduced. The DfT business case in 2015 suggested that the programme had a BCR of 2.4:1.¹⁷ The NAO's assessment in November 2016 found that this ratio had fallen to 1.6:1.¹⁸ This ratio subsequently fell even further: in a letter to the Transport Committee in October 2017, Mr Grayling reported that the benefit-cost ratio for full electrification from London to Swansea was now only 1.07:1, for the London to Cardiff stretch 1.13:1, and for the line between Cardiff and Swansea, 0.28:1.¹⁹ This means that over the course of two years the value for money ratio fell, on the Government's own measure, from 'high' to 'poor'.²⁰

10. The increase in cost estimates appears largely to be the result of poor planning and project management on the part of Network Rail and the Department for Transport, matters that have already been examined in detail by the NAO and the Committee of Public Accounts (PAC). The NAO stated that "Network Rail's approach to planning and delivering the infrastructure programme further increased costs", noting that it did not work out a 'critical path', that it had not managed the technical challenges and "did not conduct sufficiently detailed surveys of the locations for the structures".²¹ The PAC, in its subsequent report, endorsed the view that "Network Rail failed to plan the infrastructure work properly".²²

12 National Audit Office, [Modernising the Great Western Railway](#), November 2016, para 10

13 National Audit Office, [Modernising the Great Western Railway](#), November 2016, "Key facts", p 4

14 Welsh Government, [Great Western Mainline Electrification Cardiff to Swansea Outline Business Case](#), June 2012, p 26, Table 3.1

15 National Audit Office, [Modernising the Great Western Railway](#), November 2016, p 33, figure 12

16 National Audit Office, [Modernising the Great Western Railway](#), November 2016, p 13, figure 2

17 Benefit cost ratios set out the present value of benefits compared to the present value of costs. The cost-effectiveness of transport projects is assessed using the UK Government's [Transport Analysis Guidance](#) (WebTAG).

18 National Audit Office, [Modernising the Great Western Railway](#), November 2016, "Key facts", p 4

19 [Letter from the Secretary of State for Transport to the Chair of the Transport Committee](#), 25 October 2017

20 DfT, [Value for money assessments](#), archived 2016

21 National Audit Office, [Modernising the Great Western Railway](#), p 8 HC (2016–17) 781, p 5

22 Committee of Public Accounts, Forty Fourth Report of Session 2016–17, [Modernising the Great Western Railway](#), HC 776, conclusion 2

11. A particular project management issue raised with us was Network Rail's failure to establish which bridges needed to be raised to accommodate the necessary electrical infrastructure. Roger Ford, Industry and Technology Editor of *Modern Railways* magazine, told us:

I think they knew the bridges were there, but they did not move with sufficient alacrity to work out which bridges needed doing. [...] Bearing in mind the scheme was authorised in July 2009, one would have thought that as soon as the engineers got out they would have had a list of priority bridges where it was really essential to raise the bridge where we do not have an easy way through it.²³

12. Mark Carne, the Chief Executive of Network Rail, accepted that mistakes had been made. He said that the original cost estimate had been "very sketchy" and had been "based on historical data that was at least 20 years out of date, given that we have not done an electrification programme for 20 years".²⁴ On the issue of the bridges, he said that "the detailed costs associated with the modification to a bridge only reveal themselves when you do the detailed work" but he accepted that a lot of these costs had been "significantly underestimated".²⁵ Another issue had been the amount of access engineers had to the railway at night, which had reduced since the 1980s when electrification had last been carried out.²⁶ Mr Carne agreed that this was a problem Network Rail ought to have foreseen.²⁷

13. As well as the failings by Network Rail, the programme was also blighted by mismanagement on the part of the DfT. The NAO said that the Department "did not plan and manage all the projects which now make up the Great Western Route Modernisation industry programme in a sufficiently joined up way". It observed that the DfT did not produce a business case consolidating all elements of what became the Great Western programme until March 2015, more than two years after it had procured the trains to run on the route. It was over twelve months after Network Rail had begun its electrification work that the business case was finally produced.²⁸ This finding was echoed by the PAC, which also criticised the Department because it "failed to challenge Network Rail's plans effectively despite the very significant sums of public money at risk".²⁹

14. Roger Ford, from *Modern Railways* magazine, suggested that "not many" lessons had been learnt from failings in the Great Western programme. He said that the management organisation was still the same and the costs involved were still "fairly high". He suggested that there was a need "to start again on electrification and look at it from first principles: how do you do it? How are you going to do it?".³⁰

23 Q14

24 Q56

25 Q64

26 Q59

27 Q60

28 National Audit Office, *Modernising the Great Western Railway*, p 10 HC (2016–17) 781, p 7

29 Committee of Public Accounts, Forty Fourth Report of Session 2016–17, *Modernising the Great Western Railway*, HC 776, conclusion 3

30 Q11

15. Mark Carne from Network Rail, however, was adamant that “huge lessons” had been learnt. He said that of all Network Rail’s projects in the control period,³¹ the Great Western programme had faced “by far and away the biggest cost increase and, therefore, of course, has had an enormous amount of focus on why that occurred and what we have to do differently”.³² He added:

To me the critical lessons to learn are about the early stages in the project and the engagement with the client, the funder, about what it is they want, what the best way to deliver that outcome is, and to allow enough time to allow our engineers to do the costs before political announcements, bluntly, are made that signal that something is going to happen before anybody even realises what it is going to cost or how long it will take.³³

16. As a result of the failings on the Great Western Programme, the process for planning and carrying out improvements to the railway has been overhauled. The DfT told us that it had developed a new “pipeline” approach for enhancements to the railway, under which there would be “clear decision points for the progression of schemes, ensuring enhancements are only committed for the next stage (development, design or delivery) when they have been properly worked through”.³⁴ The Department said that it intended to avoid problems that had arisen in the past “where schemes were committed to too early before we were sure of the best way of delivering benefits to rail users and value to the taxpayer”.³⁵

17. In evidence to the Transport Committee, which is currently conducting an inquiry into rail infrastructure investment, the DfT said that, as a result of the enhancements pipeline approach, it had “more robust cost estimates and understanding of delivery timescales at the point we commit funds to the next stage”. It considered that the new approach would “allow Government to better manage the portfolio of enhancements”.³⁶

18. The failings and mismanagement on the Great Western programme have been well documented. We fully endorse the criticisms, made by our witnesses, the National Audit Office and the Public Accounts Committee, of the Department for Transport and Network Rail, and put on record our serious concerns about the basic failures in planning and project management. These failures have led to dashed hopes for those who had been promised improvements to the railway network between Cardiff and Swansea.

19. It is encouraging that Network Rail and the Department for Transport have introduced a new approach to address some of the most serious lessons learned from the Great Western Programme failures. We want assurances that their new processes are robust and would prevent similar problems arising in the future. We recommend that the Government commit to reviewing the effectiveness of the enhancements pipeline approach within 12 months. We also encourage the National Audit Office to examine how the new process is operating.

31 A ‘control period’ is the five-yearly planning cycle for the railways. Electrification was specified for control period 5 (CP5) running from 2014–2019; the industry is currently planning CP6 (2019–24).

32 Q80

33 Q81

34 Department for Transport ([CAN 0017](#)) para vii

35 Department for Transport ([CAN 0017](#)) para 4

36 Written evidence submitted to the Transport Committee, [INV 0031](#), para 15, published 15 January 2018

20. In Chapter 4, we consider, in light of the cancellation, alternative means to cut journey times between Swansea and Cardiff, such as the proposal to develop a Swansea Metro system, and the re-routing of the line to reduce journey times between Swansea and Cardiff.

Reaction to the cancellation

21. Much of the evidence we received expressed concern about the decision to cancel electrification. There was particular disquiet that the cancellation came after the UK Government had made a clear commitment to electrifying the line. The Industrial Communities Alliance Welsh Region, a local authority network primarily composed of councils in the Valleys, said that prior to Mr Grayling's announcement "various Government statements gave good reason to believe that the electrification to Swansea would be going ahead".³⁷ While on a number of occasions in 2016 Ministers were unable to say when electrification to Swansea would be completed,³⁸ the Government formally remained committed to the programme until the cancellation was announced in July 2017.

22. In its March 2018 report into the cancellation of the project, the National Audit Office cast doubt on the UK Government's ability to claim that the decision would not impact services. The report concludes that "it is too early to tell the extent to which the Department will be able to deliver the benefits of electrification without electrifying the three [Great Western Main Line; Midland Main Line; and Lakes Line] routes".³⁹ The same report indicated that the decision to cancel electrification gained the approval of the Prime Minister.⁴⁰

23. We were told that an electrified railway could make an area more attractive to investors, and, consequently, that the cancellation of electrification could have a negative effect on potential investment and wider perceptions of South Wales.⁴¹ Stuart Cole, Emeritus Professor of Transport at the University of South Wales, suggested that potential investors from overseas might ask questions as to why the investment was cancelled:

If an international investor reads that the electrification of the line stopped at Cardiff, the first question would be, "Why did it stop at Cardiff? Why are the British Government not prepared to invest west of Cardiff? There must be something". It becomes a criterion in their minds about, "Are we investing in the right place if this other investment is not taking place?"⁴²

37 Industrial Communities Alliance Welsh Region ([CAN 0006](#)) para 2.1

38 See, for example, HC Deb, 8 February 2016, [col 1404](#) [Claire Perry] and HC Deb, 6 December 2016, [col 129](#) [Chris Grayling]

39 National Audit Office, *Investigation into the Department for Transport's decision to cancel three rail electrification projects*, page 5

40 As above

41 Bridgend County Borough Council ([CAN 0020](#))

42 Q25

24. The UK Government said that it had not carried out a specific assessment of the impact of the cancellation on investment. Jo Johnson insisted, however, that because bi-mode trains would deliver some of the same benefits—particularly reductions in journey times—there would be little effect.⁴³ Brian Etheridge, Director of Network Services at the Department for Transport, did not think that investors “would be wholly concerned with just the method by which the train is being propelled”.⁴⁴

25. Furthermore, there are still serious questions as to why the UK Government deployed arguments relating to journey times to justify electrifying the line, if they now deny such benefits will not be lost as a result of the cancellation. If we now take Ministers at their word—and accept that journey times will not be impacted by the decision to cancel the electrification of the line—it must be concluded that Ministers used ambiguous language to justify their original decision. This is clearly in part the reason why there is such disappointment born out of their decision to cancel the project.

26. Concerns about investment decisions were brought home to us by the decision of Virgin Media, in May 2018, to close its media centre in Swansea and move a number of the jobs to Greater Manchester. The Leader of Swansea City Council, Cllr Rob Stewart, said that the announcement “deepens our concern about failure to invest in rail electrification to Swansea and the competitive disadvantage caused by HS2 in England”.⁴⁵ With HS2, journey times from London to Manchester will be around one hour, eight minutes, compared to around two hours, ten minutes now.⁴⁶ Journey times from London to Swansea will be reduced only to around two hours, 45 minutes, from around three hours now.⁴⁷

27. **We are concerned that the Government’s position on electrification has changed. The people using the line and local businesses feel aggrieved that they are not getting the electrified railway they were promised.** In the final chapter, we look at other projects the Government might consider for the South Wales railways.

43 Q132 [Jo Johnson MP]

44 Q135

45 Swansea Council, “[Council leader’s pledge on potential Virgin Media job losses](#)”, 4 May 2018

46 BBC News, “[What do we know about HS2](#)”, 17 July 2017

47 Department for Transport ([CAN 0017](#))

3 Bi-mode trains

28. The Secretary of State for Transport, Rt Hon Chris Grayling MP, when announcing the cancellation of electrification between Cardiff and Swansea, stated that the Government would only “electrify lines where it provides a genuine benefit to passengers which cannot be achieved through other technologies”.⁴⁸ In the case of rail travel between Cardiff and Swansea, the Government has stated that many of the benefits of electrification can be achieved by the introduction of new bi-mode trains. Each of the new Intercity Express bi-mode trains would deliver 130 additional seats, faster journey times and “improved connectivity from South Wales to London”. Mr Grayling said, on this basis, that electrification west of Cardiff was no longer necessary.⁴⁹

Journey times

29. The evidence we heard suggested that using bi-mode trains in diesel mode between Swansea and Cardiff would improve journey times to a similar extent as using electric trains.⁵⁰ Journeys between Swansea and London with the new bi-mode trains would be significantly faster than with the old diesel trains—with a saving of around 15 minutes—but these savings would be achieved almost entirely between Cardiff and London. We heard that there might be a minor time saving because of the trains’ ability to accelerate and decelerate more quickly but that the layout of the track between Cardiff and Swansea meant that there was little scope for an increase in speed. These limitations would still apply even if the plan to electrify the line had gone ahead and electric trains were used on this route. Mark Hopwood, the Managing Director of the Great Western Railway, set out some of the factors preventing an increase in speeds on the line between Cardiff and Swansea:

the nature of the track, the curvature and, therefore, the line speed. The calling pattern of the train: we could run non-stop trains between all sorts of places but often the stations intermediately are very important for those passengers and important revenue wise. The signalling system at the moment on that route would not support trains running beyond 125, but the train we are taking delivery of from Hitachi is designed to travel at up to 140 miles an hour.⁵¹

Other factors

30. While bi-mode trains may be able to deliver similar journey times to purely electric trains, we heard mixed views about their wider effectiveness. Roger Ford, Industry and Technology Editor at Modern Railways Magazine, warned us not to get “too hung up about journey time reductions”.⁵² In his written evidence, he raised a number of concerns about the bi-mode trains, describing them as a “sub-optimal solution”, and said that in both diesel and electric modes performance was “degraded [...] by either excessive weight or lack of power”.⁵³

48 Department for Transport press release, “[Rail update: bi-mode train technology](#)”, 20 July 2017

49 Department for Transport press release, “[Rail update: bi-mode train technology](#)”, 20 July 2017

50 Q25, 72

51 Q114

52 Q32

53 Roger Ford ([CAN0016](#)) para 2.1

31. The manufacturer, Hitachi Rail Europe, was, unsurprisingly, more positive about the performance of the trains, describing them as “lighter, cleaner and greener” than the existing diesel models. It added that they weighed only 5% more than electric-only models, meaning that there would be “no impact to performance”.⁵⁴

Environmental impact

32. There were particular concerns about the environmental consequences of the decision to cancel electrification, given that bi-mode trains would be operating with diesel engines between Swansea and Cardiff.⁵⁵ Railfuture Cymru/Wales, which campaigns for improved rail services, said that “cancelling a progressive electrification policy” was “not consistent with UK government policy to cease the production of diesel and petrol fuelled cars”.⁵⁶

33. A report published by the Institute of Mechanical Engineers in January 2018, whilst noting the flexibility of bi-mode trains, warned that their emissions were increased when they operated in diesel mode. It recommended that the DfT “conduct a series of trials on our existing diesel railway rolling stock, the new bi-mode trains and in major stations, to understand the level and effect exposure of pollutants has on our commuters and railway workers”.⁵⁷

34. One of the claims made for the Intercity Express bi-mode trains is that even in diesel mode they produce significantly fewer emissions than the old diesel ones. Their manufacturer, Hitachi Rail Europe, stated that the diesel engines “cut harmful emissions (PM10 [particulate matter] and [nitrous oxide]) by up to 90% compared to existing trains”.⁵⁸ The Minister, Jo Johnson, pointed to the “state of the art catalytic converters”, which he said converted nitrogen oxides into water. He argued that the bi-mode trains were “compliant with the most demanding and up to date standards in terms of emissions” and were “not the heavily polluting diesels of yore.”⁵⁹

35. Last year, the Government announced its intention to end the sale of all new conventional petrol and diesel cars and vans by 2040.⁶⁰ In a speech in February 2018, Jo Johnson announced the Government’s intention to take all diesel-only trains off the railway by 2040.⁶¹

36. Our colleagues on the Environment, Food and Rural Affairs, Environmental Audit, Health and Social Care, and Transport Committees recently published a Report on *Improving Air Quality*, which described air pollution as “a national health emergency”. Their Report said that a “step change in Government policy” was needed “to protect the public from poisonous air”.⁶²

54 Hitachi Rail Europe ([CAN0014](#))

55 See, for example, Timothy Rickman ([CAN 0008](#))

56 Railfuture Cymru/Wales ([CAN0010](#))

57 Institute of Mechanical Engineers, [A breath of fresh air: new solutions to reduce transport emissions](#), January 2018, p 5

58 Hitachi Rail Europe ([CAN0014](#))

59 Q166

60 Department for Environment, Food and Rural Affairs and Department for Transport, [UK plan for tackling roadside nitrogen dioxide concentrations](#), July 2017, para 6

61 Department for Transport, [speech by Joseph Johnson MP on a cleaner, greener railway](#), 12 February 2018

62 Environment, Food and Rural Affairs, Environmental Audit, Health and Social Care, and Transport Committees, [Improving Air Quality](#), First Joint Report of Session 2017–18, HC 433, para 11

Conclusion

37. We accept that, because of the layout of the Cardiff to Swansea line, electric trains would not have offered a significant saving in journey times over bi-modes. There are, however, a number of other advantages to electrification besides journey times, including environmental benefits. In Chapter 4, we explore the possibility of an electrified Metro system, which could also bring environmental benefits associated with electrification. We will also consider other possible changes to the track and route that could reduce journey times between Cardiff and Swansea.

38. The new Intercity Express bi-mode trains, even when running in diesel mode, will undoubtedly produce fewer emissions than the purely diesel trains they are replacing. It is, nevertheless, inevitable that there still will be some pollution when they run their diesel engines on the Cardiff to Swansea stretch of the line. Given serious concerns raised about air pollution, it is important that the Government does everything it can to reduce emissions. *We recommend that the UK Government and the rail industry carefully monitor the emissions from the Intercity Express trains on the route between Cardiff and Swansea, and publish the results on a six-monthly basis.*

39. *Using the results of this monitoring, the UK Government and the industry should identify ways in which the emissions from the Intercity Express trains can be reduced further. We would expect to see clear evidence of emissions being reduced. The UK Government should also use the results of its monitoring to inform its future strategy on the use of diesel. It should explore whether, if diesel cars and vans and diesel-only trains are to be phased out by 2040, there is also a case for ending the use of diesel engines on bi-mode trains.*

4 Investment in Welsh rail and other options for the Cardiff to Swansea route

Welsh Government view and investment in Welsh rail

40. Following the announcement that funding for electrification would be withdrawn, the Welsh Government Cabinet Secretary for Economy and Transport, Ken Skates AM, wrote to Mr Grayling to say that “for the UK Government to announce the cancellation of this scheme at this stage and through the press, with no prior warning, was hugely disappointing”. He called for the funds which would have been provided to electrify the line to Swansea—which he said were estimated to be £700 million—to be ring-fenced for projects in Wales.⁶³ Mr Skates’ press release also said that “although the Wales route area has around 11 per cent of the railway track, since 2011 it has only benefited from around 1.5 per cent of the money spent by the UK Government on rail enhancements”.⁶⁴

41. The UK Government and Network Rail do not recognise the £700 million figure referred to by Mr Skates. They suggested that the saving was around the £433 million referred to in the National Audit Office report.⁶⁵ Mr Skates told us the £700 million figure was from a BBC News article from July 2017, which quoted Professor Stuart Cole as saying that the cost could be £700 to £800 million.⁶⁶ Giving evidence to us in November 2017, however, Professor Cole said that £450 to £500 million was “the generally accepted figure”.⁶⁷

42. Furthermore, we received evidence that Wales could actually suffer detriment from the Government’s £55.7 billion flagship rail scheme, the new HS2 railway between London, the West Midlands and the North of England. Professor Stuart Cole told us that HS2 would be “a negative for south Wales because many other cities become a lot more attractive, not only in journey time, but in this very new, very smart technology”.⁶⁸ A 2010 report by Greengauge 21, drawing on analysis by KPMG, suggested that HS2 could reduce employment growth in Wales by 21,000 jobs between 2007 and 2040.⁶⁹ In addition, data from a further KPMG study obtained through a freedom of information request by BBC Newsnight in 2013 suggested that both Cardiff and Swansea would suffer a reduction in economic output as a result of HS2.⁷⁰

63 Welsh Government press release, “[Ken Skates demands £700m from UK Government for scrapping electrification across South Wales](#)”, 21 July 2017

64 *As above*. See also [CAN 0030](#) [Welsh Government].

65 Q108, 177

66 [CAN 0030](#), and BBC News, “[Is Swansea’s troubled rail electrification journey at an end](#)”, 20 July 2017

67 Q44

68 Q50

69 Greengauge 21, [Consequences for employment and economic growth](#), 31 January 2010, p 25, Table 5

70 BBC News, “[HS2 ‘losers’ revealed as report shows potential impact](#)”, 19 October 2013

43. We asked the Minister, Jo Johnson, whether he would consider ring-fencing the savings from cancelling electrification between Cardiff and Swansea, as the Welsh Government had suggested. He said that the Government were “always open to good investment proposals from any part of the country” and were looking in particular at proposals coming from Wales. He said that the Secretary of State for Transport had committed to work with the Welsh Government on a range of different options which would be worked up into business cases to see whether they passed the Department’s “strong value for money tests”.⁷¹

44. We have heard concerns about underinvestment in the Welsh railways. The Welsh Government told us that the Wales route area had around 11% of the railway track but in recent years had received only 1.5% of the money the UK Government has spent on rail improvement. There is clearly a case for Wales, with approximately 5% of the UK population, to receive a greater share of spending on rail. While figures vary, it is undeniable that the Government has saved at least £430 million by not electrifying the line between Cardiff and Swansea. In our view, there is a strong case for using this money for cost-effective transport projects in Wales. We encourage the UK Government to engage closely with the Welsh Government to identify and scope out cost-effective transport projects on which the money saved from the cancellation of electrification could be spent. It should set out a plan for this engagement in its response to our Report.

Options for the Swansea-Cardiff line

45. In light of the Government’s decision not to electrify the line between Cardiff and Swansea, we have heard a number of suggestions for alternative investment options for the Cardiff to Swansea route, which we consider below.

Straightening the track

46. As we have seen, a key factor in the cancellation of electrification was that the journey between Cardiff and Swansea could be made almost as quickly using bi-mode as electric trains. We were told that, in order for there to be a significant reduction in journey times on this route, the track would need to be straightened. Professor Stuart Cole, Emeritus Professor of Transport at the University of South Wales, said that if some of the bends in the track were straightened out

then you would start to progress to a reduction in journey time of 15 minutes, maybe more, along that route [...] to get the maximum benefit for people in central and south-west Wales, there needs to be a straightening of the track, or maybe even part of it, so that that speed can go up to maybe 100, 110, 120 miles an hour for certain sections.⁷²

Professor Cole said that the straightening would cost around £1 billion, on top of the £433 million required to electrify the track.⁷³

71 Q176

72 Q30

73 Qq5–6

47. Mark Hopwood, Managing Director of the Great Western Railway, said such projects were “very, very expensive”.⁷⁴ He told us that a straightening of the track was “unlikely to have a payback in straight commercial terms for the railway, but I recognise it would add enormous value in the wider debate around Swansea and its accessibility”. He added that “if you wanted to get the journey time from Swansea to London down to about two and a half hours that is the type of project that you would need to look at”.⁷⁵

Swansea Bay Metro

48. An even more ambitious proposal came from Mark Barry, Professor of Practice in Connectivity, at Cardiff University, for what he described as a “Swansea Bay Metro”. Professor Barry summarised his proposal in these terms:

A radical ~£1Bn investment in rail links to and within Swansea Bay to deliver a major boost to the regional economy:

- 30-minute journeys to Cardiff and 2 hour 15 minutes to London & Heathrow
- The foundation of a rail based Swansea Bay Metro
- New development and regeneration opportunities across the region

A move beyond a tactical argument about electrification to a more strategic discussion about the vision and future connectivity of Swansea Bay.⁷⁶

49. A key part of Professor Barry’s proposal involves a “major new line route from Swansea to Baglan”, which would be in addition to the current loop via Neath. He explained why this new line would be beneficial:

Current journey times to Swansea from Cardiff (which are only 55km apart) are unnecessarily extended (at least 55 minutes) because of two key constraints. Firstly, the low line speed between Cardiff and Bridgend and secondly, the more challenging need for the main line to meander around to Neath and Skewen between Port Talbot and Swansea. As the crow flies Swansea and Port Talbot are only ~11km apart but rail journeys take over 20 minutes!⁷⁷

The proposal also involved increasing line speeds between Cardiff and Bridgend to at least 100 miles per hour, which Professor Barry said “may require some new bridges to replace a level crossing or two”.⁷⁸

50. We received submissions expressing support for a Swansea Bay Metro from Swansea City Council, Dr Dai Lloyd AM, and the large local employer Admiral Group PLC.⁷⁹ We were told about the potential of the Swansea Bay City Deal to create 20,000 jobs and increase passenger demand.⁸⁰

74 Q110

75 Q112

76 CAN 0023, [Appendix A](#)

77 Mark Barry (CAN0023) [Appendix A](#)

78 Mark Barry (CAN0023) [Appendix A](#)

79 Swansea Council ([CAN0024](#)), Dr Dai Lloyd ([CAN0025](#)), Admiral Group PLC ([CAN0026](#))

80 As above

51. Brian Etheridge, from the Department for Transport, said that “on the face of it”, the proposal was “feasible and could be attractive”, but he warned about a number of possible obstacles:

From our perspective, we would worry about suddenly having a very fragmented service to Swansea. The downside is if that were the new station in Swansea going back out to stations like Llanelli, it would take even longer, or if you had two stations you would suddenly be disconnected. [...] We have been conscious of a number of proposals that would effectively cut out Neath. At the moment, Neath and Swansea are two of the busiest stations there, so obviously it would be something in terms of the overall transport provision that we would be worried about.⁸¹

Professor Barry has, however, said that “some main line services [would] still route via Neath” in addition to opportunities for new links in Neath and Neath Valley.⁸²

52. Mark Carne, Chief Executive of Network Rail, said that there was a “very formal process” for considering plans of this kind: the route studies. He said that these studies involved input from train operating companies, the supply chain and communities served by the railway. Mr Carne added that there was “a current route study for the Welsh railways and I would be very keen to ensure that these ideas are incorporated within that and studied appropriately”.⁸³

53. Network Rail’s Welsh Route Study was published in March 2016.⁸⁴ Since then, there have been a number of important developments, including the cancellation of electrification between Cardiff and Swansea, and the devolution of responsibility for the Wales and Borders franchise to the Welsh Government.⁸⁵

54. *In light of recent developments, including the cancellation of electrification and the devolution of some responsibilities to the Welsh Government, we recommend that the UK Government, Network Rail and the Welsh Government commit to developing a revised route study for Wales over the next 12 months. This revised study should examine all options for improving the South Wales railway. Before committing to any proposals, it will be important to ensure that they are cost effective, offer good value for the public purse and draw on lessons learned from the Great Western Programme.*

55. *If the track between Cardiff and Swansea were to be straightened to enable trains to run at increased speeds, the case for electrification of this route could be strengthened. We encourage the UK and Welsh Governments to work with Network Rail to explore the viability of this option. The outcome of this work can then inform the route study process.*

81 Qq 169–70

82 Mark Barry (CAN0023) [Appendix A](#)

83 Q121

84 Network Rail, [Welsh Route Study](#), March 2016

85 Department for Transport press notice, [“Welsh rail services set to be devolved following historic agreement”](#), 28 February 2018

56. *We were interested in the proposal by Professor Mark Barry for a Swansea Bay Metro, particularly in light of the increased demand that may result from the Swansea Bay City Deal. This idea is still at an early stage, but merits further exploration. We recommend that the Department for Transport and Network Rail engage with the Welsh Government and establish a working group to explore the options in more detail. This group should report back by the end of 2018. If the group considers the proposal viable, it should then seek to develop a business case for taking the work forward.*

57. *Wales clearly receives less than its population share of investment in rail infrastructure. The new rail franchise will be procured and answerable to the Welsh Government and Network Rail now operates via a Wales 'Route'. To ensure fairer funding and a more coherent framework for decision and policy making, we recommend that the UK Government should assess, and report back to us on, the feasibility of devolving responsibility for rail infrastructure to the National Assembly for Wales.*

New technologies

58. The Department for Transport told us that the UK Government expected “new battery technologies and alternative fuels to drive further innovation in the rolling sector over the next decade and become the principal energy source on the UK rail network”.⁸⁶ The Department subsequently sent us some examples of where these technologies were being deployed, both in the UK and internationally.⁸⁷ Brian Etheridge, the Department’s Director of Network Services, said that a number of train operating companies were “actively looking” at the new technologies. He said that it was “not at all inconceivable to think of a train going for quite a bit of its journey either on diesel or electric and following on smaller parts with battery top-ups”.⁸⁸

59. Roger Ford, Industry and Technology Editor at Modern Railways magazine, agreed that battery technology could play a role in the future. He said that “you can have a branch line that is 30 miles long; you can have a little battery train moving up and down all day, recharging at each point”.⁸⁹ He was more sceptical about the prospects of using this technology for faster mainline services.⁹⁰ David Clarke, from the Railway Industry Association, agreed. He said that at the moment hydrogen fuel cell trains were “most suitable for regional traffic” but that the technology was “not yet up to operating an intercity train”.⁹¹

60. **We were interested to hear about the potential opportunities offered by battery and hydrogen powered trains. While they may not be suitable for large, high speed mainline services, they may work well on the smaller lines that run through rural Wales. As these technologies come on stream, we believe that Wales should be considered as a prime candidate for their early introduction. As part of the route study process, the UK and Welsh Governments and Network Rail should begin to consider where battery and hydrogen trains might be introduced. If battery and hydrogen trains are not suitable for the Cardiff-Swansea mainline, this makes the case for electrification as the environmentally friendly option.**

86 Department for Transport ([CAN0017](#)) para v

87 [Letter from Jo Johnson MP to David T. C. Davies MP](#), 30 January 2018 (DEP2018–0084)

88 Q174

89 Q42

90 Q43

91 Q120

Conclusions and recommendations

The decision to cancel electrification

1. The failings and mismanagement on the Great Western programme have been well documented. We fully endorse the criticisms, made by our witnesses, the National Audit Office and the Public Accounts Committee, of the Department for Transport and Network Rail, and put on record our serious concerns about the basic failures in planning and project management. These failures have led to dashed hopes for those who had been promised improvements to the railway network between Cardiff and Swansea. (Paragraph 18)
2. It is encouraging that Network Rail and the Department for Transport have introduced a new approach to address some of the most serious lessons learned from the Great Western Programme failures. We want assurances that their new processes are robust and would prevent similar problems arising in the future. *We recommend that the Government commit to reviewing the effectiveness of the enhancements pipeline approach within 12 months. We also encourage the National Audit Office to examine how the new process is operating.* (Paragraph 19)
3. We are concerned that the Government's position on electrification has changed. The people using the line and local businesses feel aggrieved that they are not getting the electrified railway they were promised. (Paragraph 27)

Bi-mode trains

4. We accept that, because of the layout of the Cardiff to Swansea line, electric trains would not have offered a significant saving in journey times over bi-modes. There are, however, a number of other advantages to electrification besides journey times, including environmental benefits. (Paragraph 37)
5. The new Intercity Express bi-mode trains, even when running in diesel mode, will undoubtedly produce fewer emissions than the purely diesel trains they are replacing. It is, nevertheless, inevitable that there still will be some pollution when they run their diesel engines on the Cardiff to Swansea stretch of the line. Given serious concerns raised about air pollution, it is important that the Government does everything it can to reduce emissions. *We recommend that the UK Government and the rail industry carefully monitor the emissions from the Intercity Express trains on the route between Cardiff and Swansea, and publish the results on a six-monthly basis.* (Paragraph 38)
6. *Using the results of this monitoring, the UK Government and the industry should identify ways in which the emissions from the Intercity Express trains can be reduced further. We would expect to see clear evidence of emissions being reduced. The UK Government should also use the results of its monitoring to inform its future strategy on the use of diesel. It should explore whether, if diesel cars and vans and diesel-only trains are to be phased out by 2040, there is also a case for ending the use of diesel engines on bi-mode trains.* (Paragraph 39)

Investment in Welsh rail and other options for the Cardiff to Swansea route

7. We have heard concerns about underinvestment in the Welsh railways. The Welsh Government told us that the Wales route area had around 11% of the railway track but in recent years had received only 1.5% of the money the UK Government has spent on rail improvement. There is clearly a case for Wales, with approximately 5% of the UK population, to receive a greater share of spending on rail. While figures vary, it is undeniable that the Government has saved at least £430 million by not electrifying the line between Cardiff and Swansea. In our view, there is a strong case for using this money for cost-effective transport projects in Wales. *We encourage the UK Government to engage closely with the Welsh Government to identify and scope out cost-effective transport projects on which the money saved from the cancellation of electrification could be spent. It should set out a plan for this engagement in its response to our Report.* (Paragraph 44)
8. *In light of recent developments, including the cancellation of electrification and the devolution of some responsibilities to the Welsh Government, we recommend that the UK Government, Network Rail and the Welsh Government commit to developing a revised route study for Wales over the next 12 months. This revised study should examine all options for improving the South Wales railway. Before committing to any proposals, it will be important to ensure that they are cost effective, offer good value for the public purse and draw on lessons learned from the Great Western Programme.* (Paragraph 54)
9. *If the track between Cardiff and Swansea were to be straightened to enable trains to run at increased speeds, the case for electrification of this route could be strengthened. We encourage the UK and Welsh Governments to work with Network Rail to explore the viability of this option. The outcome of this work can then inform the route study process.* (Paragraph 55)
10. *We were interested in the proposal by Professor Mark Barry for a Swansea Bay Metro, particularly in light of the increased demand that may result from the Swansea Bay City Deal. This idea is still at an early stage, but merits further exploration. We recommend that the Department for Transport and Network Rail engage with the Welsh Government and establish a working group to explore the options in more detail. This group should report back by the end of 2018. If the group considers the proposal viable, it should then seek to develop a business case for taking the work forward.* (Paragraph 56)
11. *Wales clearly receives less than its population share of investment in rail infrastructure. The new rail franchise will be procured and answerable to the Welsh Government and Network Rail now operates via a Wales 'Route'. To ensure fairer funding and a more coherent framework for decision and policy making, we recommend that the UK Government should assess, and report back to us on, the feasibility of devolving responsibility for rail infrastructure to the National Assembly for Wales.* (Paragraph 57)

12. We were interested to hear about the potential opportunities offered by battery and hydrogen powered trains. While they may not be suitable for large, high speed mainline services, they may work well on the smaller lines that run through rural Wales. As these technologies come on stream, we believe that Wales should be considered as a prime candidate for their early introduction. *As part of the route study process, the UK and Welsh Governments and Network Rail should begin to consider where battery and hydrogen trains might be introduced.* If battery and hydrogen trains are not suitable for the Cardiff-Swansea mainline, this makes the case for electrification as the environmentally friendly option. (Paragraph 60)

Annex: Work recommended

Action	Timescale	Responsible bodies
Review enhancements pipeline approach	12 months	Department for Transport, Network Rail
Monitor emissions from bi-mode trains on Cardiff-Swansea route	Every six months	Department for Transport, Network Rail
Develop plan for further reduction in emissions from bi-mode trains	12 months	Department for Transport, Network Rail (in consultation with Hitachi Rail Europe)
Produce plan for closer engagement with Welsh Government	Two months (in response to our report)	Department for Transport
Revise route study for Welsh railways	12 months	Department for Transport, Welsh Government, Network Rail
Study viability of straightening the track between Cardiff and Swansea	End of 2018	Department for Transport, Network Rail, Welsh Government
Working group exploring Swansea Bay Metro proposal	End of 2018	Department for Transport, Welsh Government, Network Rail
Assess, and report back to us on, the feasibility of devolving responsibility for rail infrastructure to the National Assembly for Wales	Six months	UK Government
Initial work to consider future options for new technologies	12 months (as part of route study process)	Department for Transport, Welsh Government, Network Rail

Formal minutes

Tuesday 15 May 2018

Members present:

David T. C. Davies, in the Chair

Tonia Antoniazzi	Ben Lake
Chris Davies	Anna McMorrin
Geraint Davies	Liz Saville Roberts

Draft Report (*The cancellation of rail electrification in South Wales*), proposed by the Chair, brought up and read.

Ordered, That the draft Report be read a second time, paragraph by paragraph.

Paragraphs 1 to 60 read and agreed to.

Annex and Summary agreed to.

Resolved, That the Report be the First Report of the Committee to the House.

Ordered, That the Chair make the Report to the House.

Ordered, That embargoed copies of the Report be made available (Standing Order No. 134).

[Adjourned till Tuesday 22 May at 2.00 pm

Witnesses

The following witnesses gave evidence. Transcripts can be viewed on the [inquiry publications page](#) of the Committee's website.

Tuesday 21 November 2017

Question number

Professor Stuart Cole CBE, Emeritus Professor of Transport, University of South Wales, and **Roger Ford**, Industry and Technology Editor, Modern Railways Magazine

[Q1–55](#)

Tuesday 5 December 2017

Mark Carne, Chief Executive, Network Rail, **Mark Hopwood**, Managing Director, Great Western Railway, and **David Clarke**, Technical Director, Railway Industry Association

[Q56–121](#)

Tuesday 16 January 2018

Joseph Johnson MP, Minister of State, Department for Transport, and **Brian Etheridge**, Director of Network Services, Department for Transport

[Q122–186](#)

Published written evidence

The following written evidence was received and can be viewed on the [inquiry publications page](#) of the Committee's website.

CAN numbers are generated by the evidence processing system and so may not be complete.

- 1 Admiral Group Plc ([CAN0026](#))
- 2 Alstom UK&I ([CAN0018](#))
- 3 ASLEF ([CAN0004](#))
- 4 Bridgend County Borough Council ([CAN0020](#))
- 5 Department for Transport ([CAN0017](#))
- 6 Department for Transport ([CAN0029](#))
- 7 Dr Dai Lloyd AM ([CAN0025](#))
- 8 Great Western Railway (GWR) ([CAN0011](#))
- 9 Hitachi Rail Europe ([CAN0014](#))
- 10 Industrial Communities Alliance - Welsh Region ([CAN0006](#))
- 11 Institution of Civil Engineers Wales Cymru ([CAN0005](#))
- 12 Mr Michael McCabe ([CAN0015](#))
- 13 Mr Roger Ford ([CAN0016](#))
- 14 Mr Roger Ford ([CAN0022](#))
- 15 Mr Thomas Wheeler ([CAN0009](#))
- 16 Mr Timothy Rickman ([CAN0008](#))
- 17 Pembrokeshire County Council ([CAN0001](#))
- 18 Professor Mark Barry ([CAN0023](#))
- 19 Professor Stuart Cole ([CAN0019](#))
- 20 Professor Stuart Cole ([CAN0027](#))
- 21 Rail Delivery Group ([CAN0012](#))
- 22 Railfuture Cymru/Wales ([CAN0010](#))
- 23 Railway Industry Association ([CAN0013](#))
- 24 Swansea Council ([CAN0024](#))
- 25 Welsh Government ([CAN0030](#))