

Chiltern Railways



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Mike Mitchell
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Dear Mike

White Paper and the Case for Electrification

We are writing to record our support for the broad direction of the White Paper that the Department for Transport (DfT) published in July. We welcome the Government's commitment for investment in both additional rolling stock and infrastructure to meet growing demand for a successful rail product. However, we would like to raise our concern about the approach towards the subject of electrification.

This is an area that, perhaps above all others in rail strategy, is deserving of a serious and dispassionate analysis of the commercial, economical and environmental benefits of the options. Whilst the White Paper recognises the issue, it would appear that consideration of a wider electrification programme – especially of the main lines – is being put off until Control Period 5. We believe that this is wrong. There are real benefits to be gained from doing this now and deferral simply delays the realisation of these benefits.

Given both the age of our existing rolling stock and the expected expansion of the rail system, over the coming years, we will continue to procure new sets of rolling stock. There are many reasons why we should be buying electrically powered trains.

Firstly, using "diesel" trains as "mini-power" plants – to generate tractive power is both inefficient and wasteful. Given the size and mobile nature of trains, it is not a particularly

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efficient way to convert fossil fuel into power. It is, surely, better to manage this at a power station level – even after taking into account transmission losses in the distribution system. And this is even before one takes into account the fact that diesel trains consume significant amounts of energy to simply transport heavy engines and fuel around the network.

Secondly, today, we have absolutely no idea about the source of energy in the future. We can immunise the railway from changing fuels (and, indeed the cost of new fuels) by an electrification programme that puts those decisions elsewhere. For example, it seems extraordinarily incautious to be spending millions of pounds equipping a railway to run on one type of fossil fuel, including the depot works, only to find we – as an industry – have bet on the wrong fuel type.

Thirdly, at present, the cost of nuclear power generation is only slightly below that produced by burning gas, oil or coal. As fossil fuels start to become more expensive, as demand outstrips supply AND the cost of extraction rises, then inevitably nuclear energy will gain a real competitive edge. Without a wider electrification programme, we will be left with rising costs – unable to take advantage of developments in fuel technology.

Fourthly, we must be one of the few countries in the world that have high speed trains that are not electric. As a result, the diesel trains we buy are GB-specific trains – made for exclusive use on our national network, giving an unnecessarily high unit cost.

The business case for the electrification improves as the numbers of people rise. In the past, the economic calculation has been marginal, as the high capital costs of the electrified network need to be spread across the user base. However, as these capital costs are fixed, irrespective of the number of users (unlike fuel which is variable), then as the number of passengers rises the cost per mile (including capitalised elements) decrease.

Two of the three points in the White Paper that argue for a delay on electrification are, we believe, misleading. They are whether diesel fuels will be less carbon intensive, in future, and whether it makes sense to electrify in advance of 'in-cab signalling'.

For the reasons outlined above, this is not about carbon emissions. It is about the efficiency in the production of electro-motive force. Yes, improvements in the carbon content of diesel fuels are likely to come about in the coming years, but the burning of limited fossil fuels, as opposed to using electricity generated from a wide range of very low or zero carbon emissions, seem unnecessary. Fossil fuels are a limited resource. Using

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these to power trains, when other methods are available seems very short sighted. We do recognise the potential of bio fuel, but the technology here is undeveloped and, in any case, does not address the issue of additional weight caused by having engines and fuel on board trains.

In addition, we do not believe that the cost of immunising signalling systems from electrical interference is significant. A recent report by RSSB suggests that this is around 1% of the capital cost of electrification. This, in our view, would not be sufficient justification for deferring the electrification until completion of ERTMS.

From an industry perspective, it would seem to be inconceivable that we could contemplate a thirty-year rail strategy for rail – especially one that is growing, rapidly – which does not foresee a much greater deployment of electrification. And if that is the case, then we need to start planning for it now. Given the disruptive nature of an electrification roll-out programme and the growing demand for increased passenger services (earlier trains, later trains, weekend trains and trains on bank holidays), we will need to do this over a long period of time. We cannot simply conclude at the end of CP4 that we need to electrify the railway (for the reasons above) and then expect the industry to do this in a matter of a few years. A longer term commitment to this will enable the industry to have a ten year, perhaps even longer programme to electrify the railway.

We are already working together with government and other stakeholders through the Network RUS on opportunities for infill electrification in the relatively short term. We propose that this work is extended to include a thorough technical, economic and environmental assessment of the pros and cons of a wider electrification programme. As part of this, we would consider the economic opportunities of aligning such electrification with the plans for the introduction of new trains.

Yours sincerely

A handwritten signature in black ink, appearing to read "Adrian Shooter".

Adrian Shooter
Chairman, ATOC

A handwritten signature in black ink, appearing to read "Iain Coucher".

Iain Coucher
Chief Executive, Network Rail