

Dear Lee Waters MS,

Your ref LW/11343/21

Your confirmation that TfW will be restoring the full rail service to and from Fishguard Harbour from May 2022 was reassuring, thank you.

Regarding the new CAF class 197 Civity trains (hereafter referred to as ‘new trains’ or ‘197s’), the main arguments in your letter appear to be as follows:

1. the 197s will improve punctuality due to more suitable door positioning
2. the 197s will deliver a step change in quality and improve comfort over the older trains
3. the reduction in toilet provision on 197s compared to the existing fleet was necessary because a Universal Access Toilet (UAT) takes up the space of 12 fixed seats
4. trade-offs are necessary and one toilet on a 2-car class 197 and two toilets on a 3-car 197 strikes the right balance between capacity and toilets given the loss of 12 seats per UAT
5. toilet provision on the 197s is in line with new fleets for other UK operators
6. the 197s will produce significantly fewer emissions than the older diesel trains
7. the new trains are capable of being modified to alternative power sources
8. you would like to see more electrification in Wales and are calling for the UK Government to commit to this or devolve rail infrastructure to the Welsh Government

Many of these are misleading or inaccurate claims which have previously been made by TfW, as I detail below.

Door Positions (Item 1)

Do you believe that sacrificing seats, legroom, tables, luggage stacks and/or toilets in order to save a few seconds at stations is desirable on a long-distance train?

KeolisAmey’s chosen door layout for the 197s does exactly that, by increasing standing room and reducing furnishable space; contributing to many of the issues discussed. Therefore, is it really ‘more suitable’?

TfW describe their plans for mark 4 coaches to work alongside the 197s between Manchester and Swansea, as “*going above and beyond our original commitment to transform the Wales and Borders rail service*”¹. The mark 4s have the same door positioning as the existing class 175 units currently used on most Manchester-Swansea services. The ‘original commitment’ was blanket 197s.

Quality And Comfort (Item 2)

Transport for Wales currently have 7 different types of train in service. These differ enormously in terms of quality and in their suitability for long-distance services. The trains the class 197s would primarily be replacing are high-quality and superior to the 197s for the reasons discussed previously such as uncomfortable new seats, fewer tables aligned with windows and reduced toilet provision. The above Business Live article confirms that “*The new GWR trains have been criticised by many passengers for the hardness of their seats.*” and that “*TfW has ordered the same type of seat*”.

1 <https://www.business-live.co.uk/retail-consumer/south-wales-manchester-rail-services-20755532>

The lack of enclosed vestibules on 197s is another quality issue.



Above: an existing train with the same door layout as a 197 illustrates the result; toilets opening directly onto the passenger saloon. This is indecent, unpleasant for passengers sitting nearby and potentially embarrassing and disrespectful to toilet users; a concern raised by the female members of my family. Can this really be described as a ‘step change in quality’ compared to the existing trains where vestibules provide a lobby between toilets and seats?

Toilet Provision (Items 3, 4 & 5)

TfW misleadingly implies that the existing fleets do not provide wheelchair-accessible toilets (UATs) and that every toilet on the new trains is a UAT. In reality the current trains are already equipped with a UAT and the second toilet in the 3-car 197s is a space-saving standard toilet.

Furthermore, ‘the right balance’ between capacity and toilets is defined in the industry’s ‘Key Train Requirements’². For inter-urban services, this is set at 85 seats per toilet. As the table on the next page shows, TfW’s existing long-distance fleet meets this criteria while their new trains do not.

The fifth claim is simply nonsense since new trains vary widely. Class 345s for Crossrail have no toilets at all, while GWR’s 9-car Intercity trains have ten toilets. The recently introduced TransPennine Express (TPE) ‘Nova 2’ trains are included in the table as a comparator.

2 <https://www.raildeliverygroup.com/about-us/publications/12715-ktr-v6/file.html>

Train Type	Fixed Seats	Seating Bays	Airline Seat Spacing	Toilets	Seats Per Toilet
Class 158 (2-car)	134	16	80cm	2	67
Class 175 (2-car)	118	12	84cm	2	59
Class 175 (3-car)	186	22	84cm	3	62
Class 197 (2-car)	116	10	82cm	1	116
Class 197 (3-car)	188	16	82cm	2	94
Class 397 'Nova 2' (5-car)	288	50	Unknown	4	72

Emissions Comparison (Item 6)

There is a difference between greenhouse gas (GHG) and emissions harmful to human health / air quality. In terms of the latter, the new trains are indeed an improvement although it is possible to retrofit older trains to reduce these emissions.

GHG emissions are clearly dependent on fuel efficiency and total diesel mileage. Efficiency varies among the existing fleets and TfW do not make this clear. Class 197s and class 158s appear to be similarly efficient. Class 175s are less economical but hybrid technology is available to significantly improve this³.

Furthermore, if retained it is assumed that the class 158s and 175s would be replaced by 2040 using electric trains with a hydrogen or battery function. This is a maximum of 19 years of diesel emissions from the old fleet compared to a possible 40 years of diesel emissions from the 197s. ScotRail is expected to introduce hydrogen or battery trains to meet their 2035 decarbonisation target, does Wales really want 77 diesel-only trains until around 2060?

Potential For Modification And Electrification (Items 7 & 8)

I welcome the Welsh Government's commitment to electrification on the core ValleyLines and am encouraged by your interest in future rail electrification elsewhere. However, TfW's response to criticism of their new diesel-only trains is unconvincing. While the class 197s could be converted to 'alternative power' this is not 'electric traction'. Conversion to electric traction would have to overcome challenges even greater than those faced by the failed eVoyager project. With both Voyagers (class 22x) and class 197s, *"there is no facility to supply electricity for the traction motors from elsewhere within the unit. This has frustrated potential schemes for creation of a bi-mode Class 22x unit on the grounds of prohibitive cost"*⁴.

As a result, alternative liquid fuels (such as used cooking oil) are the most likely 'decarbonisation' option for 197s. An electric railway is a better railway for many reasons (see the RIA's 'Why Rail Electrification' report⁵), not just decarbonisation. Class 197s would significantly weaken both the business case and the environmental case for electrification wherever they operate, since electrification delivers maximum benefit when all trains using the route are capable of electric operation. The UK Government is very unlikely to fund schemes with a poor case.

³ <https://busnes.senedd.cymru/documents/s95618/EIS5-29-19P4%20Tystiolaeth%20gan%20Angel%20Trains>

⁴ <https://www.ipexconsulting.com/insights/thought-leadership/discontinuous-electrification-repurposing-existing-rolling-stock/>

⁵ https://www.riagb.org.uk/RIA/Newsroom/Why_Rail_Electrification_Report.aspx

Network Rail's Traction Decarbonisation Network Strategy⁶ (TDNS) recommends a mix of 86% electrification, 9% hydrogen and 5% batteries. Most of the battery and hydrogen trains required would benefit from being bi-modes with electric traction, making 197s unsuitable for conversion to fill these roles. It is great to see the Welsh Government prioritising electrification to Swansea by 2029, but does this make sense if class 197s are left wastefully burning diesel (or alternative fuel) 'under the wires'? Moving them elsewhere would simply blight somebody else's electrification prospects.

The TDNS also recommends that "*Procurement of diesel-only vehicles is only undertaken where there is clear strategic and economic rationale for doing so.*"⁶ TfW have yet to show a clear rationale for replacing the class 158 and class 175 trains – in fact it appears passengers would be better off if they were retained. We can have unsuitable new trains now until nearly 2060, or we can wait 10-15 years with the old trains while we design a suitable, future-proof, new fleet.

Kind regards,
Thomas J. Wheeler

"We know where this story is heading, and we know we must give it a different ending" Sir David Attenborough speaking at the 2021 Earthshot Prize awards.

6 <https://www.networkrail.co.uk/wp-content/uploads/2020/09/Traction-Decarbonisation-Network-Strategy-Interim-Programme-Business-Case.pdf>