

15th March

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Dear John,

Fares, Competitive Response and First Journey times

Following the Hearing on Friday 4th March 2016 there are a number of issues we would like to highlight following the discussion and also some points that we were asked to clarify. These are broken down into the following areas:

1. The significance of the competitive response assumptions
2. Lack of evidence for a competitive fares response assumption
3. Anglo-Scottish air competition
4. VTEC bid strategy and response to increased Open Access in practice
5. Serious concerns regarding the CH2M fares modelling
6. Inconsistency of CH2M Hill fares assumptions
7. Modelling the likely faster First Group journey times
8. Use of a Gravity Model
9. Middlesbrough route clearance
10. Eaglescliffe Catchment area

1. Significance of competitive response assumptions

Competitive response and how it has been modelled is one of the biggest factors driving the NPA ratios in the CH2M modelling. We consider that it is vital to emphasise the impact this issue is having on the NPA ratio, as shown in the table below in relation to Option 1 and Option 7.

	Impact on NPA ratio	
	Option 1 Alliance Yorkshire/Cleethorpes	Option 7 First Edinburgh
CH2M Hill reported half competitive response	-0.08	-0.89
SDG Inferred – no competitive response	-0.14	-1.31

This clearly shows that competitive response is having a very significant impact on the modelled CH2M NPA Ratios, particularly in the case of First Group's Edinburgh service. It is therefore essential that any assumptions about a competitive fares response should be well-evidenced, soundly modelled, and the underlying logic applied on a consistent basis across all options considered to ensure that any decision taken by ORR is rational, fair and lawful.

2 Lack of evidence for competitive fares response assumptions

Despite this need for sound evidence, Leigh Fisher found no evidence of a competitive response to existing open access competition. ORR have suggested that Leigh Fisher did not look very hard but if they did not find a competitive response, then any such response must have been modest. Further, neither the CMA's latest report 'Competition in passenger rail services in GB' nor the ORR's earlier Impact Assessment present clear evidence of such behaviour by an incumbent; there is evidence that overall yields are held down where OA competition is introduced, but this is unsurprising given that the OA operator itself, for several reasons, is likely to have a lower average yield than the incumbent.

3 Airline competition

The strength of the airline competition on the Edinburgh to London route is the main driver of price and hence the revenue maximising position on this flow. The current rail market share is 29%. Please note the CMA comments in the CMA Clearance process for the franchise:

"The high number of air services operating on this flow with not dissimilar fare price ranges and overall journey times coupled with a significant amount of internal document evidence that the Parties monitor and react to competition from air services lead the CMA to conclude that air services provide a constraint on this flow which will continue to be present post Franchise Award. Overall, the limited existing competition between the Parties and the constraint from air services leads the CMA to find that there is no realistic prospect of an SLC as a result of the Franchise Award on this flow".

During the CMA clearance process we undertook surveys at Edinburgh Airport and Edinburgh Waverly station. These surveys showed 70% of those surveyed at Edinburgh Airport (about to fly to London) considered rail and 53% of those surveyed at Edinburgh railway station (about to travel to London by rail) considered air before travelling.

The following adverts show the strong competition that exists between air and rail:

**NO PLANE
NO PAIN**

BE CLUED UP, DON'T QUEUE UP
EDINBURGH TO LONDON, AS FAST AS 4HRS

**THE ULTIMATE RAIL
REPLACEMENT
SERVICE**

Flybe is cheaper on average than rail 8 times out of 10, which might explain why savvy Network Rail staff have taken over 8000 domestic flights in the last two years rather than take the train. Maybe they're on to something?

flybe.com

The fastest way from A to flybe.

BRITISH AIRWAYS

Fly into London City Airport and be in central London in just 21 minutes.

Book now

**£25 TO LONDON
BOOKIN' AMAZING**

Arrive in the centre of the Big Smoke in as fast as 4 hours. That's smokin'!

50,000 Standard Advance tickets available from Edinburgh for weekday travel between 16 May to 15 July. Time to shake your bookin' booty.

Book by 4 March at virgintrainseastcoast.com

We are also taking advantage of the extra capacity to Edinburgh opened up in May 2016 by offering a significant number of fares to compete with air:

**£25 fares
25 times a day**

Edinburgh London Edinburgh London Edinburgh London Ed

Virgin Trains EC @Virgin_TrainsEC · Mar 3

From 16 May, we'll have Edinburgh/London trains almost every 30 mins. Seen our £25 fares? bit.ly/1Efo5Dz

11 replies 18 likes

In a market where Ryanair are selling their fares at £9.99 and we are already competing with fares of £25 the First Group offer is not going to be bringing passengers anything new.

4 VTEC Bid Fares Strategy and response to increased OA in practice

There was some discussion at the hearing in relation to VTEC's Bid fare strategy for the VTEC Full timetable. However, the strategy referred to at the hearing was compiled two years ago for a timetable that will not go live for at least another four years. That strategy is now irrelevant as it has been superseded due to:

- Fare regulation changes – loss of flex and RPI+0% until 2020
- Increased airline competition
- Significantly lower oil and fuel prices
- Different demand levels compared to bid

VTEC are incentivised to maximize revenue but in a price sensitive market this means we have to keep value for money for the passenger at the heart of everything we do.

At the hearing it was suggested that VTEC was likely to react to open access competition through a competitive fares response. However, this is not necessarily the case for the following reasons:

- VTEC are already competing very strongly with the air market which offers cheaper fares than First Group are proposing as shown in section 3.
- When VTEC lose passengers to a competitor it is not necessarily a revenue maximizing strategy to attempt to win them all back by reducing fares. What needs to be modelled is the impact this loss of demand will have on our revenue maximizing fare levels by train.
- So the extremes of any potential competitive response would be a) to do nothing or b) to try to win back all of the demand that has been lost. CH2M have assumed a position outside this range whereby VTEC would attempt to win back all of the demand lost PLUS an additional amount equal to the empty seats on the train in the base case. This is clearly an overestimate of the competitive response (if any), is unsupported by any evidence and is therefore irrational.

5 Serious concerns regarding the CH2M fares modelling

As set out above, if ORR wishes to take into account the potential response of VTEC to open access competition then it must do so in a fair, rational and lawful way. This requires its calculations to be based on robust modelling which clearly demonstrate a sound business logic for the predicted response.

However, we believe that CH2M's modelling is fundamentally flawed for several reasons. We agree with SDG in their assessment of the methodology adopted. In their response (dated 8th February 2016) they set out two areas where the CH2M methodology to calculate the impact of the VTEC yield should be improved:

1. Incorrect weighting using option journeys rather than base journeys should be corrected.
2. Formula should use additional empty seats rather than total empty seats.

Additionally, we believe that there is either an error in the CH2M Hill results or a misallocation of the demand, because the implied elasticities are implausibly high.

In Appendix A of our initial response (dated 8th February 2016) to the latest CH2M report we set out our concerns with the level of generation implied by the CH2M fares modelling. We showed that CH2M's modelling of the supposed competitive response implies a massive fares elasticity of -2.15 which is far higher than the PDFH recommendation of 0.8 for business and -1.25 for leisure. The CH2M results suggest that demand increases by 4.2% for a 2% decrease in average yield. This is twice the level of generation that would be expected by PDFH. We have since carried out further investigation of CH2M's modelling, this time to investigate the elasticities needed to obtain a negative abstraction. The results are in a note attached as Appendix 1 and further underline the implication that there is an error in the CH2M modelling.

A further problem arises with CH2M's apparent treatment of yield reduction as abstraction and the associated demand uplift as generation. We believe that this distorts the generation and abstraction results skewing the results in favour of generation.

Scale of response modelled by CH2M outside the range of what has been seen historically

A further crucial test of the model's credibility is to compare its predictions with real-world experience. If the kind of incumbent fares response to OA, and the resulting NPA ratios modelled by CH2M are to be believed then such effects should have been evident in the historic data. However, on the contrary, Leigh Fisher found that historic abstraction was consistent with NPA ratios of around the 0.3 threshold.

6 Inconsistency of CH2M Hill fares assumptions

For the reasons set out above we strongly recommend that the central case assumption should contain no competitive fares response.

If, contrary to this recommendation, ORR wished to consider a scenario where a competitor response is assumed, it should address the serious problems with the CH2M Hill fares modelling and consider the response of airlines as well as competing rail services (a response by airlines would itself reduce the level of generation claimed by First). It would also need to ensure that it took a consistent approach in making assumptions about fares. It should assess the profit maximizing fares for each operator in each option, including in the base case (for which CH2M Hill's modelling also implies that lower fares would increase VTEC revenue). Unless it does this across the board any comparisons between options risk being skewed.

If there was potential to increase revenue through lower fares (as implied by CH2M's modelling) then logically the incumbent would already be doing it. CH2M suggested

that VTEC does not do this because of a lack of capacity. While there is some truth in this at certain times of the week, we have ample spare capacity to compete on price on many services, for example we are providing 22,000 extra seats a week on the Edinburgh/London route from May 2016 and we will have even more capacity from 2018 following the introduction of our IEP trains. This is what enables us to follow our current fares approach including fares from £25 single and the Plane Amnesty promotion.

Our proposals provide more than sufficient seating to carry forecast passenger demand on the Edinburgh <-> London route to 2023/4 and beyond. Our forecast passenger loadings (occupying Standard accommodation at the “critical” i.e. busiest point on the journey) have been analysed versus the First Group timetable and we believe that there is sufficient spare capacity each day. The VTEC services closest to the times of the proposed open access services do not suffer from a lack of capacity currently. The table below details the forecast spare capacity on the immediately adjacent VTEC trains to the proposed ECTL five trains in each direction, at the end of the Franchise (2023/4):

[TABLE REDACTED]

Please note that there are other VTEC services throughout the day, also with spare capacity. ECTL’s proposals therefore provide further seating capacity that is simply not required, representing poor use of scarce network capacity. This provides evidence that CH2M’s assumption that VTEC would provide cheap tickets to fill the trains either side of the First Group trains is irrational.

7 Modelling the likely faster First Group journey times

Given that the likely ORR decision will grant quantum rights the journey times assumed in the modelling should be the most likely outcome from the ESG Process. First Group are proposing to run fast to Newcastle which is directly comparable to our 2 hourly fast Edinburgh services that do not stop at York. The most likely outcome that makes best use of the infrastructure and path would be for the journey times of the First Group and VTEC services to be the same – as became clear at the 4 March Hearing. To date, ORR have not instructed CH2M to model this most likely outcome and it is important that this is modelled in order for CH2M’s analysis to be robust and rational. We also discussed this in section 6 of our February 8th report.

VTEC commissioned an independent consultant, Tony Crabtree, to review how Network Rail’s Decision Criteria would be applied in this case. Phil Dawson provided this report to ORR on 10th March 2016.

Based on a VTEC Full journey time between London and Newcastle of 2hrs 34mins (UP) and 2hrs 35mins (DOWN) for the fast Edinburgh services the following table shows likely journey times that would be operated by First Group services. These journey times make their application consistent with the most likely timetable outcome. Allowance has been made for Stevenage and Morpeth calls.

Depart Kings Cross	Likely KGX-EDB Journey time	JT Reduction compared to Option 15	Depart Edinburgh	Likely EDB-KGX Journey time	JT Reduction compared to Option 15
05:30	4h05	7 mins	06:46	4h04	4 mins
10:03	4h02	8 mins	08:46	4h04	3 mins
13:03	4h02	8 mins	10:48	4h04	4 mins
15:03	4h02	8 mins	14:46	4h07	2 mins
19:47	4h02	18 mins	18:46	4h02	23 mins

The outcome of this revised First Group Edinburgh timetable is to increase the absolute level of abstraction from VTEC to over £40m in 2014/15 demand levels which is equivalent to 5.7% of the entire franchise revenue. This is a sum far in excess of the usual profit margin of a franchised rail operator. Applying this more realistic journey time would reduce the NPA ratio by 0.16. Together with adjustments for competitive response and elasticity modifiers (as raised in our letter of 8th February 2016) this takes the generation abstraction ratio to 0.15, decisively showing the proposed services to be 'primarily abstractive'.

8 Use of a Gravity Model

It is clear from the discussions bilaterally on 25th February and at the Hearing that we could continue to discuss whether a Gravity model or rail heading model is most appropriate. We set out concerns in our 8th February report section 3. However, our fundamental concern is to ensure that the ORR acts in a fair, rational and lawful way by ensuring a consistent approach in how applications are appraised.

Previous applications on the East Coast Main Line (ECML) and West Coast Main Line (WCML) used a rail heading model. The review of open access carried out for ORR by Leigh Fisher used a rail heading model to explain the growth due to open access at certain stations. This type of model has therefore been validated with actual data unlike the CH2M Gravity model which CH2M have admitted does not model abstraction from nearby stations correctly, requiring them to make an offline assessment of abstraction.

This approach seems particularly perverse since the basic premise of a parkway station is to improve access to the rail network either through location close to motorways or other transport routes. East Leeds Parkway - if built at all, which is not committed - would be sited within a core part of the Leeds catchment area - but there is also uncertainty as to where it would be. Access and station choice are key to modelling the demand at this new station. We note the PDFH 5.1 guidance in B10.5 Station Access and Station Choice:

“To model the impact at a station that had no or very poor service, a station choice model can be built to supplement the impact forecast by MOIRA. This model should be used to forecast the changes in accessibility and railheading changes caused by the introduction of the new services.”

It is surely sounder, and more consistent with past practice, to use an established modelling approach specifically designed to do this rather than to adopt a novel approach, counter to PDFH guidance, which then needs a further overlay to cover its inadequacies. We do not understand why ORR would wish to accept the increased risk and uncertainty this introduces to the decision making process. We attach as Appendix [A] a copy of an East Leeds Parkway WYCA paper and Rail magazine report clearly demonstrating the current uncertainty over when, where and if East Leeds Parkway station will be built.

9 Middlesbrough route clearance

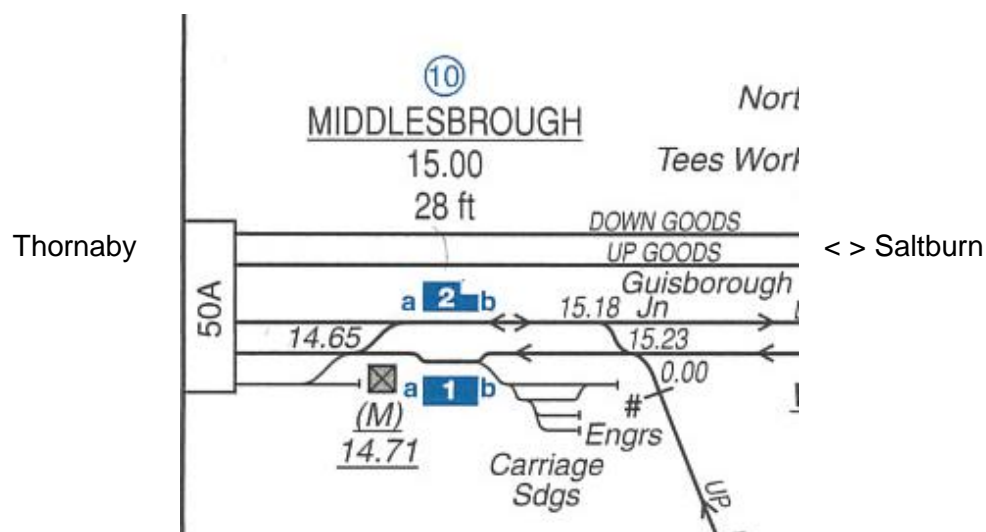
At the ORR Hearing, Alliance raised an issue about how VTEC's planned services to Middlesbrough would work operationally.

In VTEC's business case prepared for our bid, we included the cost of gauge clearance to from Stockton Cut Junction to Middlesbrough, which had been estimated at £325,000 by Network Rail in its document *IEP gauge clearance add routes March 14*. VTEC are about to enter into a development services agreement with NR to develop the plan for necessary work for the route between Stockton Cut Junction to Middlesbrough (Up and Down lines), the carriage sidings at Middlesbrough and the West End dock at Middlesbrough.

With regard to operations at Middlesbrough station there are two options depending on the length of turnaround. Both have been agreed with Network Rail.

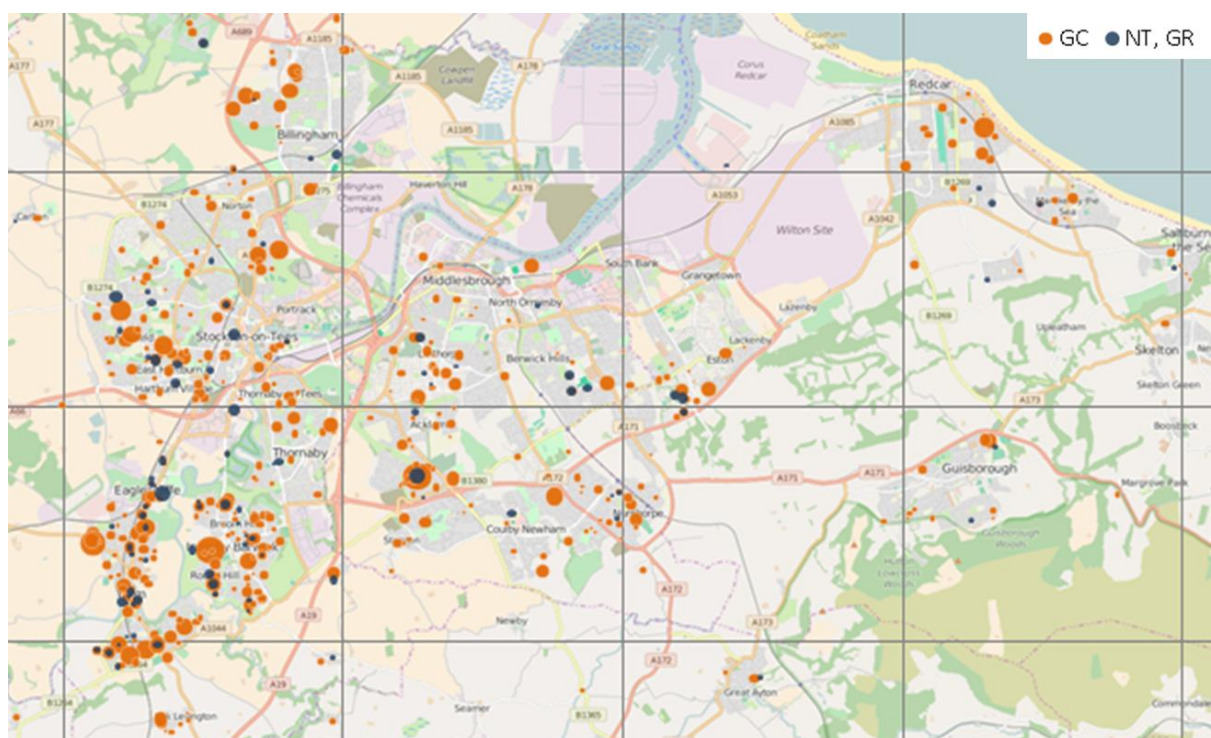
Short turnaround: services from London will arrive on Platform 2, then shunt via Guisborough Jn to Platform 1 to form the next London bound service.

Long turnaround: the above will apply, except on arrival at Platform 1, the train will reverse and berth in the Carriage Sidings until nearer departure time. See below for track layout at Middlesbrough.



10 Eaglescliffe Catchment area

We have extracted the ultimate origin of passengers who book through the VTEC website for travel to London via Grand Central at Eaglescliffe (see dot map below). Bookings through our website should be representative of all bookings. This data shows that, while the catchment area overlaps with that of Middlesbrough, the majority of the demand comes from an area West of Thornaby and/or North of the Tees which would not logically be attracted to our service at Middlesbrough. We aim to capture those within walking distance or a short drive of Middlesbrough town centre (including the University) and the catchment to the East including Redcar, Saltburn and Guisborough. As can be seen from the dot map, these areas have a relatively modest use of Eaglescliffe station.



11 Conclusion

As explained at the hearing on 4 March, VTEC is keen to ensure that a fair and transparent process leads to the best overall decision for ECML access. In order for any decision taken by ORR to be lawful, it must of course act in a rational way by ensuring that the modelling on which its decision is based is reasonable and robust. However, there still remain critical weaknesses in the revenue and economic modelling on which ORR is relying in order to reach a decision, which will need to be corrected before ORR takes any decision.

Neither the extended journey times nor the very low fares proposed by First Group are realistically likely to happen in practice and this application must be assessed on the basis of a far more plausible scenario.

The assumption of competitive fares response is unsubstantiated by previous experience and the modelling generates implausible results. If ORR nonetheless

does wish to make assumptions about future VTEC fares, this approach should be applied consistently across all scenarios.

When VTEC developed the business plan underlying our bid for the franchise we naturally assessed the risk of greater Open Access competition and did so on the basis of how ORR assessed applications in the past. We noted ORR's duty to enable us to plan our business with a reasonable degree of assurance. We therefore took into account ORR's past practice which has been to assess OA applications using established modelling approaches, and which has seen successful OA initiatives targeting markets which previously had poor levels of rail service. The current applications break new ground by targeting core well-served rail markets. They have been assessed for ORR using new, unvalidated models which depart from PDFH advice and which demonstrate clear weaknesses, leading to huge uncertainty about the true impact of these services on the existing railway. We cannot see how approving these applications under such circumstances would be consistent with ORR's duties.

The change in approach by ORR represents a significant moving of the goalposts. It is essential as a matter of procedural fairness that VTEC is given a proper opportunity to participate in this process by being informed of the approach that will be taken by ORR to correct the modelling, and adequate time to comment thereon and to respond to ORR's provisional conclusions before any final decision is taken. This is so as to ensure that ORR has before it all relevant available evidence before it takes its decision. VTEC would be grateful for an early indication from ORR of its intended next steps in this process.

Yours sincerely,



Andy Sparkes
Business Development Director

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1 COMMENTARY ON FARE ISSUES WITH CH2M REPORT

1.1 Summary

VTEC have raised a number of issues with the fares modelling of CH2M, deployed in their recent report “Assessment of Applications for Track Access on the East Coast Main Line: Phase 2 Final Report” (the CH2M Report). These issues included the derivation of “negative abstraction” due to fares, and the derivation of an implied elasticity of -2.15 from one of the sensitivity tests.

At the hearing into the applications on 5th March, it was suggested that the negative abstraction witnessed was simply an anomalous outcome of the recommended methodology of PDFH v5.1 Chapter B11.4. CH2M claimed to be “unable to follow the calculations” we had deployed to obtain an elasticity of -2.15, and wrongly claimed that we hadn’t provided base data to support this derivation. The details of this derivation were clearly provided in appendix A of our response to the CH2M report, and we are happy to answer any questions CH2M have to enable them to “follow the calculations”.

Following the hearing, we have undertaken further investigation into CH2M’s results, and developed another useful sense-checking test. This briefing note details our investigation. The test provides further evidence that, even when replicating CH2M’s assumptions and methodology exactly as described in their report, obtaining “negative abstraction” due to fares impacts is impossible without the use of implausibly high fares elasticities, which do not comply with PDFH guidance. An implication is therefore that there is an error in CH2M’s modelling.

1.2 Methodology

In this section we describe the methodology deployed to replicate CH2M’s stated calculations. The reader should note that we disagree with a number of the assumptions made and would contest their appropriateness. For example, we believe that CH2M have grossly overestimated the magnitude of the incumbent competitive response. However, we have attempted to replicate these calculations in order to fully evaluate CH2M’s results when compared with their stated methodology.

1.2.1 Model

We have developed a simple model which replicates the calculations given in Appendix C of the CH2M Report, on a flow group level. In particular, when provided with the same inputs, the model produces the same outputs as detailed in Figures 1, 2, and 3 of Appendix C of the CH2M Report. This gives us confidence that the methodology replicates that intended by CH2M.

We have then modelled the following flows from options 1 and 7 of the CH2M report:

Table 1: Flows Modelled

Option	Flow
1	Leeds – London
7	Newcastle – London
7	Edinburgh – London

We have assumed that if the incumbent operator is going to gain revenue from the fares effects of market entry, it would happen only on one of the flows given above. This is because, as stated on page 4 of Appendix C of the CH2M Report:

“We assume that VTEC would reduce fares between a small number of locations, i.e. London-Leeds, London-Newcastle, and London-Edinburgh, rather than for the full range of journeys where additional capacity is available. This is a simplification.”

As these are the only flows on which VTEC is modelled to lower its fares, we assume these are the only flows for which negative abstraction due to fares would be conceivable.

1.2.2 Inputs

The model accepts the following inputs from MOIRA for each flow to be modelled:

- Base Journeys (National Rail);
- Base Revenue (National Rail);
- Run Revenue (National Rail); and,
- Run Revenue (Open Access Operator (OAO)).

These inputs have been taken from our runs of the relevant option timetables in MOIRA.

The model also accepts inputs for both incumbent and OAO fare changes, and an elasticity of demand to fare. The assumptions for fare changes for each option modelled are detailed below:

Table 2: Fare Change Assumptions Made

Fare Change	Value (% discount/reduction)	Source
Option 1: Alliance Discount	25%	Section 3.3.1.4 of CH2M Report: <i>“we estimate that, for flows with direct Alliance services, Alliance’s revenue per journey (yield) in current prices will be approximately 25 percent lower than VTEC’s current yield for the same journeys”</i>
Option 1: VTEC Response	5%	Section 3.3.1.4 of CH2M Report: <i>“we estimate that VTEC’s average weekday London – Leeds fare would reduce by around five percent in real terms”</i>
Option 7: First Group Discount	45%	Section 3.5.1.4 of CH2M Report: <i>“We estimate that First’s overall average yield would be around 50% - 60% of VTEC’s”</i>
Option 7: VTEC Response	7%	Section 3.5.1.4 of CH2M Report: <i>“we estimate the average reduction in VTEC’s London – Newcastle and London – Edinburgh fares would be around seven percent in real terms”</i>

1.2.3 Elasticities – Test Applied

The PDFH recommendations for fare elasticity to demand for long distance London flows are given below. These are sourced from PDFH v5.1 Table B3.3:

Table 3: PDFH Fare Elasticity Assumptions

Elasticity Type	Demand Elasticity to Fare
Business	-0.80
Leisure	-1.25
Overall (average)	-1.05

The average overall fare elasticity of -1.05 represents a blended average of the business and leisure elasticities, for an average flow. If a route had a particularly high proportion of Leisure trips, then it could be expected that the market would be marginally more elastic than this. However, in extreme

circumstances, where 100% of the market is for Leisure travel, the highest possible elasticity which could be expected from the PDFH Model would be -1.25.

In CH2M’s modelling, two different fare impacts affect the incumbent operator’s revenue:

1. Revenue loss, due to the OAO offering lower fares than the incumbent operator, abstracting demand; and,
2. Revenue gain, due to lower fares being revenue generative (assuming the fares elasticity exceeds -1).

The fare elasticity has an impact on quantity 2. This is because the more elastic a market is assumed to be, the more demand generation there is from a fare reduction. We have taken the approach of varying the fare elasticity assumed, and applied two tests for each option:

Table 4: Elasticity test

Test	Elasticity Value Obtained
A	The minimum elasticity required for negative abstraction, i.e. for the incumbent operator to gain revenue, because the effects of 2. above are greater than those of 1.
B	The minimum elasticity required for the negative abstraction detailed in the report to occur, i.e. for the incumbent operator to gain revenue in line with CH2M’s results*
*As derived from the charts in Figure 2 and Figure 9 of the CH2M Report. For option 1, the figure is £2m, for option 7, the figure is £8m. These figures represent the difference between the revenue impacts of effects 2. and 1. above, i.e., the amount by which the gain of effect 2. Exceeds the loss of effect 1. In the modelled scenario	

The results of these tests for each option have allowed us to sense check the elasticities required to produce the results detailed in the report, against PDFH recommendations. This is a useful sense check of CH2M’s results.

For avoidance of doubt, it should be stated that air competition fares effects are dealt separately within the air competition overlay within CH2M’s modelling suite. As these effects lie outside of the analysis we have undertaken here, this should not affect the elasticities used in the CH2M Report.

1.3 Results

The elasticities derived from applying these tests are given in the table below. As discussed above, the maximum overall elasticity which PDFH recommends in the extreme circumstance that 100% of journeys are for Leisure purposes is -1.25.

Table 5: Test Results

Test	Option 1	Option 7
A (elasticity required for negative abstraction to occur)	-1.33	-1.20
B (elasticity required for the amount of negative abstraction detailed in the report to occur)	-1.57	-1.67

1.4 Conclusion

The extreme results given in Table 5 provide further evidence that the NPA Ratio results contained in the CH2M Report do not seem credible. VTEC have now inferred extraordinary elasticities from the CH2M results, way outside the bounds of PDFH recommendations, using two different methods.

The method detailed in this note mimics closely the methodology deployed by CH2M. In this way we have discredited the assertion that CH2M's results are explicable by PDFH v5.1 fare elasticity recommendations, combined with the methodology detailed in PDFH v5.1 Chapter B11.4 and the fare change assumptions adopted by CH2M.

From VTEC's perspective it is essential that these issues are resolved before any decision is taken by ORR. Previous work has shown that both the First Group application and the Alliance application for paths to Leeds and North Lincolnshire would fail the NPA test if these modelling issues were corrected. We do not see how the ORR can reach a safe decision without this issue being resolved.

VTEC would welcome an opportunity to explain and discuss these issues with CH2M and Systra, the ORR's independent auditors.