Joe Quill
Office of Rail Regulation
One Kemble Street
London, WC2B 4AN

Hannah Deveson
Regulatory Reform Specialist
Network Rail
Kings Place, 90 York Way
London, N1 9AG

Email:hannah.deveson@networkrail.co.uk
Telephone: 020 3356 9482

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Dear Joe

Response to ORR's Periodic Review 2013: consultation on a freight-specific charge for biomass

Network Rail welcomes the opportunity to respond to ORR's consultation on a freight-specific charge for biomass. As we have stated in previous 2013 Periodic Review submissions, particularly those related to freight charges, we recognise the vital part that rail freight plays in the UK's logistics industry and we value freight operators as important partners in the continued success of the railway.

We recognise the emerging importance of biomass to the UK energy industry and the government commitment to supporting its use in favour of the coal which is less sustainable. In our response to ORR's earlier consultation on the variable usage charge and a freight-specific charge (May 2012)[1], we considered that there was considerable merit in not levying any freight-specific charge on the biomass market segment and proposed that ORR should revisit its policy in the 2018 Periodic Review (which would also coincide with the recalculation of the Department for Energy and Climate Change (DECC) credit regime). We noted that unlike other market segments that had been identified by ORR and its consultants as being very price inelastic, the biomass market is still in its early stages of development and, therefore, is subject to much greater uncertainty.

We continue to hold this view and are particularly mindful of the emerging nature of this market. We also note, however, that ORR is 'minded to' introduce a freight-specific charge for biomass in Control Period 5 (CP5). We have therefore responded to the consultation on this basis, recognising that in the event that ORR does determine such a charge, an approach will need to be agreed for its calculation.

We respond to each of ORR's specific consultation questions in Annex A to this letter.

Assessing the impact of higher access charges for biomass haulage

[1] http://www.rail-reg.gov.uk/pr13/PDF/freight-charge-consultation-may2012.pdf

We note that as stated in the consultation, ORR's legal framework requires it to assess the potential of the charge to result in a material transfer of the market segment to road haulage, and that ORR concludes, in general, a freight-specific charge is unlikely to divert significant biomass traffic to roads. We consider, however, that there are wider implications of higher access charges for biomass which merit further consideration and analysis, including:

- the impact on future investment decisions by power stations to convert to biomass;
- the interaction of these investment decisions with the level of government subsidy to promote the use of biomass; and
- whether the introduction of a freight-specific charge could result in switching to other forms of electricity generation.

These are discussed further in Annex A, specifically in our response to question 1.

The need for a pragmatic approach for the introduction of a biomass freight-specific charge

As noted above, while we consider that there would be merit in not levying any freight-specific charge on the biomass market segment in CP5, in the event that ORR does determine such a charge, a pragmatic approach will be important.

Our analysis shows that biomass has 55% of the energy value of the equivalent volume of ESI coal (which can be considered as a close substitute), due to its lower calorific value and density. On this basis we propose that the introduction of any freight-specific charge for biomass is set at 55% of the value of the capped ESI coal freight-specific charge, which would result in a maximum charge of £2.22 per kgtm (assuming that the ESI coal freight-specific charge is set at the maximum cap of £4.04 per kgtm).

Because of the limited amount of historic biomass data, we consider that this approach is simple, pragmatic and overcomes the difficulties and subjectivities that would be associated with apportioning avoidable costs to this nascent market segment. We also believe that using the ESI coal rate as a base, and pro-rating it to account for lower density and calorific value, is appropriate for the following reasons:

- we would not expect there to be an increase in 'calorific demand' (i.e. GB energy requirements would remain the same) as a result of using biomass. Therefore, this approach should allow Network Rail to recover an equivalent amount of fixed cost compared with if coal traffic was not substituted for biomass;
- we understand that biomass flows into power stations will be likely to be similar to ESI coal flows; and
- at this early stage of market development, biomass data is too 'sparse' to be robust in determining any charge.

We discuss our proposal in more detail in our response to question 3 of the consultation.

Summary

Due to the emerging nature of the biomass market and the resulting uncertainty, as discussed, above, we have concerns regarding ORR's 'minded to' position on the introduction of a freight-specific charge for biomass. However, in the event that ORR does

decide to introduce such a charge, we stress the importance of adopting the proposed simple and pragmatic approach which recognises the lower density and calorific value of biomass, when compared with ESI coal.

Should you wish to discuss any of the points discussed in this letter and our responses to the specific consultation questions, please do not hesitate to contact me. We would be content for you to publish all of our response as we do not consider it to be commercially sensitive.

Yours sincerely

Hannah Deveson

Annex A- Network Rail response to ORR's fright specific charge for biomass consultation questions

Q1. To what extent might higher access charges increase biomass road transport?

We consider that the energy generators and our freight customers are best placed to provide a view on whether higher access charges will lead to a switch from rail to road haulage of biomass, given their proximity to the market. We have, however, referred to the market analysis carried out by MDST and NERA, on behalf of ORR for its May 2012 consultation on the variable usage charge and freight-specific charge[2].

While MDST's phase 1 report notes that the market for biomass is in the early stages of development, it also notes that biomass is in competition with other forms of energy. In relation to co-firing power stations, MDST concludes that the response to changes in the variable usage charge is likely to be in line with the response for ESI coal and that the demand for co-fired biomass appears to be inelastic with a low propensity for switching to road.

We also note that in relation to new rail-fed dedicated biomass plants, MDST considers that there is more potential for this market to grow with demand being likely to be much more elastic (and indeed higher than the cut-off for those commodities deemed not to be able to bear a mark-up by ORR in its January 2013 conclusions document).

We understand that MDST's GB freight model (GBFM) was used to inform its market analysis. We would expect the assumptions underpinning the GBFM to have been fully tested and validated with the relevant industry stakeholders.

More generally, we consider that given the emerging nature of the biomass market, predicting the way in which it reacts to higher rail access charges is not straightforward, particularly given that, to our knowledge, the majority of the UK's power stations (with the exception of Drax) have not yet committed to converting to biomass or undertaken the required investment. We also note that when considering the impact of higher access charges for biomass, NERA's report concluded that it is difficult to predict because it depends on the extent to which government subsidies are also adjusted to ensure that biomass generation is encouraged.

We also believe that there would be considerable merit in further exploring the propensity to switch to other forms of electricity generation in response to a change in price for the haulage of biomass by rail. While MDST's report appears to recognise that biomass is in competition with other forms of energy, the extent to which this has been considered in the market analysis is unclear.

We note that as stated in its consultation, ORR's legal framework requires it to assess the potential of a potential charge to result in a material transfer of the market segment to road haulage, and that ORR concludes, in general, a charge is unlikely to divert significant biomass traffic to roads. We consider, however, that there are wider implications of higher access charges for biomass which merit further consideration and analysis, such as the impact on potential investment decisions, the interaction with government subsidies to

[2] http://www.rail-reg.gov.uk/pr13/PDF/freight-charge-consultation-may2012.pdf

promote the use of biomass and also whether it could result in switching to other forms of electricity generation.

Question 2. Should a biomass freight specific charge be calculated on the basis of avoidable costs as was done for the commodities on which caps have already been set?

We recognise that the advantage of calculating a freight-specific charge for biomass on the basis of avoidable costs would be its consistency with the commodities for which caps have already been set.

However, we would urge caution with this approach, given the uncertainty around the allocation of costs to this emerging market segment and the long-term traffic forecasts for biomass. A considerable amount of our cost modelling is based on long-term traffic forecasts but as both the MDST and NERA market studies note, the biomass market is in its infancy and we consider, therefore, that setting any freight-specific charge for biomass on this basis could risk being prone to undue levels of uncertainty.

We discuss our preferred approach to calculating a freight-specific charge for biomass in our response to question 3, below.

Question 3. Should the charge be modified, for example, to reflect calorific value or exempt small stations?

We note that ORR is not minded to calibrate a charge to calorific content as this would not be reflective of the costs to the railway for the haulage of biomass. However, as noted in our response to question 2, given the emerging nature of the biomass market and the associated inherent uncertainty, we consider that the modelling of long-term costs for biomass would risk being speculative. In addition, we consider that the available market data, at this stage, is too 'sparse' to be sufficiently robust.

We have considered, therefore, an alternative approach which takes into account the lower density and calorific value of biomass compared with ESI coal. Our proposed approach uses the ESI coal freight-specific charge[3] as a base and pro-ratas the biomass freight-specific charge accordingly. While we recognise ORR's rationale for proposing to levy a cap for biomass at the same level of ESI coal (£4.04 per kgtm), we disagree with this approach and with ORR's 'minded to' position not to calibrate the charge to the calorific content of biomass.

At a Rail Freight Group conference in November 2012, GB Railfreight presented the following data on biomass and ESI coal:

	Density	Calorific Value
ESI Coal	800 kg per metre^3	25 kJ per kg
Biomass	650 kg per metre^3	17 kJ per kg

Based on this data, our calculations show that 1m^3 of ESI coal generates 20,000kJ whereas 1m^3 of biomass generates 11,050kJ[4]. Therefore, 1m^3 of biomass generates 55% of the

[3] As proposed by ORR in its January 2013 document, at £4.04 per kgtm
[4] 1m^3 coal=25kj*800=20,000kJ and 1m^3 biomass=17kJ*650=11,050kJ

energy value of the equivalent amount of ESI coal. It should be noted that a key assumption underpinning our recommendation is that wagons for the haulage of biomass and ESI coal are constrained by volume capacity (as opposed to weight). This has been validated by Network Rail's freight experts.

We strongly recommend that any resulting freight-specific charge (and freight-only line charge which is discussed in our response to question 7, below) should be charged at 55% of the respective ESI coal charge at a maximum of £2.22 per kgtm.

Consistent with ORR's and its consultants' observations, this approach has been proposed on the basis that biomass can be considered as a close substitute for ESI coal. We also consider that the comparison is appropriate for the following reasons:

- we would not expect there to be an increase in 'calorific demand' (i.e. GB energy requirements would remain the same) as a result of using biomass. Therefore, this approach should allow Network Rail to recover an equivalent amount of fixed cost compared with if coal traffic was not substituted for biomass; and
- we understand that biomass flows into power stations will be likely to be similar to ESI coal flows.

In our view, this approach is simple and pragmatic. It also overcomes the difficulties and subjectivity that would be associated with apportioning avoidable costs to this nascent market segment.

Question 4. Should freight avoidable costs be allocated to biomass using the same methodology as that used for the other market segments to which a freight specific charge applies?

As we have noted in our response to questions 2 and 3, above, we do not think that it is appropriate to adopt the same methodology for the allocation of avoidable costs to biomass as for other market segments. This is due to the emerging nature of the biomass market and the subsequent uncertainty around the long-term traffic forecasts. Instead, we have proposed a pragmatic approach to account for the lower calorific value and density of biomass compared with ESI coal, which is described in our response to question 3, above.

Question 5. Is the resulting cap on the freight specific charge, of £4.04 per kgtm, for biomass reasonable? How would such a charge affect existing biomass flows and development of future flows?

As discussed, above, in our response to question 3, we do not think that it is appropriate to set the cap for any freight-specific charge for biomass equal to the ESI rate for coal. To illustrate why we consider this could be inappropriate, consider if all the existing ESI coal traffic were substituted by biomass. If the £4.04 per kgtm maximum cap were to be applied to biomass, because of the difference in calorific value and density of biomass, we would recover almost twice as much revenue from biomass compared with ESI coal (assuming this was also set at the maximum cap).

We consider that the industry will be better placed to address the impact of the freight-specific charge on current and future flows of biomass. As we have discussed in our response to question 1, however, we consider that the impact of a freight-specific charge on

future investment decisions in biomass plant and facilities and also whether it could result in switching to other forms of electricity generation merits further investigation and analysis.

Question 6, Should a freight specific charge for biomass be phased in? Would it be appropriate to apply the same phasing to a biomass freight specific charge as to the ESI coal freight specific charge?

Yes, it is important to be consistent and for the industry to have certainty on this.

In February 2013 we consulted on the phasing in of the freight-specific charge for the relevant rail freight market segments[5]. We used ORR's suggested profile that was included in its January 2013 decision document, which assumed a gradual introduction of 0% in years one and two; 20% in year three; 60% in year four; and 100% of the charge in year five of CP5.

Following consideration of the consultation responses which we received, we expect to conclude to ORR on the appropriate phasing profile in April 2013.

Question 7. Should biomass be subject to a freight-only line charge, calculated on the same basis as for other market segments?

We consider that if ORR concludes that biomass is able to bear a freight-specific charge, it is important to be consistent. Therefore, we consider that biomass flows should also be subject to a freight-only line charge (although we reiterate our position that due to the emerging nature of the biomass market, there would be considerable merit in not levying the freight-specific and freight-only line charges on biomass traffic until the next periodic review).

If a freight-only line charge were to be introduced for biomass, we consider that its calculation should be consistent with our proposal for the freight-specific charge which we discuss in detail in our response to question 3, above. This would result in the biomass freight-only charge being set at 55% of the ESI coal freight-only line charge.

[5] http://www.networkrail.co.uk/WorkArea/DownloadAsset.aspx?id=30064784848