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Office of Rail Regulation
One Kemble Street
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8 February 2012

Dear Mr. Owen,

Periodic Review 2013 – Consultation on Incentives

I am pleased to submit RSSB's response to the consultation document issued by the ORR in relation to the Periodic Review 2013 – Consultation on Incentives. In particular, we are commenting on the consultation in Section 10 of the ORR document - relating to the proposed Innovation Fund (Paragraphs 10.17 – 10.43) and Environmental Incentives (Paragraphs 10.51 – 10.71).

Introduction to RSSB relevant to this consultation

RSSB is a cross industry body that manages a number of complex cross industry issues with and on behalf of its members. Included within its activities are interface standards, safety data and intelligence, European engagement, research and development, sustainable development, and since 2008, RSSB has been the parent organisation for the Technical Strategy Leadership Group (TSLG). RSSB works under a constitution agreement that is agreed by the industry and approved by the ORR and is funded by a combination of member fees and direct government grant. The direct grant from government funds virtually the entire cross industry research programme, including all of the activities of TSLG.

In the period after the high profile railway accidents around the turn of the century, it was recognised (originally by Sir David Davies and then by Lord Cullen in their respective reports) that left to its own devices and incentives, the industry had undertaken no cross cutting safety research since the reorganisation and privatisation of the mid 1990s. Accordingly, it was decided by the Government to establish a fund of £75m to be spent over 5 years to establish and deliver a programme of health and safety related research. Initially handed to Railway Safety (RSSB's predecessor organisation) the research and development programme has been developed and managed on behalf of the industry since 2001/2, explicitly addressing areas of market failure in the rail industry. An early and very significant piece of work by the research programme was the establishment of a project to evaluate and develop the GB

Business Case for ERTMS. The work sponsored by Railway Safety and completed by RSSB showed that there was a very poor safety case to invest in ERTMS and that decisions relating to its implementation should be based on business benefits alone. The activity led by RSSB moved into the implementation mode and was taken over by the SRA and subsequently by Network Rail.

In 2006 the RSSB Board determined that the research programme should address a business based agenda focused on delivering better value for money to the industry and since then has seen the safety research as an equal contributor to the overall effort to improve business performance. Since this time a significant amount of research has been steered by the many cross industry groups that RSSB facilitates – including in particular, the Sustainable Development Steering Group, the 5 Systems Interface Committees, the Safety Policy Group, the Operations Focus Group, and (since 2008) the Technical Strategy Leadership Group. All of these groups have features in common, including:

- All membership categories of RSSB (Network Rail, TOCs, FOCs, ROSCOs, Infrastructure Contractors and Suppliers) are entitled to be represented on them. In general they all select their own chairman from among the membership, though the RSSB Board appoints the chairs of the system interface committees
- The groups can co-opt any other people by agreement (and frequently do – e.g. London Underground and HS1)
- ORR and DfT are entitled to be observers
- They operate by consensus
- They are all under the governance structure of the RSSB – including supervision by the RSSB Board
- RSSB funds their management and technical expertise, but the decisions taken by these groups are all 'industry decisions' because they are taken by a consensus of those participating
- RSSB carries insurance for all the groups (This was a problem for the predecessors of the SICs – the two 'Systems Authorities' were unable to secure insurance and it was only by creating and adopting the SICs under RSSB's corporate insurance that they were able to attract senior railway managers to participate in the important work they do)
- The groups are all capable of sponsoring and steering cross industry research and development

The research outputs sponsored by these groups are far too numerous to mention, but include the following

1. The vehicle track interaction strategic model – VTISM – now used by Network Rail and rolling stock maintainers to optimise interventions and to evaluate

options at the wheel/rail interface (created through research under the direction of the Vehicle Track SIC)

2. The industry Sustainable Rail Programme (SRP) – was created and promulgated through research activity and sponsored by the Sustainable Development Steering Group
3. The initial evaluation of the options for a new generation of electrification was developed under the sponsorship of the Vehicle/Energy SIC (in the days when the published government policy was to have no further electrification). The initial business cases were taken up, first by ATOC and then by the Chief Executive of Network Rail and the Chairman of ATOC
4. The research sponsored by the Safety Policy Group supported the industry decisions to abolish the 'multiple Value per Fatality' in safety evaluation and to re-value (downwards) the majority of minor injuries sustained on the railways. Both of these changes save costs in the long term
5. Research sponsored by the Vehicle/Train Control and Communications SIC has been used to develop and gain industry support for a long term strategy for TPWS

These are all world leading pieces of work that enable the industry to be at the frontier of world railways, and they are all the product of cross industry collaboration, supported by the research programme. They have generated huge incremental value for the railway and together have been estimated to have the potential to create value in the £000's of millions if widely implemented.

Funding

The R&D programme has been funded almost wholly by government, through direct grant to RSSB, topped up with some EU Commission money for specific projects and a contribution from RSSB members.

Government funds this programme because it recognises that it addresses interface-related issues that the market would not otherwise resolve, and further, that the benefits from cross cutting research flow back to government and the taxpayer through the franchising and periodic review processes.

The funding already in place between DfT and RSSB lasts until the end of the first year of CP5 (March 2015).

Governance arrangements for the use of this funding are established through the RSSB board. TSLG exists within this framework of governance and has delegated authority from the RSSB board to spend up to £2.5m during the current financial year, topped up

with an additional £1.35 through a further grant from the DfT to promote development projects.

Innovation

Innovation and the need for a fund

- Arising from the work initiated by TSLG, we believe that there is common ground, across both government and industry, that innovation is a good thing and that it is not working as well in the rail industry as in more successful sectors or in other countries.
- There is also common ground that the rail industry significantly under-invests in innovation, by any comparable marker, as evidenced in the Rail Value for Money study.
- Both points above were analysed in detail in work RSSB commissioned from AD Little on behalf of TSLG http://www.rssb.co.uk/sitecollectiondocuments/pdf/reports/research/T934_rpt_final.pdf.
- That work identified the key inhibitors of innovation, notably the lack of a suitable body to champion innovation, the 'valley of death' where lack of funding fails to allow good initial research to develop to commercially available products, and the importance of the supply market in producing innovative solutions.
- The principal areas of market failure are whole system, cross-industry areas - the focus of both the existing RSSB managed industry research programme and specifically strategic research activities which RSSB established TSLG on behalf of the industry, to address.
- In the longer term some of these market failures should be addressed through significant changes to industry commercial arrangements, and the PR14 process should target them. However, it must be recognised that these solutions also rely on the incentives on the supply market which is not directly exposed to regulatory incentives.
- RSSB is also actively engaged in other activities that seek to address some of the market deficiencies, for instance jointly funded R&D calls with the Technology Strategy Board and with the Engineering and Physical Sciences Research Council, and supporting for the proposal to establish a Transport 'Catapult' (Technology Innovation Centre) and other initiatives.
- Nevertheless, the above activities and proposals (both RSSBs and what might come through from regulatory intervention) cannot address the barriers to innovation in the short term, and the amounts of money the industry has at its disposal in the short term is small. There is a need for a fund to address the gap over the CP5 period. This would facilitate the timely delivery of benefits from changes introduced by ORR. (e.g. developing/maintaining confidence by funding development and initial

demonstrators in CP5 that will lead to service level testing/applications in CP6 and beyond).

- The fund would be used to bring together those industry players and suppliers that ideally would share a common interest in optimising the balance between performance, cost and risk but find they cannot justify acting on an individual basis because of uncertainties, mismatched cost/benefits, timescales, lack of funds, etc and which would therefore represent missed opportunities for the industry.
- The proposed fund would enable somewhat larger applications to be targeted than is feasible via the currently available mechanisms, so it would be possible to move projects further along the 'Technology Readiness' levels towards market introduction. It would probably be sensible in that context also to adopt a flexible approach to the profiling the fund's deployment, balancing typically less cash-hungry start up phases in Year 1 with cash-hungry second/third year development.

What opportunities would the fund unlock?

The fund would represent a different order of magnitude from that currently available via the existing TSLG and other RSSB R&D funding, so has the potential to bring about transformative effects. The primary focus would be in areas with the largest benefits where market failure is the key inhibitor. Some of these are the Game Changers identified by TSLG and set out in more detail in the TSLG response to this consultation. These include:

- **Energy** – the market produces components but not complete railway solutions for the requirement to extend electrification in an affordable way. There are nascent technological solutions based on part electrification, but not strong enough incentives for all the necessary parties (Network Rail, train operators, rolling stock owners and suppliers) to co-operate to take them forward.

  Opportunities from the development of battery and fly wheel technologies would be unlocked through the fund facilitating demonstrator projects as these mature and become ready for application in the rail sector. This would increase industry confidence in the likelihood of an effective, affordable whole- system solution.

- **Capacity –** A major financial prize is available from the potential to significantly increase current capacity, which modelling has demonstrated to be possible with a range of technical developments. The technologies and systems that need to be developed, trialled and demonstrated include:

  - **Positioning systems** which are part of the route to driverless trains, intelligent maintenance systems and reduced infrastructure costs

- **Intelligent braking** –integrating braking systems, control systems, positioning systems, information architectures etc to release significant capacity through reduced headways.

- **Condition monitoring** – needs system wide solutions. Market failure re sharing of costs and benefits and coordinating activity of a wide range of suppliers toward the objective.

- **Reliability improvement** - modelling has shown that significant capacity improvements are achievable if greater reliability can be brought about.

- **Security systems** – to protect the benefits gained using the new technology**.**

- **Control algorithms** - optimising network capacity or trading it against other criteria (eg energy saving) as policy determines.

- **Information system architectures** linking all providers and users**.**

- **Modelling and simulation** supporting development of the above

These game changers will be set out in much more detail in the **Rail Technical Strategy** – which will define, articulate and foster industry's requirements for technical support over the next 30 years, and will need serious funding going forward if it is to deliver the RVfM benefits. The fund would assist specific demonstrators where the market could not do so, and help generate an ongoing cross-industry collaborative ecosystem.

Governance

The governance of the fund would be a key consideration. By common agreement the fund should be subject to whole-industry governance and it has been proposed in the IIP that this sits with TSLG.

There is an existing governance structure already in place for the funds dispensed by TSLG. Currently funds are allocated to TSLG by the RSSB Board from the overall allocation of R&D expenditure. In 2011/12 out of the total R&D funding of just over £10m, £3.85m is allocated to TSLG with a delegated authority to spend within that limit. Appraisal processes are in place within TSLG to decide on the best value application of those funds.

The public interest test for such governance would be somewhat higher in respect of the sums involved under the proposed fund than for the relatively smaller amounts

currently managed through TSLG. We would therefore expect the controls already in place to be enhanced, again under the supervision of the RSSB Board.

The RSSB Board has industry nominated representatives from the highest level of the industry, including the chief executives of Network Rail, Virgin Rail Group, Southeastern, Angel Trains, together with the Director General of the RIA and the Chairman of the Railway Contractors Association

Sourcing and routeing of funds

It is common ground that the funds for the Innovation Fund should be managed through supervision and governance that is cross industry and system focussed. As set out in the IIP, that means ensuring that the application of the funds is directed by the cross-industry Technical Strategy Leadership Group.

Given that the proposed fund is intended to be a long term investment in improving the innovation capability of the industry, leading to benefits for the taxpayer in terms of both industry costs and revenues, it is proposed that it should come from government funds. In order to reach TSLG it would be made available directly to RSSB – which runs a single till account for both member funded activities and all the sub-groups that work under the RSSB umbrella – including TSLG. As now, the RSSB Board can allocate funds for specific purposes (in the current year it has allocated £3.8m to TSLG) and if it were to receive the funding for the Innovation Fund, it would similarly ring fence this and place it at TSLG's disposal, subject to the introduction of appropriate governance.

There are five possible routes for this fund to reach RSSB for TSLG:

1. Direct DfT grant to RSSB (for TSLG) – This is the current model for funding TSLG's activities and therefore represents the status quo, albeit this would represent an increase of around 300% in the direct grant from DfT to RSSB (from c £10m this year to £40m in 2014/5).

2. RSSB Member funding (established in the same way that member funding of the core activities of RSSB was put in place from 2006, via licence obligation to fund and participate in the governance process). This would involve NR and TOCs receiving the money through the Periodic Review and franchise contract adjustments and passing to RSSB through RSSB's budget process.

3. DfT to franchise agreements, to access charges to Network Rail, to RSSB for TSLG (model used for the Safety levy, again enshrined in the licences of NR and TOCs/FOCs).

4. Direct DfT grant to Network Rail.

5. Additional allowance on Network Rail RAB.

Both options 4 and 5 would need a mechanism to ensure that the funds are passed to TSLG without a layer of Network Rail governance.

It seems to RSSB that there is merit in maintaining a single route for the totality of the funds, including the existing £2m pa and the proposed £30m pa and that maintaining the current route would be sensible. Under options involving funds being routed via Network Rail it should be ensured the funds are paid (passed through) automatically and are not subject to Network Rail governance processes.

The text above addresses our arguments in favour of the proposed Incentive Fund, and for completeness we provide short answers to each of the ORR consultation questions.

10.1 Do you agree with our overall proposed approach to incentivising innovation? If not, what do you propose to do instead?

No we do not. The ORR proposed approach is focussed on the incentives on Network Rail, while the TSLG proposal, included in the IIP is for a cross industry fund, with the ability to use it to address genuine system wide opportunities that are not generally susceptible to the conventional regulatory incentives, because they address industry opportunities, over a longer time horizon than control periods and franchises, and because the benefits from these investments will flow back to Government via the short term PRs and Re-Franchising processes.

The proposed fund would address long term, system wide opportunities

10.2 What merit do you think there would be in an innovation fund? How should such a fund work? How would we guard against 'crowding out' and ensure the fund did not displace existing expenditure?

We strongly support the innovation fund proposed in the IIP, for the reasons set out in the main text of this response. We do not see crowding out as the identified activities do not take place currently, and the simple application of the test that RSSB applies to all research proposals (is this the interest and domain of a single duty holder or a cross industry issue?), together with other enhanced governance arrangements, would ensure that there is no crowding out.

10.3 What merit do you think there would be in an innovation prize? How should such a prize work? Who should be eligible to enter? What sort of prize would best stimulate genuine innovation?

While a prize would be good supportive and complimentary instrument, unless it was enormous, it would not address the strategic need identified in the work of TSLG, to address the gap between basic research and deployment of new technologies. We also note that there are current prizes being promoted for innovation by the IMechE and RIA/RSSB.

10.4 In relation to the use of output KPIs, what KPIs do you think we should target and why? Should we monitor them only or should they have some incentive attached to them and if so what?

The proposed innovation fund is very much a supply side input based initiative to kick start innovations that have yet to take root. For that reason output based KPIs are less relevant than measures of input activity such as the proportion of rail industry turnover spent on demonstration projects, the number of industry players participating in such activities etc. Over time there will be output indicators, such as the progressive reduction in the unit cost of railway outputs, the greater speed to market of products etc, but we suggest that it is premature to define specific output based KPIs for such a fund.

10.5 Do you think that KPIs should be introduced for companies other than Network Rail to monitor innovation across the wider industry?

It is proposed that the innovation fund will be governed by the Technical Strategy Leadership Group, which is itself cross industry, involving participation of all the major sectors in the industry (categories of RSSB member) together with the ORR and DfT, LUL, TS and RSSB, and the reporting of progress in commissioning and delivering innovation by that group would be the suggested means by which innovation is monitored.

Environmental Incentives

We strongly support ORR's comments that the rail industry should not only maintain its competitive advantage as a low carbon mode[1], in the light of falling emissions from road vehicles, but also has an important role to play in contributing[2] towards the UK's ambitious carbon reduction targets.

Through the industry's Sustainable Rail Programme[3] (SRP) we are working with the ORR, Department for Transport (DfT) and Transport Scotland (TS) to develop the Carbon Management Framework, referred to in the consultation, to support HM Government in its response to the UK's carbon targets.

General response to consultation

We encourage the ORR to take a more proactive role in monitoring operators as suggested under Section 10.73 and below are answers to the relevant consultation questions.

10.6 Do you have any comments on our overall approach to environmental incentives? Specifically, do you think we should introduce other environmental incentives beyond those that we are proposing? Do you think we should go further in encouraging the rail industry to improve its environmental performance even if this resulted in a shift to other modes?

[1] UK figures published in August 2011[1] show that national rail emits 53.4 gCO_2 per passenger km compared to an average 127 gCO_2 for cars. For freight, rail emits 28 gCO_2 per tonne km compared to 127.2 gCO_2 for HGVs.

[2] The Initial Industry Plan offers a railway that by the end of CP5 will contribute towards a lower carbon economy; reducing CO2 emissions per passenger kilometre by 25% in England and Wales and 28% in Scotland, as well as reductions in freight carbon.

[3] The SRP has been established to identify and drive forward improvements in the sustainable performance of rail

We support the incentivisation of Network Rail to reduce electrification transmission system losses to an efficient level and agree that operators should be incentivised to pay for what energy they use through an increase in metering of traction energy by CP5. Metering will promote greater energy efficiency and support a better understanding of transmission losses. Whilst outside ORR's realm, we would recommend that this is supported through a franchise requirement and CP5 funding beyond year 1.

We consider the suggested reputational benefit of reporting to National Rail Trends to be limited as energy and carbon is reported as a global figure. Whilst not dismissing this option, further consultation would be needed if data was displayed at an operator level. It is also noted that many operators already report their carbon emissions and energy consumption publicly through their respective CSR reports.

ORR should consider other mechanisms to promote more energy efficient rolling stock, such as enabling whole life thinking at the design and specification stage for new trains. This could be backed up by incentivising innovation and funding also mentioned under this section of the consultation.

10.7 We are keen for the industry to propose methodologies for monitoring emissions and producing improved whole-life, whole-industry business cases. What role do you think the ORR should play in this process?

A consultation by ORR with industry is underway to widen the scope and robustness of emission data reported in the National Rail Trends against an industry agreed carbon protocol. We believe there is a further role for ORR in challenging industry's adherence to the protocol.

With reference to the DfT/ORR's consultation on whether ORR has a greater role in regulating passenger franchisees we consider there to be an opportunity to extend ORR's role to monitor the performance of franchise's environmental plans (which the DfT intends to include within all franchise bids). The effectiveness of these plans in reducing carbon emissions will be greatly strengthened through ongoing performance monitoring.

We agree with ORR's intention to put incentives in place for Network Rail to undertake whole-life costing and the encouragement of a whole-industry view of cost. With the right incentives those energy efficiency measures with potentially greater upfront costs will be deployed, delivering far greater energy and cost savings.

The SRP will be working with industry to identify opportunities within key decisions and processes and agree tools that will encourage optioneering for whole life energy cost thinking. We would be happy to meet to discuss this further and to provide support, where appropriate, in the development of this incentive.

Over the coming year the SRP will work with ORR, DfT and industry to develop a plan to support the implementation of the carbon management framework, supported by a more robust analysis of the costs, savings and impact of the framework. In turn, this will form an input to the Strategic Business Plan.

Yours sincerely

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