Calculation of charges for the use of rail infrastructure: a perspective from ORR

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RAILCALC stakeholder workshop, Brussels, 15 February 2008
Structure of presentation

• Setting access charges
  – Periodic reviews
  – Calculating charges
  – Determining what the market can bear

• Benefits of regulation

• Conclusions
Periodic reviews / access charges reviews

• We determine Network Rail’s access charges and outputs every five years in a “periodic review” or “access charges review”
  – Typically a 2+ year process to determine
  – Charges and outputs set for a control period of 5 years duration – which provides clarity, certainty and incentives
  – We are currently undertaking the 2008 periodic review to set outputs and access charges for April 2009 – March 2014

• The process is based around Network Rail submitting to us its “strategic business plan” – which we review and challenge

• We publish (after consultation) of final determinations on the outputs, access charges, etc for the control period
Key issues in an access charges review

• What outputs are required?
• What is the efficient level of expenditure required to deliver the outputs?
• Financial framework issues (e.g. cost of capital)
• The treatment of risk and uncertainty
• The incentive regime and the structure of charges
• Monitoring and enforcement
• Government set “high-level” railway outputs (e.g. safety, overall capacity and performance) and set out the level of public funding
Incentives applying to Network Rail (and where applicable train operators)

- RPI – X type regulation
- Access charges
- Reputational incentives
- Management incentive plan
- Volume incentive
- Asset stewardship index
- Possessions regime
- Performance regime
Network Rail revenue: building block approach
(average annual value for current control period (April 2004 – March 2009), at current prices)

Operating and maintenance expenditure (€3.3bn) +
Amortisation/depreciation allowance (€2.2bn) +
Return on the RAB (€2.2bn) =
Gross revenue requirement (€7.7bn)

Renewal (€3.6bn) & enhancement expenditure (€0.7bn) →
Regulatory asset base (RAB) (average value €33bn)

Revenue requirement funded by:
• Variable charges: €0.6bn
• Fixed charges: €2.3bn
• Network grants: €2.9bn
• Additional borrowing: €1.0bn

Other single till income (€0.9bn) →
Net revenue requirement (track access charges) (€6.8bn)
Objectives for setting access charges

• Promote the objectives of our duties under section 4 of the Railways Act and be consistent with the wider objectives of funders.

• Incentivise Network Rail, train operators, train manufacturers, rolling stock companies and funders to ensure the efficient utilisation and development of the network and the optimisation of whole industry costs.

• Not unduly discriminate between users of the network.

• Be practical, cost effective, comprehensible and objective in operation.

• Be consistent with relevant legislation, including the EU Directive 2001/14/EC.

• Reflect the costs caused by use of the infrastructure (both to Network Rail or otherwise) and

• Ensure that charges enable Network Rail to recover but not to over recover its allowed revenue requirement.
Structure of charges

- **Variable charges** (applicable to passenger and freight operators) – set to reflect cost directly incurred as a result of operating the train service

- Variable usage charge

- Traction electricity charge

- Capacity charge

- Other track access charges

- Station and depots charges

**Fixed charge**

- Determined at periodic review and allocated between franchised passenger operators

- Separate framework and possible charges for **enhancements** to capability, capacity and functionality of network
Variable usage charges

• Based on
  – “Top-down” analysis of costs that vary with usage to establish set of variable/marginal costs, then
  – Distribution of this to individual vehicles in proportion to propensity to cause damage to network

• Charge set to recover short run marginal costs – based on assessment of steady-state efficient cost [cost directly incurred]

• Specified in pence per vehicle mile for each type of vehicle – in published prices lists. Applied to actual volume of miles of each type operated

• Cost of track maintenance and renewal depends on vehicle characteristics
  – Vary between with axle load, speed and unsprung mass. Looking to change from 2009 to reflect lateral/longitudinal forces as well as vertical forces
  – Adjustment made for freight wagons to reflect relative track friendliness (table of discounts) and reflect coal dust spillage (20% discount)

• Network Rail is reviewing the approach as part of the current periodic review – moving away from a “top-down” analysis to an engineering based/modelled assessment
# Current variability percentages by asset category

<table>
<thead>
<tr>
<th>Asset</th>
<th>Activity</th>
<th>Component</th>
<th>% variable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Track</td>
<td>Maintenance</td>
<td>Rail</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td>Renewal</td>
<td>Sleepers</td>
<td>95</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ballast</td>
<td>25</td>
</tr>
<tr>
<td>Structures</td>
<td>Maintenance and renewals</td>
<td>Ballast</td>
<td>10</td>
</tr>
<tr>
<td>Signalling</td>
<td>Maintenance</td>
<td>Rail</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Renewal</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Electrification</td>
<td>Maintenance</td>
<td>AC</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Renewal</td>
<td>DC</td>
<td>35</td>
</tr>
<tr>
<td></td>
<td></td>
<td>41</td>
<td></td>
</tr>
</tbody>
</table>
Determining freight only line charges

• Government policy objective is that freight operators should pay the “full costs” of “freight only” lines

• In accordance with Directive 2001/14/EC a mark-up on the variable charge can only be levied if the market segment can bear the cost

Definition of market segments

• Criteria:
  – Practical and objective
  – Common (commercial) characteristics
  – Not distort incentives

• Decision to use rail freight is largely based on product characteristics

• We have defined thirteen market segments including: ESI coal, construction, inter-modal, spent nuclear fuel, iron ore, waste, automotive and petroleum & chemicals

• Fairly broad categories

• Industry and Network Rail billing system use this approach
Approach to what the market can bear

- We have considered four factors in looking at the impact of possible changes to charges:
  - Impact on the rail freight market
  - Impact on future growth
  - Impact on operator profitability
  - Other impacts (including environment)

- We have undertaken detailed analysis and made judgements, and taken into account our public interest duties

- The charge should only apply to those sectors that could bear an increase in charges

- We consider that only ESI coal and spent nuclear fuel can bear this

- The approach is objective and transparent

- The work has involved considerable engagement with the industry

- Meets the requirements of Directive 2001/14/EC, our charging objectives and public interest duties, and government policy
Modelled impact of track charges increases on rail freight traffic (2014, tonnages)

<table>
<thead>
<tr>
<th>Commodity</th>
<th>Baseline growth by 2014</th>
<th>Impact of +20% access charges increase</th>
<th>Impact of +50% access charges increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>All commodities</td>
<td>20%</td>
<td>-3.9%</td>
<td>-7.9%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Key commodities</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maritime containers</td>
<td>50%</td>
<td>-6.4%</td>
<td>-15.2%</td>
</tr>
<tr>
<td>Domestic intermodal</td>
<td>215%</td>
<td>-5.4%</td>
<td>-13.5%</td>
</tr>
<tr>
<td>ESI coal</td>
<td>-9%</td>
<td>-0.4%</td>
<td>-1.1%</td>
</tr>
<tr>
<td>Spent nuclear fuel</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
</tbody>
</table>
Summary

• Calculation of marginal costs is well established in GB

• It is feasible to calculate and implement a (relatively) sophisticated structure of charges

• The structure of charges is a key element in the overall set of building blocks, or framework, for establishing Network Rail’s revenues – and the wider regulatory/incentive framework