

Intercity Express Programme

A Summary and Overview

Preface

Purpose

This document provides an introduction to the Intercity Express Programme. It provides interested organisations with information on the requirements and timescales for the development and subsequent introduction of a new fleet of trains.

The programme is closely linked to Government's long term strategy for rail. It is a forward looking initiative to provide for the eventual replacement of not only the existing fleet of High Speed Trains, but also provide the basis of a fleet of trains that can provide many of the other long distance services on Britain's railways.

Why is Government Involved?

The railway network will continue to require significant support from the public purse. Getting the right train is as important as identifying the service levels that any new trains will have to operate. Trains have potentially a long life, well beyond the duration of individual franchises. The design and cost of trains directly influence the type and volume of service provided as well as the cost. Flexibility is a key issue to ensure changing demands for travel can be catered for satisfactorily within the 'service career' of future train fleets. There are also the foreseeable challenges of providing increased capacity, improved performance and safety, whilst being more attuned to delivery against the highest environmental standards.

As a result, the Department for Transport (DfT) has brought the railway industry together to develop and agree a programme which can meet such requirements for trains operating on the key intercity routes and on the major cross country and regional corridors. This is a long term programme. Many of the trains currently in operation still have a number of years ahead in valuable service. However, sufficient lead time is required to achieve the right result. This document summarises the overall requirements and the timescales within which the work will be undertaken.

Further Information

If you have other information needs in this regard please contact the Department.

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1. The Programme

The Opportunity

- 1.1 The Secretary of State for Transport has approved plans to initiate the procurement of a fleet of between 500 and 2,000 vehicles, to be provided for approximately 30 years by a single supplier, or Consortium or Special Purpose Vehicle (SPV), under an availability and reliability agreement to future passenger rail franchisees.
- 1.2 The Intercity Express Programme (IEP) is potentially the most significant rolling stock investment programme in the UK for over 30 years. It is a unique opportunity for the market to contribute to the development, introduction and long-term operation of a new generation of trains to serve Britain's rail network's long-distance routes well into the 21st century.

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- 1.3 IEP results from the requirement to renew a large number of long distance trains within the next decade, and to enable the rail network to accommodate the anticipated substantial growth in demand.
- 1.4 Over recent years, Train Operating Companies (TOCs) have introduced various designs of new train on to the Intercity network. Whilst this has helped address the need for fleet renewal and expansion, it has not necessarily achieved an optimum in terms of flexibility, or been able to reflect opportunities to make advances that rely on infrastructure changes or reflect likely costs over the whole of the life of the assets concerned.
- 1.5 The combined effects is that, looking forward, there is a clear opportunity to derive better value for money from the long distance train fleets than is available from continuing with the current mix.
- 1.6 In 2004 the DfT committed to examine options for a new train to replace the existing High Speed Trains (HST), and to bring wider transport benefits, as part of a long term strategy for the railway. This work has brought together expertise and contributions from across the industry to ensure a 'whole system, whole life' perspective, needed to secure best value for money for passengers and taxpayers. The DfT, aided by this widespread input, is preparing a specification and establishing the assessment criteria against which supplier proposals can be judged.
- 1.7 One of the key challenges for Britain's long distance network is demand growth. There has been continuing growth over recent years and forecasts indicate that this successful trend will continue across all such routes. To provide the capacity for these additional customers, while minimising the need for expensive infrastructure enhancements, train lengths will need to be extended where practicable and efficient use will need to be made of on-board space, without compromising the quality of service offered to customers. Additional trains will also be required to carry this increased demand. Higher performing trains will also facilitate additional line capacity at key junctions, supporting the delivery of more services on any particular route.

- 1.8 This work is integral to DfT's priorities for rail. It will help to meet growing demand and targets for improved performance, capacity and lower environmental emissions.
- 1.9 The DfT intends to publish further information on its longer term plans for the railway in summer 2007, including through the High Level Output Specification and the associated Statement of Funds Available.

2. Programme Requirements

Drivers for Change

2.1 The rationale underpinning the Intercity Express Programme is:

- The current fleets of HSTs and several other long distance trains have been operating on a number of long distance routes since its introduction almost 30 years ago and the trains are being life extended for service up to around 2016. Whilst these trains are capable of further continued operation, there are increased costs in so doing.
- The mix of train types operating on several of the longer distance main lines is such that it is difficult to achieve optimum use of scarce network capacity. Better overall value for money should be obtained from the new trains envisaged here.
- Demand for long distance rail has grown significantly in recent years. Forecasts indicate that this growth will continue in future, with all major routes expected to require a substantial increase in capacity. Both new and longer trains will be required to accommodate this growth, with the infrastructure and timetables also optimised to improve capacity.
- Environmental concerns are an increasingly important consideration in relation to long term rail strategy and the Government's broader environmental objectives. The train fleets in use currently perform relatively poorly in this regard. New trains will also provide an opportunity to reduce emissions of carbon and local air quality pollutants, including measures such as reduced weight, improved fuel efficiency, cleaner fuels and engines, the use of regenerative braking systems and flexibility of power source, while at the same time adding passenger carrying capacity.
- Performance reliability levels (delay to trains/passengers) can be improved by the introduction of new trains. In contrast, further life extension of existing trains, including retrofitting additional features to comply with a range of modern accessibility standards, is likely to cause performance levels to fall compared to today's levels as well as causing some loss of passenger carrying capacity.
- Flexibility is an important requirement to ensure long-term value for money. Unlike a number of existing trains, a new solution can help improve flexibility in terms of: deployment across routes/franchises; train layout and configuration and; different forms of motive power given uncertainties in the availability, price and environmental implications of alternative energy supplies.

Objectives

2.2 The primary objectives of the programme are to:

- Optimise value for money, taking a long term whole-system approach;
- Improve passenger capacity and make best use of available route capacity;

- Ensure flexibility of train deployment to cater for future change in use, demand, power and environmental requirements;
- Deliver a consistent service in terms of the availability and reliability of new trains;
- Provide for the safety and security of passengers and railway employees;
- Deliver an environmentally sustainable solution in terms of improved energy efficiency and reduced noise and emissions, and more sustainable construction and maintenance compared to existing trains and;
- Meet customer requirements in terms of the facilities and environment provided for passengers.

The Case for IEP

- 2.3 A significant amount of work has been undertaken to examine the business case for introducing new capability and capacity on major national routes, to replace existing trains and accommodate growth requirements. The DfT, cognisant of the experience gained in train replacement in recent years, has engaged fully with the industry in developing the business case, the commercial strategy and the broad requirements for a new train. This work has involved manufacturers, financing institutions, train operators, Passenger Focus and Network Rail.
- 2.4 A strong business case has been identified for the introduction of a replacement and higher capacity fleets to a new design, and to replace existing fleets, on several long distance routes, including the East Coast Main Line (ECML) and the Great Western Main Line (GWML). The solution identified is, therefore, expected to be capable of operating on: fully electrified routes; routes that are only partially electrified and would therefore benefit from dual power trains (electric and self power) and on routes without significant electrification. It may also be suitable, subject to price and value, for wider deployment. The DfT will continue to liaise closely with Transport Scotland and the Welsh Assembly Government as the programme develops.
- 2.5 After careful validation and independent challenge, the business case for a new train has been formally approved by the DfT.
- 2.6 The key benefits identified are likely to be achieved by:
- Optimisation of costs, on a whole-life and whole system basis, considering ongoing maintenance, availability and reliability, fuel consumption and the effects of the train on infrastructure and infrastructure on trains;
 - Standardisation of design, to enable maximum flexibility in deployment across the network while retaining flexibility in terms of fit-out;
 - High levels of seating capacity optimised in relation to vehicle length and train length, offering higher capacity per train and efficient use of on board space, while still providing a quality environment for passengers;
 - Reduced energy consumption through a reduction in overall weight per seat. This will probably require low weight but very strong vehicle bodies to be used, as has been done on several modern trains, including the West Coast 'Pendolinos' and the new 'Javelin' trains for Kent;

- Flexibility in terms of train formation, coupling/uncoupling capability and power supply. This will allow trains to accommodate change in deployment, service pattern, demand patterns and energy source throughout their life and;
- Improvements in train performance, resilience, maintenance and energy efficiency characteristics. This will also deliver improvements in journey times for passengers.

2.7 A new train will require some infrastructure changes if IEP objectives are to be fully achieved. Network Rail is helping to clarify the effects of trains on its infrastructure including the possible benefit of improved track quality that could enable train design to be better optimised (especially in relation to suspension and train weight), and changes to platforms, stations and depots required to accommodate longer trains.

Scope of Procurement

2.8 The provisional fleet requirement for IEP is for between 500 and 2,000 vehicles, with deployment subject to costs and value. The scope of service required comprises the design, manufacture, financing, servicing and maintenance of the complete package, over the entire life of the fleet.

2.9 Some of the DfT's requirements for IEP will be challenging. We believe, however, that they can be delivered using the best of current worldwide practice. For this reason, DfT envisages introducing a small 'pre-series' batch of trains, to test the trains in a customer and operational environment to identify and resolve any problems before full fleet production commences. It is likely that these trains will be deployed on the southern part of the ECML route which, after cross-industry assessment, appears to offer the best potential, including testing with self powered operation and under 25kV electrification.

Required Programme Outputs

2.10 The required outcome of IEP is the provision of a new capability and higher capacity on the key long distance routes, giving higher standards of service, safety, security and dependability to customers and higher carrying capacity for growth across the network in a way which delivers best value and further improves the energy and environmental performance of long distance rail.

2.11 IEP represents an exceptional opportunity for the successful consortium to:

- Participate and invest in a programme of approximately thirty years which will make a major contribution to the achievement of the Secretary of State's objectives for rail;
- Work with industry partners to help meet long term customer requirements through the provision of high quality and innovative services and;
- Be rewarded for its contribution to the success of IEP through its long term income stream;

Timescales

2.12 Indicative dates for the procurement are:

- Return of Expressions of Interest 18 June 2007
- Select Qualified Candidates Summer 2007
- Issue Invitation to Tender Autumn 2007
- Proposals Received Spring 2008
- Best and Final Offers Summer 2008
- Contract Award Winter 2008/9
- Start of pre-series train running 2012
- Start of fleet introduction 2014