

International Transport Forum 2010 Transport and Innovation: Unleashing the Potential

CASE STUDY - UNITED KINGDOM

The following information is based on a response to a survey carried out by the International Transport Forum on innovative policy initiatives within member countries, and countries' efforts to promote innovation.

Briefly describe innovative policy initiatives that your government has succeeded in implementing in the transport sector in recent years. Please take the widest possible definition of innovation, including innovative technologies (e.g. ITS), policies, practices (e.g. new pricing mechanisms), etc.

The UK Government stimulates business innovation in those areas which offer the greatest scope for boosting UK growth and productivity through the Technology Strategy Board. Current key initiatives include:

- (i) Low Carbon Vehicles Innovation Platform - a £140m cross-Government initiative - a partnership between the Department for Transport, Department for Business, Innovation and Skills, Research Councils and Regional Development Agencies - to accelerate the market introduction of low carbon road transport vehicles and maximise the benefit to UK business. This work will be co-ordinated by the new Office for Low Emission Vehicles, which will also be responsible for developing and delivering a £230 million electric vehicle consumer incentive (reducing the price of electric and plug-in hybrid cars by £2000 to £5000) and the £30 million Plugged In Places Infrastructure Framework (establishing a network of publicly accessible electric vehicle charging facilities in 3 to 6 regions around the UK).
- (ii) Research, Development & Demonstration (R, D & D) funding for the aerospace sector aligned to the needs identified in the National Aerospace Technology Strategy (NATS). Key NATS programmes funded through a partnership of the Technology Strategy Board, Regional Development Agencies, Devolved Administrations, and Engineering & Physical Sciences Research Council (EPSRC) include those focused on the airframe and engines. Current scale of funding provided by all partners is worth ~ £65m pa.
- (iii) Intelligent Transport Systems Services (ITSS) Innovation Platform looks to overcome barriers in implementing effective solutions with Intelligent Transport Systems (ITS). The primary aim is to work to overcome issues associated with people travel, and traffic related issues such as traffic network management, congestion, user travel information, safety, crime and infrastructure and vehicle connectivity. Recent initiatives include a £7m call for research that will adapt and develop technology to help us to make smarter personal travel choices.

- (iv) Transport Knowledge Transfer Network to bring together businesses, universities, research, finance and technology organisations, helping industry to access knowledge and information central to innovation growth.

The Department for Transport is committed to promoting transport innovation that help to achieve its policy objectives in the areas of improved safety, reduced congestion, and better environment across all modes of transport.

Rail

The Rail White Paper “Delivering a Sustainable Railway” published in July 2007 set out the key challenges likely to face the railway over the next 30 years. These can be broadly summarised as the “4Cs”:

- Expanding **capacity** to meet increased demand
- Reducing **carbon** emissions (and other environmental impacts)
- Meeting higher **customer** expectations
- Reducing **costs**

The Rail Technical Strategy (RTS) was published alongside, and in support of, the White Paper. It considered how a combination of existing and future technology could help the railway meet the challenges set out in the White Paper. So it effectively set out an agenda for technical innovation in order to deliver a cost-effective, environmentally sustainable railway able to cope with future passenger and freight demand. Both the White Paper and the RTS are available on our website at www.dft.gov.uk.

In support of the RTS, a Rail Industry Research Strategy (RIRS) was published in December 2007 which established a set of strategic priorities for rail research to support the delivery of the rail industry’s long-term vision for the railway. One of these priorities was to evaluate rail research carried out over the last 20 years to understand its impact and identify those characteristics of rail research that represent high value and enable strong uptake within the rail sector. Further information can be found at:

www.trl.co.uk/online_store/reports_publications/trl_reports/cat_traffic_and_transport_planning/report_evaluating_impacts_of_completed_rail_research.htm

More generally, the rail industry has a range of cross-industry groups, notably the Systems Interface Committees (SIC), that meet regularly to review latest thinking on rail technical matters and monitor technical developments. For example, the energy SIC is monitoring developments in battery, flywheel and supercapacitor technology to inform future rolling stock design.

The Department for Transport has successfully carried out a policy of getting local communities more involved in the promotion and development of local and rural railways through the Community Rail Development Strategy. The objective has been to channel some of the positive energy associated with local and rural rail to positive action. This can involve local authorities re-prioritising transport expenditure to local rail or capital investment in facilities such as car parks or at the other extreme it can take the form of local people setting up or maintaining gardens on local stations.

Other aspects of the community rail strategy include seeking to find more cost effective ways to deliver services and linking rail service enhancement to local regeneration initiatives.

Road

The Government is committed to tackling congestion on the road network. The Traffic Management Act 2004 gave local traffic authorities new powers and a duty to keep roads clear and traffic moving.

The UK Government's 2004 White Paper, *The Future of Transport*, emphasised the importance of active and co-ordinated management of the road network. The network management duty established under the Act reinforces this. The new duty took effect from January 2005, and authorities will be able to focus more sharply on tackling the causes of congestion and disruption.

The future of Transport White paper is available at: www.dft.gov.uk/about/strategy/whitepapers/previous/fot/.

What initiative(s) does your country have to promote innovation in the transport sector? Are these initiatives part of a larger effort to promote innovation across the economy? Please provide any additional material you have regarding these initiatives, including web sites, reports, etc.

The Technology Strategy Board (<http://www.innovateuk.org/>) was established in 2007 to play a cross-Government leadership role in delivering a national technology strategy and advising on policies which relate to technology innovation and knowledge transfer. It operates across all important sectors of the UK economy to stimulate business innovation in those areas which offer the greatest scope for boosting UK growth and productivity.

The Technology Strategy Board, working with the Regional Development Agencies and the Research Councils, will jointly invest over £1 billion between 2008/9 and 2010/11, and in doing so, create critical mass and coherence so that UK business has greater clarity and is better able to access the most relevant support available. Furthermore, it also works with Government Departments to ensure policies including public procurement and regulations can be used to best effect to stimulate innovation.

(See Q 1.1 for detailed information on Technology Strategy Board initiatives).

The Department for Transport also funds its own research programme, which includes the development of innovative technologies and traffic management techniques. In addition, a number of working groups have been established to take forward initiatives under the Traffic Management Act and the Traffic Signs Review. In particular, local authority traffic managers (established under the Traffic Management Act) have formed Regional and a National Traffic Managers Forum which encourage cooperation and coordination between authorities as required by the Act.

In September 2008, the Department for Transport announced a new £15 million strategic rail research programme to be managed by the Rail Safety and Standards Board (RSSB), offering a substantial boost to the rail industry's research and development capacity. The aim of the programme is to support longer term research to help the industry achieve the challenging goals set out in the White Paper, such as doubling rail capacity and further reducing the carbon footprint of rail transport in a safe and cost-effective way. Further information on the programme can be found at:

www.rssb.co.uk/research/rail_industry_strategic_research_programme.asp

To inform the strategic research programme and future rail investment, the rail industry recently conducted a technology route mapping exercise to understand what can be delivered with existing or emerging technologies and assessing the gaps to be met by further technological innovation over the next 30 years to deliver the White Paper goals. As part of the process, the industry considered progress being made and the likely technological gaps against the following 8 technical themes: track-train interface; reliability/capacity; control systems; traction and energy; safety/security/health; passenger focus; assets; differentiated rail routes.

Another example is the Transport Innovation Fund (see 1.2) which encourages local authorities to design a package of innovative initiatives aimed at tackling urban congestion.

Another important initiative to promote innovation in transport is: Future Intelligent Transport Systems (FITS) co-funded by the Department for Transport, EPSRC and the Department for Business, Innovation and Skills. This has taken an innovative approach to bringing together multi-disciplinary consortia (including representatives from academia, industry, government) to develop innovative solutions to UK's transport problems. The following three separate projects have emerged from the initiative : Foot-Lite, Ideas in Transit and FREEFLOW.

The aim of the Foot-LITE project is to create a revolutionary driver information system designed to educate and encourage safer and greener driving and longer term behavioural changes.

Ideas in Transit takes the 'bottom up' approach to discovering and promoting innovation in transport. The projects aims to discover, understand and promote current innovations that are 'bottom up', unconventional and/or innovative collaboration amongst users. Two particular work strands of interest for this survey include:

- a. The development of an Innovations Portal (www.ideasintransit.org/about.htm) to capture latest developments in transport user innovations.
- b. A survey to understand the barriers and enablers to innovation

General information about Ideas in transit is available at:
www.ideasintransit.org/wiki/Ideas_in_Transit

FREEFLOW, aims to benefit both transport users and operators by turning data into intelligence for road users specifically, FREEFLOW aims to assist them in knowing what is happening, why it is happening, what will happen next and what action they can take to make things better for them.

The UK has recently launched an academically based Transport Research Centre, jointly funded by the Department for Transport, the Economic and Social Research Council, and the Scottish Government. This five-year programme valued at £7.5million is aimed at stimulating innovation in the development of the evidence base needed to understand the key challenges facing the UK in the next 10 years and beyond. The emphasis will be mainly, but not exclusively, on the socio-economic dimension of transport.

What are the specific objectives of these initiatives? (e.g. Do they focus on certain challenges, such as climate change or safety, or on certain modes? Do they take a wider approach focusing on all of the challenges faced by transport?)

- (i) Low Carbon Vehicles Innovation Platform - to accelerate the market introduction of low carbon road transport vehicles and maximise the benefit to UK business.
- (ii) Research, Development & Demonstration funding for the aerospace sector - to develop critical aerospace technologies required to ensure UK competitiveness in the global aerospace market, and meet the ambitious environmental performance targets for aviation (ACARE).
- (iii) Intelligent Transport Systems Services (ITSS) Innovation Platform - to overcome barriers in implementing effective solutions with Intelligent Transport Systems.
- (iv) Transport Knowledge Transfer Network - to help industry to access knowledge and information central to innovation growth.
- (v) Transport Innovation Fund - to tackle congestion.
- (vi) The Department for Transport's research programme is wide-ranging and seeks to tackle climate change, safety, environment, accessibility etc issues across the modes. The objectives of the Department's research programme are set out in "*OVERVIEW OF EVIDENCE NEEDS & PLANNED RESEARCH (09/10)*" which is available at: www.dft.gov.uk/pgr/scienceresearch/evidenceplannedresearch0910.pdf.
- (vii) Transport Research Centre - to make better use of developments and expertise in the socio-economic science base which has not hitherto necessarily been focused on transport issues.

Please describe the funding arrangements associated with your efforts to promote innovation in transport:

- (i) As mentioned in the response to question 2, a new strategic rail research programme is being funded by Department for Transport.
- (ii) The Technology Strategy Board receives its funding from central government and funds projects under the initiatives highlighted in response to Q1.1 through competitive calls for research grants.
- (iii) The Office for Low Emission Vehicles is developing, and will be responsible for the delivery of a £230 million electric vehicle consumer incentive (reducing the price of electric and plug-in hybrid cars by £2000 to £5000) and the £30 million Plugged In Places Infrastructure Framework (establishing a network of publicly accessible electric vehicle charging facilities in 3 to 6 regions around the UK). In doing so, OLEV will be promoting a faster uptake of innovative technologies.
- (iv) The UK Government also provides Research & Development tax credits, which currently provide between 130% to 175% relief on research and development investment in Britain.
- (v) Up to £200 million per year was earmarked to support local authorities to address congestion through implementing transport packages including charging schemes. However, as noted in the answer to 1.2, no local authorities have yet accessed the Transport Innovation Fund.

What is the lead ministry or agency for your efforts to promote innovation in transport?

The Department for Transport and the Department for Business, Innovation and Skills. For ultra-low carbon vehicle technologies, the new Office for Low Emission Vehicles (OLEV) will be the lead agency; based in the Department for Transport, OLEV will represent the full range of UK Government departmental interests in this agenda.

What other public entities are involved and what are their roles?

Research Councils, Technology Strategy Board, Energy Technologies Institute, Regional Development Agencies and Devolved Administrations.

The Technical Strategy Advisory Group (TSAG), which comprises senior rail stakeholders and is chaired by the Department for Transport, has been set up to develop and implement the Rail Technical Strategy. It has overseen the route mapping work and the development of the strategic research programme. Further information on its role can be found at: www.futurerailway.org/Pages/home.aspx.

What other partners are involved (e.g. the private sector, universities, states/provinces, etc.)?

Local authorities have responsibility for traffic and network management

In the field of ultra-low carbon vehicles, partners include local authorities, electricity distributor and supply companies, private businesses and universities.

What international partnerships are involved in this?

An international fund for the Technology Strategy Board funded Knowledge Transfer Networks has been established and the first round of funding will be completed in the next 6 months.

The UK has rejoined the International Energy Agency's Implementing Agreement on Hybrid and Electric Vehicles in order to share information about ultra-low carbon vehicle introduction.

The UK Department for Transport collaborates in international research projects, on an ad hoc basis, where this represents the best and most cost effective way of delivering its research objectives.

The UK Department for Transport is a partner of ERA-NET TRANSPORT, a FP7-funded initiative to stimulate greater cooperation and collaboration in transport policy relevant research.

The UK generally shares best practice with international partners through the EU and OECD.

Please provide a summary of any results or outcomes already achieved as a result of your efforts to promote innovation in transport?

The Intercity Express programme will deliver a new generation of high speed diesel, electric and bi-mode trains. The new trains will be light, energy efficient, reliable as well as delivering improved journey times and greater capacity than current designs. The bi-mode trains will have a diesel generator car at one end of the train and a transformer/pantograph car at the other. This will enable the train to use electricity where it is available whilst retaining the capability to run off the wires using its diesel engine.

The UK Government recently announced a major programme to electrify the Great Western Main Line, a strategic rail route between London, the West of England and Wales. The infrastructure owner, Network Rail, intends to use a factory-style approach to installing electrification to minimise costs and reduce disruption to the working railway building on industry best practice.

The Department for Transport and the industry have also embarked on a modernisation programme to allow passengers to buy rail tickets where and when they want. Further benefits will include better data on passenger flows, freeing up staff to assist passengers and cutting transaction costs.

The Department for Transport initiated the Urban Traffic Management and Control (UTMC) programme in 1997 to help urban local authorities in the development of a more open approach to Intelligent Transport Systems (ITS) in urban areas. It is now the preferred ITS platform for UK towns and cities and there are many examples of successful UTMC schemes carried out by a wide range of local authorities. More information is available from www.utmc.uk.com.

Under the Traffic Management Act 2004 (mentioned in paragraph 1.1 above):

Parking:

The parking provisions in Part 6 of the Traffic Management Act were brought into force on 31 March 2008. They seem to be working well.

The Procedure Regulations for Traffic Regulation Orders were amended on 1 June 2009 to make the Government's intention clear.

The provisions on bus lanes and certain moving traffic matters in Part 6 have not yet been brought into force. The only power currently not available under other legislation is the power of local authorities outside London to enforce certain moving traffic matters.

A record breaking 48 local authorities took on the power to enforce parking in 2008/09 and 280 English local authorities are now responsible for enforcing as well as making their parking policies. 85% of the English population lives in these authorities. The authorities are shown on a map on the DfT website:

www.dft.gov.uk/pgr/roads/tpm/tmaportal/tmafeatures/tmapart6/secparkingfactsheets/localauthorities.

Streetworks:

- Notices, etc Regulations came into force in April 2008
- Fixed Penalty Notices (FPNs) came into force in May 2008
- Permit Regulations came into force in April 2008

Section 74 (overrun charges) Regulations came into force on 6th April 2009.

Training and Accreditation Regulations were consulted on in 2008 and are due to be laid later this year. Other work is focusing on working with other bodies to raise quality of training and ensure qualified persons are also competent.

Consultations on revisions of the Safety Code of Practice (CoP) and the Specification for the Reinstatement of Openings in the Highways CoP are due to take place in next few months. Safety CoP will be statutory for works for road purposes by highway authorities.

There will also be a consultation on draft Inspections Regulations this summer and it is intended to lay the Regulations next year.

Work on Records of Underground Assets is continuing with the expectation that there will be a consultation in 2010. HAUC(UK) is also looking for best practice that can be shared and implemented in advance of Regulations. There will be tiered introduction of new standards to allow sensible implementation. Regulations will apply to highway authorities, as well as utility companies. It will follow broad recommendations of NUAG.

Other works streams (Diversionary Works, FPNs for Highways Act offences - skips and scaffolding, and full and half width reinstatements) will follow later.

Please describe the performance indicators or measurements that you use to evaluate the outcomes of your efforts to promote innovation. Please attach more detailed documents on this issue, if they are available.

In the area of traffic management, local authorities are free to adopt performance indicators as they deem appropriate if they so wish.

What are the principal means by which your agency keeps track of new innovations and trends in transport?

- (i) Knowledge Transfer Networks (KTNs) are managed by the Technology Strategy Board and are designed to stimulate innovation in the UK economy through higher levels of research and development and knowledge transfer. The overall aim of KTNs is to improve and speed up the process of knowledge exchange between businesses and between businesses and academic institutions. There are currently 25 KTNs with a membership of over 50,000.
- (ii) Close working with practitioners in local authorities and transport consultancies allows the Department for Transport to keep up to date with emerging requirements and new innovations in the traffic management sector.