



UKERC ENERGY RESEARCH LANDSCAPE: TRANSPORT

[Section 1](#): An overview which includes a broad characterisation of research activity in the sector and the key research challenges

[Section 2](#): An assessment of UK capabilities in relation to wider international activities, in the context of market potential

[Section 3](#): major funding streams and providers of *basic research* along with a brief commentary

[Section 4](#): major funding streams and providers of *applied research* along with a brief commentary

[Section 5](#): major funding streams for *demonstration activity* along with major projects and a brief commentary

[Section 6](#): Research infrastructure and other major research assets (e.g. databases, models)

[Section 7](#): Research networks, mainly in the UK, but also European networks not covered by the EU Framework Research and Technology Development (RTD) Programmes.

[Section 8](#): UK participation in energy-related EU Framework Research and Technology Development (RTD) Programmes.

[Section 9](#): UK participation in wider international initiatives, including those supported by the International Energy Agency

Prepared by Dr Mark Beecroft and Dr Jillian Anable, University of Aberdeen

Last Update: 13th April 2012

This document is provided free of charge. While the UKERC will continue to make every effort to ensure accuracy of information, it cannot be held responsible for any errors; any risks associated with the use of the data remain entirely the responsibility of those downloading it. Users are reminded that they should acknowledge UKERC in all cases where the information is used.

UKERC retains copyright of all documents; your use of this information should conform to UK Copyright "Fair Dealing" (http://www.copyrightservice.co.uk/copyright/p27_work_of_others)

1. Overview

[Return to Top](#)

Characterisation of the field

The scope of the energy-related transport research topic is broad. It covers three broad areas: science and engineering activity focused on the development of cleaner and more efficient vehicles, fuels and other forms of transport; transport systems and their relationship to wider issues about spatial planning and economic development; and questions of individual travel behaviour and the factors that influence it. Transport demand can be split into passenger and freight as well as surface, aviation and maritime.

Work on alternative powertrain technologies including plug-in electric vehicles, hydrogen and fuel cells could have profound implications for patterns of energy use in the transport sector. Recent policy developments have opened up a range of research opportunities in these areas, particularly in relation to electric vehicles and other aspects of energy efficient vehicle design. These are evolving areas of strength in the UK. [Note: Hydrogen and fuel cell research is the subject of separate landscape documents, as is energy storage and bio-energy. Transport modelling is also covered elsewhere although all of these aspects are covered to some degree in this document.]

Whilst there is a strong and internationally respected UK research community in many areas of transport research (e.g. transport engineering, telematics and vehicle locationing, spatial planning, travel behaviour) there is little independent focus on transport and energy other than in the areas of automotive design and alternative fuels. Traditional transport studies addresses a broad range of challenges including safety, performance, system integration, air quality etc. and more recently increased interdisciplinary effort has been focused on travel behaviour and demand reduction. In this community, however, it can be difficult to separate energy related-transport research from

transport research more broadly. Traditionally the transport studies and energy research communities have not been well integrated.

However, the policy imperative in relation to climate change and energy security and recent funding initiatives at both the basic and development ends of the spectrum have channelled engineering, planning and social science expertise towards transformative solutions to the energy challenges. Overall, increases in funding through the RCUK Energy Programme, Digital Economy Programme and the Technology Strategy Board suggests a substantial ramping up and that the landscape of transport research is changing to be more integrated and focused on the environmental and/or energy consequences of transport technologies and activities. The development of the Energy Technologies Institute and Technology Strategy Board have provided a route to trials and demonstrations of alternatively fuelled vehicles and digital solutions that did not exist in the first edition of this landscape in 2007. There has also been increasing focus on demand side management in recent targeted programmes in the RCUK Energy Programme. As a result, behavioural and societal focused researchers in the UK are increasingly engaging in energy research opportunities with a focus on linking technology developments with demand side management in the transport sector. However, there is still some way to go in order to reflect the fact that this sector is responsible for ca.30% of energy demand.

For basic and applied strategic research, the range of disciplinary inputs is wide. Science and engineering aspects include mechanical, combustion and chemical engineering. To some extent, automotive and aeronautical engineering have emerged as disciplines in their own right. Transport systems have been addressed by both civil engineers and planners. A wide range of disciplines from the social sciences and

economics can provide insight into travel behaviour patterns. Business schools have addressed several transport-related topics.

Research Challenges

The scale of the challenge to reduce carbon emissions and energy use from the transport sector almost certainly involves changing patterns of travel behaviour as well as improving the performance of transport technologies. In this sense, the cultural and political challenges facing this sector are arguably as large if not larger than the technological and economic ones. Yet, both the transport policy and research community has focused and delivered more in relation to technology development and performance. Issues of social acceptance, societal transitions and human-technology interactions have been less developed. There is now a growing recognition of the need for inter-disciplinary work and a whole-systems approach to the transport and energy system but overall, there still tends to be a 'technology versus behaviour' divide in policy and research in relation to transport and energy and this gulf remains one of the greatest research challenges in this area.

Nevertheless, the research challenges in transport also extend to the supply side across vehicles and infrastructure. These challenges were articulated by the New Automotive Innovation and Growth Team (NAIGT), an initiative of the former Department for Business, Enterprise and Regulatory Reform, who produced a technology road map in 2009, the implementation of which is now overseen by the Automotive Council. It identifies a strong and innovative industry but highlights a lack of consistent policy framework or industrial strategy and a shortage of skills. The key research challenges can be seen as: the development of cleaner and more efficient vehicles and other forms of transport; the development of alternative transport fuels such as gas-to-liquids, bio-fuels and, in the longer-term, hydrogen; the development of transport systems which will lead to lower energy use

and environmental impacts. Predicting the progress of these technologies and their cost are key research challenges.

On the demand side, predicting people's responses to changing prices, levels of service, technologies and opportunities is crucial, particularly given the changing economic and demographic contexts. This includes, for example, the uptake of electric vehicles, switches from one mode of transport to another (e.g. car to public transport or reducing the demand for air travel); understanding what determines people's transport habits and choices and means of influencing these. In addition, research needs to concentrate on the development of a long term strategy to influence land use and land use patterns with the view to reducing the demand for personal, business and freight transport. Finally, travel will be a key component in carbon auditing at the personal level as a basis for carbon benchmarking, pricing, (cap-and-) trading, monitoring of strategies, etc.

On both the supply and demand sides, freight transport on all modes but especially the efficiency of heavy goods vehicles is a notable gap in the research landscape. The TSB has recently identified this and will soon fund the Low carbon truck demonstration trial. But there is still a dearth of funding in low carbon vehicles and logistics for goods traffic. Aviation and shipping are also particularly important challenges and have been the focus of recent targeted research efforts by the EPSRC but there appears to be little integration in these latter areas between publicly and privately funded R&D efforts and these areas have not yet been the focus of TSB programmes.

Overall, research in this area has been largely incremental and not transformative with a recent concentration on accelerated deployment rather than speculative research. Where research has been conducted on performance new technologies, including digital technology, the scale of trials has been relatively small.

2. Capabilities Assessment

[Return to Top](#)

In spite of not having a major home-based automotive industry, the UK remains strong in terms of engine design and development and technical consultancy. The UK has recently become the location for European production of certain car models and has nurtured low carbon vehicle innovation as an area of strength that is oriented around a series of key government backed organisations, research institutions and companies such as Cenex, TSB, Low CVP, University spin-offs (WMG, Nexeon). More than a handful of universities may have a leading edge in relevant technology such as advanced lithium ion batteries or lightweight materials and this rekindling of the automotive industry has been supported by collaborations between government agencies, academic institutions and the private sector. However, whilst seven large global manufacturers have significant productive capacity in the UK, most conduct R&D activities in their home markets. Ford and Jaguar Land Rover are exceptions to this and spend around 80% of UKs total annual expenditure on automotive R&D (see NAIGT roadmap). See also other research landscape documents in the areas of energy storage, hydrogen and fuel cells.

Internationally, the UK is also perceived to be very strong in the design of fiscal incentives to encourage the uptake of clean fuels and technologies and influencing the pattern of travel demand. However, this has limited application globally and is very much supported though publicly funded research programmes.

The UK has a long and robust tradition in spatial planning research and is well represented in EU and international research arenas on these topics. In the past decade, transport planning research has become more multidisciplinary by branching out from its civil engineering routes to incorporate environmental sustainability appraisal and the political and behavioural sciences.

With respect to understanding travel behaviour, the field has been slow to move away from economics to incorporate other behavioural sciences. This is changing rapidly and consequently it is difficult to gauge current activity in the UK as it is taking place in academic departments as diverse as built environment, sociology, economics, sustainable development and psychology. This research is almost exclusively publicly funded, with significant involvement in EU projects.

With respect to freight transport, a few core academic departments appear to represent research in the area of logistics and supply. Whilst taking place in fewer departments, the depth and breadth of the coverage is high and has some international recognition. Analysis of shipping, both in terms of freight and the technological and environmental implications of this form of travel, is, however, relatively scarce. Aeronautical engineering and Aviation is relatively well represented, though possibly not in proportion to its importance in the area of transport and energy.

Overall, the diversity of R&D strengths in UK transport research means there is not yet a critical mass in focused research on transport and energy other than in small niches related to low carbon vehicles. However, the trend towards collaborative projects is making the UK more globally competitive and starting to make some of the links between transport and energy systems and demand and supply-side solutions. There is strong political demand for research in this area due to the strong links between transport and economic growth and EU and UK funding bodies have responded to this demand. However, the applied and policy driven nature of this area can be a challenge to creativity and basic research with longer timescales.

Table 2.1: Capability Assessment

UK Capability	Area	Market potential
High	<ul style="list-style-type: none"> • Engine design and development • Aspects of vehicle design not related to engines (including batteries, materials) • Technical consultancy • Design of fiscal incentives • Travel behaviour research 	Global potential Global potential Global potential UK application UK application
Medium	<ul style="list-style-type: none"> • Transport systems engineering • Railway engineering • Aeronautical engineering • Transport planning • Study of aviation planning and demand • Logistics and freight 	Global potential Global potential Global potential UK application UK application
Low	<ul style="list-style-type: none"> • Vehicle assembly • Shipping 	Global potential Global potential

3. Basic and strategic research

[Return to Top](#)

University-based transport research falls into several different clusters ranging from vehicle engineering through to social studies of transport behaviour. In each of the clusters, energy use is not normally the specific focus of research. Research tends to focus more broadly on transport/vehicle issues including safety and performance. It is often necessary to go deep within Centre/departmental structures to identify specific pieces of energy-relevant work. Nevertheless, responses to recent RCUK calls in the area of transport and energy have generated responses from a wide variety of disciplines (within and outside the traditional transport studies areas) and has demonstrated the responsiveness of the transport community and the willingness for interdisciplinary working. Nevertheless, the research is fragmented and there is no 'transport and energy' community. There are also no RCUK research fellows or champions for this area.

A number of universities, many Midlands-based, have strengths in relation to various aspects of vehicle design and energy use – for example engine, powertrain, emissions performance, combustion, alternative fuels. A number also have strengths in fuel cell technology and battery technology which are covered separately within the Research Landscape document. Where activities are conducted within a traditional departmental structure, there are often distinct "automotive engineering" departments reflecting close links with industry and historic training needs. In general, however, the activities in this cluster fall within the field of mechanical engineering. Universities generally enjoy excellent links with industry and a number could also appear in the "applied research" section under this topic (although have been left out of this section to avoid repetition). Research into hybrid engine technology is currently one of the most persistent energy-relevant topics.

Transport planning is another broad theme, with many transport studies centres working out of civil engineering or built environment departments or traditions. A couple of Centres are associated with environmental sciences at their host universities, including the notably large Institute for Transport Studies at Leeds and the Transport Studies Unit situated in the Oxford University Centre for the Environment. These tend to look at transport behaviour as well as the planning issues covered by Centres linked more to civil engineering. Finally, a couple of Centres are associated with business schools, including the small but influential Centre for Automotive Industry Research at Cardiff. These tend to cover an eclectic range of topics from transport behaviour and road pricing through to manufacturing issues.

Research Council funding has, until recently, come through the Transport Operations and Management sub-theme (part of the EPSRC Process Environmental Sustainability Programme) which comprised 3.4% of EPSRC's total investment in Engineering related research in 2011. In the recent portfolio review (2012), this area has been earmarked for a reduction in funding. However, around half of the funding has hitherto come from the cross-council Energy Programme which has identified transport and energy efficiency, as well as specific technological areas such as energy storage (e.g. Supergen energy storage consortium), electric motors and drives and resource efficiency as areas for an increase in funding with a view to promoting a systems approach to transport and energy. The Energy Programme has managed dedicated calls in the areas of shipping, aviation, walking and cycling and travel behaviour, habits and practices and end use energy demand in addition to funding and Industrial Doctorate Training Centre in Transport and Environment at Southampton University and one for Technologies for a Low Carbon Future at the University of Leeds. The UK Energy Research Centre also includes research on transport and

energy efficiency within its Energy Demand theme. The Digital Economy Programme also involves working across energy and transport and has funded three Digital Economy Research Hubs, one of which is undertaking research on transport and carbon specifically

(Nottingham University) and another has a dedicated transport theme (University of Aberdeen) as well as specific calls such as Transforming Energy Demand through Digital Innovation.

Table 3.1: Research Funding

Funding Stream	Funding Agency	Description	Committed Funds	Period	Representative Annual Spend
Energy Programme	RCUK (Managed by EPSRC)	Industrial Doctorate Training Centre: Transport and Environment – University of Southampton	£5m		
Transport Operations and Management	EPSRC	<p>This theme covers engineering solutions for monitoring, controlling and improving traffic flow across all modes (rail, road, water etc.). Includes traffic scheduling, control and modelling; telematics and vehicle locationing; transport safety and reducing the undesirable effects of transport on the environment (emissions, noise and vibration). A multi-disciplinary research area incorporating cross-cutting topics such as infrastructure and land management; socio-economic aspects are also important.</p> <p>This investment is divided across seven themes: Energy; Engineering; Digital Economy; Living with environmental change; Global uncertainties; Manufacturing the future; and ICT. Energy research accounts for the largest proportion of investment at 50.2%. Grants related to the Energy and Living with Environmental change themes include: Green logistics £1.2m; Walking and cycling</p>	113 grants totalling £37 million investment in Transport Operations and Management research area (total value £95m) However – not all grants are directly related to energy research	Grants listed (not all current) as of 1/4/2012	

		(with Sustrans) ~ £4m (in 3 separate grants); Low carbon shipping – a systems approach £2.1m (in 6 separate grants); FUTURENET – Future Resilient Transport Networks – adaptation and resilience to a changing climate £1.5m (in 6 separate grants); Aviation £1.6m (in 4 separate grants) and Travel Behaviour (£3.2m) in five separate grants.			
Environment and Energy – Transport	ESRC	ESRC funds transport research within an Environment and Energy research topic area. These are various, with some overlap to the Transportation Operation and Management projects and are difficult to quantify.	various		
Digital Economies Research programme	RCUK	<p>Research Councils UK RCUK is coordinating the delivery of multidisciplinary research in the following six priority areas:</p> <ul style="list-style-type: none"> • Digital economy (includes transport & energy investment) • Energy (includes transport & energy investment) • Global Food Security • Global uncertainties; security for all in a changing world • Living with environmental change (LWEC) (includes transport & energy investment) • Lifelong health and wellbeing • Three Digital Economy Research Hubs have been created, one of which is undertaking research in the field of transport and energy: Horizon Hub (University of Nottingham) – carbon reduction by using digital solutions to 	Three Digital Economy Research Hubs £12m each, but proportion allocated to transport and energy research not specified.	Digital Economy Research Hubs 2009-2014	

		<p>promote car sharing project. And another (dot.rural – University of Aberdeen, has a dedicated transport theme looking at passenger and logistics solutions)</p> <ul style="list-style-type: none"> Some transport projects were also funded through the Transforming Energy Demand Through Digital Innovation, Transport Demand Reduction call. 			
UK Energy Research Centre	EPSRC/NERC/ESRC	<p>UKERC research investment is organised under five themes: Energy Demand; Energy Supply; Energy & Environment; Energy Systems; and Technology & Policy Assessment. Transport investment is made under the Energy Demand theme. Around 40% of UKERC's total research resource is allocated through a Research Fund. The Research Fund supports 16 projects, including one large project with a transport focus - A Global Framework for Quantifying the Ecosystem Service Impacts of Oil and Biofuel Production</p>	<p>Around £11m of which £4.5m is allocated through a Research Fund of which £610,000 is allocated to a biofuels project</p>	<p>Phase 2 of Research Fund 2009-2014</p>	

Table 3.2: Key Research Providers in UK Universities

Name	Description	Sub-topics covered	No of staff	Field
Centre for Transport Research , University of Aberdeen	The Centre's research agenda is focused on three broad themes 'Transport, Energy and Environment', 'Transport and Society' and 'Transport and the Digital Economy'.	Surface Travel Behaviour/Planning <ul style="list-style-type: none"> • Consumers and Transport: with a focus on lifestyle choices and choices for travel • Governance and Delivery: with a focus on shared transport and sustainable use of space • Transport Futures: with a focus on energy, technology and the spatial environment 	4 academic staff, 4 researchers, 7 PhD students	Geography
Bio-Energy Research Group , School of Engineering and Applied Science, Aston University	One of the largest university based research groups in thermal biomass conversion in the world, providing a focus for a range of inter-related activities in biomass conversion and environmental studies related to global warming.	Automotive Engineering & Technology <ul style="list-style-type: none"> • Thermal processing: Gasification for production of gas for use as fuel, for production of hydrogen, for synthesis of transport fuels & chemicals. • Biological processing: Fermentation to alcohol, or bio-ethanol, that can be used for transport fuels or power. • Mechanical processing: Production of vegetable oils that can be upgraded to bio-diesel & extractives. 	10 staff 13 research students	Engineering and Applied Science/ Chemical Engineering
Powertrain & Vehicle Research Centre , Department of Mechanical Engineering, University of	The Powertrain & Vehicle Research Centre focuses on powertrain systems, engine, transmission and vehicle related research.	Automotive Engineering & Technology <ul style="list-style-type: none"> • Powertrain Research • Predictive and Simulation Capabilities 	4 academic staff, 9 researchers, 11 PhD students	Mechanical Engineering

Name	Description	Sub-topics covered	No of staff	Field
Bath		<ul style="list-style-type: none"> • Calibration Methodologies • Vehicle Research (Chassis Dynamometer based) • Thermal Systems Research 		
Birmingham Centre for Railway Research and Education , University of Birmingham	<p>Multidisciplinary research and education unit, encompassing the fields of Electronic, Electrical, Mechanical, Civil and Systems Engineering. There is also input from other disciplines, such as Ergonomics, Geography, Geophysics and Mathematics.</p> <p>The centre has numerous industrial and academic partners.</p>	<p>Rail</p> <ul style="list-style-type: none"> • Effects of climate change on UK rail network • Impact of temperature on rail infrastructure • Aerodynamics • Asset management • Condition monitoring • Environment • Geotechnical engineering • Materials and metallurgy • Modelling • Network capacity • Power and traction • Risk and safety • Signalling and train control • Systems engineering 	18 Faculty; 14 Researchers; 22 PhD students	General Engineering
Vehicle Technology Research Centre , University of Birmingham	<p>The Future Power Systems Group researches new combustion and energy conversion technologies, alternative fuels & hydrogen as means to create clean, efficient & sustainable power sources for propulsion & stationary use. It is particularly known for its development of the engine-based fuel reforming technology.</p>	<p>Automotive Engineering & Technology</p> <ul style="list-style-type: none"> • On-board Hydrogen Generation by Exhaust Gas Fuel Reforming • Homogeneous Charge Compression Ignition • Alternative fuels: biodiesel, ethanol, biogas, natural gas, hydrogen • Analysis of Emissions & Particulates • Modelling 	6 Faculty, 5 researchers, 38 affiliated PhD students	Mechanical Engineering?

Name	Description	Sub-topics covered	No of staff	Field
		<ul style="list-style-type: none"> • Enhanced Condensation Heat Transfer • Trans-sonic Flows in Steam Turbines. 		
Bolton Automotive and Aerospace Research Group , University of Bolton	BAARG is a research centre in the field of Structural Crashworthiness, Impact Biomechanics, safety and Accident Investigation. The centre is internationally distinguished for its contributions to the understanding of crashworthiness and general safety.	Surface Travel Behaviour/Planning <ul style="list-style-type: none"> • Passenger & Commercial Vehicles • Railway Vehicles • Aircraft • Structural Materials • Accident Investigation • Impact Biomechanics 	9 staff	Mechanical, Engineering
Automotive Research Centre , School of Engineering, Design and Technology, University of Bradford	Automotive Engineering research including Engines, Powertrain, Quality, Design, Modelling, Simulation, and Manufacturing	Automotive Engineering & Technology <ul style="list-style-type: none"> • Hybrid vehicle technology • vehicle mechatronic systems 	Not stated	Mechanical Engineering
Centre for Automotive Management , Business School, University of Buckingham .	Provides survey, research, consultancy, education and training tailored to the needs of the automotive industry and more specifically to individual companies as well as stimulating debate and interest in emerging automotive industry issues via its series of Automotive Forums.	Automotive Engineering & Technology <ul style="list-style-type: none"> • Total Cost of Fleet Operation Management • Private Car Finance • Used Vehicle Market Analysis • Developing the Green Fleet • Duty of Care and Fleet Management 	Not stated	Business and Management Studies
Cambridge University Engineering Department , University of Cambridge	The research spans from fundamental investigations of turbulent flows, to a wide range of applications including aircraft, internal combustion engines and	Automotive Engineering & Technology <ul style="list-style-type: none"> • Turbomachinery, energy and fluid mechanics • Electrical Engineering 		Mechanical Engineering; Electrical and Electronic Engineering

Name	Description	Sub-topics covered	No of staff	Field
Institute for Aviation & The Environment , University of Cambridge	environmental fluid dynamics. The Institute incorporates latest scientific research, technological developments & economic thinking to address the needs of the aviation & aerospace industries regarding the environment.	Aviation <ul style="list-style-type: none"> • Global impact of aviation emissions on atmospheric composition & climate. • Modelling of aircraft emissions from plume to local & regional scale • Impact of aircraft activities on local air quality. • Modelling demand for air travel & estimating impact on socio-economic development. 	10 Faculty; 3 researchers	Chemistry
Cambridge Vehicle Dynamics Consortium , University of Cambridge	Collaboration between a group of manufacturers from the heavy truck industry and engineers from Cambridge University who have joined forces to develop better heavy goods vehicles. The Consortium includes companies from various sectors of the industry concerned with vehicle dynamics and suspension design.	Automotive Engineering & Technology <ul style="list-style-type: none"> • Active steering of long combination vehicles • Asphalt micromechanics • Energy Efficiency of Vehicles • Investigation of ABS strategies for Heavy Vehicles • Load measuring mat and weight in motion • Vehicle dynamics and suspension design • Vehicle-road interaction • Vulnerable road users 	Not stated	Mechanical Engineering
The Martin Centre for Architectural and Urban Studies , Department of Architecture, University of Cambridge	The Martin Centre is the leading architectural research unit in Britain. Research typically crosses traditional research boundaries: transportation and buildings, history and philosophy of architecture, digital media design and	Surface Travel Behaviour/Planning <ul style="list-style-type: none"> • Transport planning • Urban Planning • Design of transport systems and networks • Land use planning 		Architecture

Name	Description	Sub-topics covered	No of staff	Field
	communication, risk assessment and mitigation in the built environment, and territorial conflict in divided cities.			
Transportation Research Group , University of Cambridge	Cross-disciplinary group researches the dynamics of heavy goods vehicles & their road-damaging characteristics.	Freight <ul style="list-style-type: none"> • Heavy vehicle dynamics • Safety & suspension design • Weigh-in-motion • Vehicle-road interaction • Failure mechanisms of asphalt pavements & paving materials. 	2 staff; 7 PhD students	General Engineering
Centre for Automotive Industry Research , Cardiff University	CAIR aims to remain one of the leading academic centre in the EU dedicated to the study of the economic & strategic aspects of the world motor industry. CAIR's principal strength is its broad overview of the worldwide automotive sector. Its research covers many different areas, from materials supply, manufacturing and retail to wider policy issues affecting the automotive industry	Automotive Engineering & Technology <ul style="list-style-type: none"> • Towards a sustainable car industry • Alternative Personal Transport • Alternative fuels and powertrain • Environmental ratings for cars • End of Life Vehicle issues • Product durability and the long life car • Product stewardship • Corporate social responsibility in the automotive industry 	4 core staff + 2 named associates	Business School (Mechanical, Aeronautical and Manufacturing Engineering)
Logistics Systems Dynamics Group , Cardiff University	LSDG aims to develop innovative hard and soft systems tools, methods and techniques as applied to novel logistics applications. The target is to enable the "seamless supply chain" in which all players think & act as one so as to satisfy the end customer in terms of service, quality, total lead-time,	Freight <ul style="list-style-type: none"> • Logistics systems dynamics problem solving. • Organisational, attitudinal, financial and technological factors in business process change. • Generic modelling of business processes 	8 academic staff, 8 researchers	Applied Mathematics; Business and Management Studies

Name	Description	Sub-topics covered	No of staff	Field
	total cost and health, safety and the environment.	<ul style="list-style-type: none"> • Green logistics. 		
Transport & Shipping Research Group , Cardiff University	<p>Multi-disciplinary unit consisting of well-established academics experienced in the fields of shipping, transport & logistics, aiming to aims to improve policy decision making in these areas.</p> <p>Funded by World Bank/IMO</p>	<p>Shipping</p> <ul style="list-style-type: none"> • Transport operations • Shipping economics • Modelling & simulation of supply chains • Transport networks • Maritime law 		Business and Management Studies
Aeronautics & Air-Transport Group , Energy and Transport Centre, City University London	<p>The AAT group aims to develop new technologies and operational practice for the air transport industry (both manufacturers and operators) towards the achievement of a secure, affordable and environmentally sustainable air transportation system; to exploit aerospace technologies in the renewable energy industry.</p>	<p>Aviation</p> <ul style="list-style-type: none"> • Viscous Flows and Flow Control • Fixed and Rotary Wing Aeronautical Design • Structural Dynamics and Aeroelasticity • Air Transport, Reliability and Safety • Non-Aeronautical Applications 	Not stated	General Engineering
Energy and Transport Centre , City University London	<p>The Energy and Transport (ET) research centre comprises those areas of research focussed upon improving the efficiency of transportation, compression and energy-generation processes.</p>	<p>Automotive Engineering & Technology</p> <ul style="list-style-type: none"> • Energy Systems & Engines • Aeronautics & Air Transport • Positive Displacement Compressors • Computational Fluid Dynamics 	20 academic staff, 7 researchers, 31 PhD students	General Engineering; Mathematics
Energy Systems & Engines Group , Energy and Transport Centre, City University London	<p>The Energy and Transport research centre comprises those areas of research focussed upon improving the efficiency of transportation, compression and energy-generation</p>	<p>Automotive Engineering & Technology</p> <ul style="list-style-type: none"> • Internal Combustion Engines • Energy Systems and Conversion 	not stated	General Engineering

Name	Description	Sub-topics covered	No of staff	Field
	processes.	<ul style="list-style-type: none"> • PEM Fuel Cells • Energy Generation and Combustion Research • Fundamentals of combustion 		
International Centre for Shipping Trade and Finance , Cass Business School, City University London	A global hub for the inter-relationships between shipping, trade, and finance by teaching, researching and discussion in class with leading international academics and practitioners from the City of London and overseas	Shipping <ul style="list-style-type: none"> • Shipping Finance, • Risk Management, • Energy, • Logistics. • Modelling and Forecasting. 	10 Faculty	Business
Automotive Engineering Applied Research Group Coventry University	Automotive related research in engineering and computing. Funded by ESPRC, DTI and major automotive companies and their suppliers.	Automotive Engineering & Technology <ul style="list-style-type: none"> • engine flow/combustion • exhaust catalysts/emissions • cooling systems • heat transfer • vehicle dynamics 	9 affiliated academic staff, 2 research staff	General Engineering
Cranfield University Aerospace	Cranfield University Aerospace brings together the University's aerospace capabilities from all its five Schools into areas of strategic importance for its clients, within the aerospace and aviation markets.	Aviation <ul style="list-style-type: none"> • Advanced computational methods and simulations • Airborne vehicles and systems • Aviation and the environment • Aviation management and operations • Aviation safety and certification • Manufacturing • Propulsion • Structures and materials 	45 affiliated academic staff, 5 affiliated researchers	Cross-Disciplinary: Computer Science; Mechanical, Aeronautical and Manufacturing Engineering; Environmental Sciences; Metallurgy and Materials
Cranfield Centre for Logistics & Supply Chain Management , Cranfield University	Provides an international focal point for advanced research in the field of logistics, supply chain management and transportation management. Linked to the Supply Chain	Freight <ul style="list-style-type: none"> • Supply chain management • Reverse logistics • Logistics and distribution • Transportation management 	13 Faculty, 6 researchers	Business and Management Studies

Name	Description	Sub-topics covered	No of staff	Field
	Research Centre, which is one of Europe's largest centres dedicated to research into Logistics and Supply Chain Management. It attracts annual funding in excess of £500,000 through research council, government and industrial sources.			
Department of Automotive, Engineering, Cranfield University	Comprised of the Automotive Engineering Group and the Mechatronics Centre, the department specialises in all aspects of the design of road vehicles, the evaluation of new technologies and the improvement of automotive product engineering processes.	Automotive Engineering & Technology <ul style="list-style-type: none"> • Hybrid Electric Vehicle Design, Integration and Testing • Fundamental research in the advancement of current and future automotive green energy technologies 	4 academic staff, 7 researchers,	General Engineering
Centre for Automotive Research, University of Durham	The Centre for Automotive Research brings together relevant expertise from the departments of Engineering, Mathematics & Physics to support the motor industry worldwide.	Automotive Engineering & Technology <ul style="list-style-type: none"> • Hybrid-electric vehicles 	5 academic staff	General Engineering
Sustainable Mobilities Research Group, University of East London	Our aim is to conduct primarily sociological research into forms of sustainable mobility and barriers to sustainable mobilities. In particular we focus on issues of culture, identity, and inequality, and how these issues interact with decisions to use particular transport modes.	Surface Travel Behaviour/Planning	2 academic staff, 1 researcher	Law; Sociology
Transport Research Institute,	Scotland's largest transport research group with expertise	Shipping <ul style="list-style-type: none"> • Maritime transport and logistics 	16 academic staff, 9 research staff,	Town and Country planning

Name	Description	Sub-topics covered	No of staff	Field
Edinburgh Napier University	drawn from civil engineering, economics, business studies, mathematical modelling, sociology and psychology.	<ul style="list-style-type: none"> • port efficiency and competition • shipping costs • logistical systems • Economic feasibility of ferry services Surface Travel Behaviour/Planning <ul style="list-style-type: none"> • Maritime transport and logistics • Mobility management • Social aspects of transport • Sustainable transport • Taxi studies • Transport economics • Transport modelling • Transport psychology 	16 PhD students	
Wales Transport Research Centre , University of Glamorgan	The WTRC is Wales' leading research centre for applied research and consultancy, covering all aspects of air, land and sea transport for both public and private sectors. The Centre operates as an independent academic research centre, whilst maintaining a professional, commercially-focussed approach to its research.	Surface Travel Behaviour/Planning <ul style="list-style-type: none"> • Aviation • Bus and Train Policy and Operations • Road and Rail Investment • Freight, Logistics and Seaports • Traveller Information Needs and Services • Economic and Market Appraisal 	1 academic staff, 2 researchers	Business and Management Studies
Greenwich Maritime Institute , University of Greenwich	The aims of the GMI are: to engage in and facilitate scholarly research; to disseminate and publicise research findings; to act as a forum for exploration of maritime issues; and to serve as a source of expertise for business and government	Shipping <ul style="list-style-type: none"> • Maritime policy • Maritime management • Maritime history 	20 affiliated staff and 10 PhD students	Politics and International Studies
Logistics Research Centre ,	LRC carries out research for	Freight	8 faculty; 2	Business and

Name	Description	Sub-topics covered	No of staff	Field
Heriot Watt University	internally funded and externally funded studies that have provided industry insight into issues such as freight movement, climate change, integrated transport, supply chain efficiency and key performance indicators.	<ul style="list-style-type: none"> • the relationships between logistics / supply chain trends and freight transport • environmental sustainability of logistics operations • low carbon logistics • performance measurement, benchmarking and data collection in logistics • freight transport policy • shipping and port development • retail logistics • effects of IT and e-commerce on logistics • impact of infrastructure development and traffic congestion on logistics 	research.	Management Studies
Railway Research, Institute for Infrastructure and Environment , Heriot-Watt University	The team investigate the main issues for modern rail networks which include the need to cope with more traffic, heavier loads and higher speeds. With a focus on numerical and experimental analysis of rail track under many different simulated conditions.	Rail <ul style="list-style-type: none"> • Track geometry • High speed railways • Rail track settlement 	3 academic staff, 1 researcher	Built Environment
Automotive Engineering Research Group , University of Huddersfield	aims to promote and advance automotive engineering research at a national and international level and to disseminate that excellence in research to the global automotive engineering community.	Automotive Engineering & Technology <ul style="list-style-type: none"> • Biofuel research 	3 academic staff, 2 PhD students	General Engineering
Transport and Logistics Research and Enterprise Unit	The main aims of the Transport and Logistics Research and Enterprise Unit are to provide quality research	Aviation <ul style="list-style-type: none"> • Air transport in the supply chain 	12 staff	Business and Management Studies

Name	Description	Sub-topics covered	No of staff	Field
The University of Huddersfield	facilities and support to further the academic disciplines of transport and logistics and offer opportunities for industry-sponsored research with real world application	<ul style="list-style-type: none"> • Air transport & the environment • Green branding • Supply chain modelling Freight <ul style="list-style-type: none"> • Air transport • Pharmaceutical supply chains • Logistics education • Freight transport and transport economics • Sustainable tourism 		
Centre for Logistics Research , Hull University Business School, University of Hull	The centre conducts research into logistics and supply chain management with a focus upon research into retail and supply chain operations and management in emerging economies such as India, Malaysia, Thailand and China and next generation supply chain issues and challenges.	Freight <ul style="list-style-type: none"> • logistics and communications technologies • modelling and simulation • lean and agile logistics • supply chain security • food and retail logistics • port-centric logistics and regional economic development • sustainable supply chains Shipping <ul style="list-style-type: none"> • Low carbon shipping • Port-centric logistics and regional economic development 	9 staff	Business and Management Studies
Centre for Transport Studies , Department of Civil and Environmental Engineering, Imperial College London	CTS undertakes research across a broad range of transport-related topics. The Centre includes two specialist research groups; the Railway Technology Strategy Centre and the Imperial College Engineering Geomatics Group and has extensive links to other	Surface Travel Behaviour/Planning <ul style="list-style-type: none"> • Travel behaviour and transport modelling • Transport technology and telematics • Transport operations • Transport and environment 	8 academic staff, 28 researchers, 46 PhD students	Civil Engineering

Name	Description	Sub-topics covered	No of staff	Field
	research groups both within Imperial College and elsewhere.	<ul style="list-style-type: none"> • Transport policy and regulation • Railway operations and management • Geomatics • Port operations and logistics • Air transport operations and planning • Freight transport and logistics • Safety 		
Future Railway Research Centre , Department of Mechanical Engineering, Imperial College London	<p>The FRRRC aims: to provide leading edge research to improve the knowledge and technical capabilities of the railway sector; to facilitate the UK's ability to migrate to the most energy-efficient, safe, high-speed, and cost-effective railway network; and to provide a supply of high level technically trained staff for the railway industry world-wide.</p>	<p>Rail</p> <ul style="list-style-type: none"> • Vehicle-Track Interaction • Vehicle Design • Materials Integrity, • Sustainable Energy Systems including: • Hybrid technologies • Optimal control of rail vehicles • Train energy simulator 	1 academic staff, 1 researcher, 5 PhD students	Mechanical Engineering
Mechanical Engineering Department + Electric and Hybrids Vehicles Network and Energy Futures Lab , Imperial College London	<p>The Electric & Hybrid Vehicles Network brings together the extensive specialities of the Departments of Mechanical Engineering, Electrical & Electronic Engineering, Earth Science and Engineering, Chemical Engineering, Materials and Bioengineering as well as the Centre for Transport Studies and the Imperial Centre for Energy Policy and Technology.</p> <p>The Energy Futures Lab also looks at Urban Energy Systems and Clean Fossil Fuels</p>	<p>Automotive Engineering & Technology</p> <ul style="list-style-type: none"> • design, build and development of electric vehicles powered by fuel cells, batteries, supercapacitors and hybrids of these. This activity has included the design of large traction batteries, novel electric vehicle architectures and fuel cell balance of plant in collaboration with industry. • Component based research and detailed powertrain simulation 		Mechanical Engineering

Name	Description	Sub-topics covered	No of staff	Field
		provide the core of the research, with additional strengths in aspects of thermal management, power generation, carbon capture and sequestration, and of course drivetrain-related mechanical issues.		
Port Operations Research and Technology Centre , Imperial College London	A research centre serving the port sector and associated industries on operational, strategic, economic, and technology issues.	Shipping <ul style="list-style-type: none"> • Interfaces between ports, logistics and other transport modes and infrastructures 	8 affiliated staff, 4 PhD students	Civil Engineering
Centre for European, Regional & Transport Economics , University of Kent	The Centre provides a focus for work on the economics of Europe & the European Union, with particular emphasis on continuing work on aspects of transport & the regional development of the EU, especially the role of transport infrastructure. Funded largely by ESRC.	Surface Travel Behaviour/Planning <ul style="list-style-type: none"> • Transport and the Environment • European transport • European integration 	6 affiliated staff	Economics and Econometrics; Town and Country Planning
Centre for Mobilities Research , Lancaster University	Encompasses the analysis of the global, national and local movements of people, objects, capital, information and material things combining together to engender the economic and social patterning of life.	Surface Travel Behaviour/Planning <ul style="list-style-type: none"> • Social networks and future mobilities • Technologies and travel • Migration 	20 faculty; 3 researchers; 8 PhD students	Sociology
Supply Chain Management and Modelling Research Group , Department of Management Science, Lancaster University	Operating in an international supply network creates many challenges for today's organisations. Researchers at LUMS have expertise in many of the topical issues that	Freight <ul style="list-style-type: none"> • Green logistics • Sustainability • Business-to-business services; • Global sourcing including offshoring & backshoring; 	10 academic staff, 11 PhD students	Business and Management Studies

Name	Description	Sub-topics covered	No of staff	Field
	this global arena creates.	<ul style="list-style-type: none"> Risk management 		
Energy Research Institute, University of Leeds	<p>ERI has a wide range of aviation/aerospace research funded by the EPSRC, the EU and corporate sponsors such as Rolls-Royce and Qinetiq. Aviation also forms an important strand of the Earth, Energy and Environment (EEE) University Interdisciplinary Institute, which has its operational base in ERI.</p>	<p>Aviation</p> <ul style="list-style-type: none"> Combustion in gas turbine engines and enhanced efficiency; Advanced materials for aerospace applications; Aviation fuels, including alternative fuels; Emissions and their control; Enhancing the performance of the civil aviation system 	10 affiliated academic staff	General Engineering
Institute for Transport Studies, University of Leeds	<p>The UK's largest single academic transport group and a leading international centre for transport research. Its primary purpose is to advance the understanding of transport activity, operations and use, and to develop skills and best practice among transport professionals and decision-makers. The Institute is inter- and multi-disciplinary; staff come from a wide variety of background disciplines, including economics, engineering, geography, mathematics, computing, psychology and social science.</p>	<p>Freight</p> <ul style="list-style-type: none"> freight transport economics freight modelling and forecasting green logistics <p>Surface Travel Behaviour/Planning</p> <ul style="list-style-type: none"> Economics and Discrete Choice Spatial Modelling and Dynamics Safety and Technology Sustainable Transport Policy 	21 academic staff, 26 researchers, 47 PhD students	Economics and Econometrics; Town and Country Planning
Transport Research And Consultancy, Cities Institute, London Metropolitan University	<p>A research centre that works with transport providers and users to: develop sustainable practices that enhance access and mobility, and</p>			Business and Management Studies

Name	Description	Sub-topics covered	No of staff	Field
	improve people's quality of life; offer innovative solutions for the sustainable movement of people, with particular reference to areas of urban regeneration and renewal; and facilitate effective participation by residents, small businesses and other stakeholders to plan and implement improvements in local transport and public spaces.			
Control Systems Research Group , School of Electronic, Electrical and Systems Engineering, Loughborough University	Theoretical and practical aspects of control and systems engineering. Focussing on the application requirements from a range of established theoretical techniques to provide solutions involving both simulation and technology demonstration.	Rail <ul style="list-style-type: none"> • Active control of railway dynamic systems • Control system processors • Condition monitoring for railway vehicles 	3 academic staff, 3 researchers, 7 PhD students	Electrical and Electronic Engineering
Low Carbon Technology Research Group , Department of Aeronautical and Automotive Engineering, Loughborough University	The aim of the group is to carry out both experimental and computational high efficiency energy applications research that leads to enhanced understanding of industrially relevant aero/auto low carbon technologies.	Automotive Engineering & Technology <ul style="list-style-type: none"> • Combustion • Fuel cell technology • Hybrid and electric vehicle technology 	4 academic staff, 1 researcher + 4 PhD students	Mechanical, Aeronautical and Manufacturing Engineering
Transport Safety Research Centre , Loughborough Design School, Loughborough University	The TSRC is a multi-disciplinary team conducting research into all aspects of road and vehicle safety and road user behaviour. The Centre bases its research on real-world accident studies, naturalistic studies of driver behaviour and statistical analysis of accident, health and mobility data	Surface Travel Behaviour/Planning <ul style="list-style-type: none"> • Accident and Injury Investigation • Vehicle Safety Research • Road User Behaviour • Health Impacts Research • Infrastructure Safety Research • Road Safety Policy 	16 staff	Sociology

Name	Description	Sub-topics covered	No of staff	Field
Transport Studies Group , Loughborough University	Research in the analysis, modelling, planning & design of transport systems through the pursuit of six research themes: Mobility Management; Environment & Sustainability; Transport Technology and Safety; Infrastructure Engineering; Structures and Materials & Air Transport. Funding from European Commission, DfT, EPSRC, ESRC, various Passenger Transport Executives, local authorities & the private sector.	Aviation <ul style="list-style-type: none"> • examining the propensity to fly • examining the impact of the EU-US Open Skies agreement • modelling aircraft accidents, examining low-cost carriers' pricing, • competitive behaviour and impact, • the economic impacts of aviation and globalisation and security Surface Travel Behaviour/Planning <ul style="list-style-type: none"> • Mobility Management • Environment & Sustainability; • Transport Technology and Safety • Infrastructure Engineering • Structures and Materials • Air Transport 	7 academic staff; 2 Research staff; 13 PhD students	Civil Engineering
Tyndall Centre Manchester , The University of Manchester	The Tyndall Centre brings together scientists, engineers, social scientists and economists, providing considerable and diverse academic expertise on all aspects of energy and climate change.	Aviation <ul style="list-style-type: none"> • Aviation • Scenarios and pathways • Emissions accounting • Policy and governance • Consumption and practices Shipping <ul style="list-style-type: none"> • Shipping • Scenarios and pathways • Emissions accounting • Policy and governance • Consumption and practices 	5 academic staff, 11 researchers, 7 PhD students	General Engineering ; Environmental Science
Centre for Air Transport &	CATE has a global reputation for	Aviation	8 academic staff,	Environmental

Name	Description	Sub-topics covered	No of staff	Field
The Environment (CATE) , Manchester Metropolitan University	aviation-related research and is leading on the environmental impacts of the growth of air travel. The Centre also provides science and related policy-based technical advice to government and regulatory authorities, at a national and global level. Funded by ESPRC UK Government and EU amongst others.	<ul style="list-style-type: none"> • Climate Change • Local Air Quality • Noise and Community Impacts • Sustainable Development 	8 researchers, 5 PhD students	Sciences
Rail Technology Unit , Manchester Metropolitan University	Carries out research & consultancy into the dynamic behaviour of railway vehicles & their interaction with the track.	Rail <ul style="list-style-type: none"> • Software Benchmarking • Wheel Rail contact Benchmarking • Roller Rigs • Neural Networks • Noise • Track System Modelling • Vehicle Dynamics • Instrumentation 	14 staff	General Engineering
New Rail , Newcastle University	A dedicated railway research centre with expertise in diverse areas of the rail industry with wide experience in applied research for railways focusing on the development and strategic implementation of innovative technologies, with links to the major international players in industry as well as institutions and end users.	Rail <ul style="list-style-type: none"> • Rail freight and logistics • Rail vehicles • Rail infrastructure • Rail systems including: <ul style="list-style-type: none"> • Energy • Emissions reduction technologies for rail vehicles 	10 academic staff, 11 researchers, 6 PhD students	General Engineering
School of Marine Science and Technology ,	The largest and broadest-based marine school in the UK, covering the fields of marine engineering,	Shipping <ul style="list-style-type: none"> • Low carbon shipping • Marine Powering and Control 	28 academic staff, 14 research staff,	Biological Sciences; Mechanical, Aeronautical and

Name	Description	Sub-topics covered	No of staff	Field
Newcastle University	marine biology, naval architecture, offshore engineering, coastal management and small craft technology	<ul style="list-style-type: none"> • Renewable Energy and Environmental Sustainability • Marine biotechnology • Marine ecology 		Manufacturing Engineering; Environmental Sciences
Transport Operations Research Group , Newcastle University	An interdisciplinary research group employing advanced technologies and behavioural research to address the need for radical changes in transport provision, traffic network management and public behaviour.	Surface Travel Behaviour/Planning <ul style="list-style-type: none"> • Technologies for transport monitoring and systems management • Travel behaviour and transport planning 	6 academic staff, 19 researchers, 15 PhD students	Civil Engineering
Centre for Public Policy , Northumbria University	The Centre offers research expertise in the evaluation of public services, including service design and delivery, cost effectiveness and value for money.	Surface Travel Behaviour/Planning <ul style="list-style-type: none"> • Mobility & social inclusion and exclusion. • Regional transport structures • Mobility and employment • Transport policy 		Sociology
Centre for Rail Human Factors , University of Nottingham	A focus for understanding and designing for reliable human performance in the complex distributed and changing work environment that is the railway system.	Rail <ul style="list-style-type: none"> • Planning and scheduling, • workload assessment, • situation awareness, • handheld displays, • human error assessment and prediction, • teamwork and safety critical communication. 		Psychology; General Engineering
University of Nottingham Transport Research	The activities in transport research at the University of Nottingham are conducted in a large number of academic schools, including Mechanical, Materials & Manufacturing Engineering, Psychology, Computer Science, Civil	Surface Travel Behaviour/Planning <ul style="list-style-type: none"> • transport engineering, • human factors • psychology and behaviour 		Cross-disciplinary: Geography; Town and Country Planning; Sociology; Mechanical, Aeronautical and

Name	Description	Sub-topics covered	No of staff	Field
	Engineering and Electrical and Electronic Engineering and encompass the sectors of automotive, rail, aerospace and maritime-based research.			Manufacturing Engineering; Psychology
Design Innovation Group , Open University	Interdisciplinary research and teaching in the general principles, processes and practices of design. This ranges from product design to digital media, from engineering design to complex socio-technical systems.	Surface Travel Behaviour/Planning <ul style="list-style-type: none"> • Sustainable transport designs • Sustainable transport policies • Travel planning • Innovative transport services 	3 staff	Geography Town and Country Planning; Sociology;
Transport Studies Unit , University of Oxford	The TSU takes an interdisciplinary approach to the study of transport futures, drawing on relevant, state-of-the-art developments in geography, environmental and transport studies, economics, sociology, psychology and the engineering sciences.	Surface Travel Behaviour/Planning <ul style="list-style-type: none"> • Energy, Environment and Climate Change • Mobility, Society and Culture • Policy, Economics and Governance 	1 academic staff, 9 researchers, 8 PhD students	Geography
Spatial Planning Group , Oxford Institute for Sustainable Development , Oxford Brookes University	SPG brings together a wide range of intellectual and policy concerns within spatial planning and cognate fields under the heading of sustainable development, with a particular focus on three major areas of study: Planning Thought and Governance; Economic Development, Innovation and Regeneration; and Accessibility, Transportation and Migration.	Surface Travel Behaviour/Planning <ul style="list-style-type: none"> • transportation policy and travel behaviour, • Sustainable mobility studies. • International Migration and Sustainable Development • Infrastructure Planning and Delivery 	14 staff	Town and Country Planning
Sustainable Vehicle	The centre will deal with current	Automotive Engineering &		Mechanical,

Name	Description	Sub-topics covered	No of staff	Field
Engineering Centre, Oxford Brookes University	and future challenge facing the whole life of the vehicle. Current issues concern the disassembly, disposal and the recycling and reuse of materials in the current global vehicle parc. SVEC will investigate the materials, design issues and drivetrain concepts that will allow the development of low mass, low emission, economical vehicles that satisfy functional and safety requirements, whilst being amenable to disassembly and recovery of materials at end-of-life.	Technology <ul style="list-style-type: none"> • Behaviour of bonded joints in aluminium autobody structures • Novel composite roof panels and optimised bonded joint geometries • Joints in composite structures • Emissions and drive cycle analysis 		Aeronautical and Manufacturing Engineering
Centre for Maritime Logistics, Economics and Finance, University of Plymouth	CEMLEF aims to take forward the principles of sustainable enterprise through interdisciplinary research both within the social sciences and beyond, and apply them in the areas of marine logistics, economics and finance.	Shipping <ul style="list-style-type: none"> • Low carbon shipping • Environmental policy in open economies • Economics of energy efficiency • Environmental taxation • Shipping finance • Risk analysis • Maritime studies • Logistics • Supply chain management 	17 staff	Business and Management Studies
Centre for Sustainable Transport, University of Plymouth	The CST brings together academics, researchers and practitioners from across the University with expertise in aspects of transport sustainability. Focus on transport's relationship with environmental, economic and social issues.	Surface Travel Behaviour/Planning <ul style="list-style-type: none"> • Governance development and liability • Travel behaviour and space • Science and technology 	17 affiliated staff, 5 PhD students	Sociology Business and Management Studies
Centre for Transport Policy, The Robert Gordon	The aim of CFTP is to analyse transport problems, recommend	Surface Travel Behaviour/Planning	1 academic staff	Business and Management Studies

Name	Description	Sub-topics covered	No of staff	Field
University	solutions and improve understanding of transport related issues among decision-makers in the public and private sector, the media and the public at large.	<ul style="list-style-type: none"> • rural transport • transport policy in Scotland • transport and the environment 		
Rail Innovation and Technology Centre , University of Sheffield	The focus of activity is intelligent systems engineering involving detection, sensing, communication, materials, structures and software technologies that can be applied to rail infrastructure, operations and traffic. The Centre is a 5-year collaboration with Network Rail Imperial College London and the University of Nottingham which was founded in 2009.	Rail <ul style="list-style-type: none"> • the track (materials, installation, monitoring, maintenance, design, and performance); • trains and their operation, signalling, communications and information management 		General Engineering
Southampton Railway Systems Research (SR2) , University of Southampton	Aims to promote and undertake fundamental and applied research and consultancy in the areas of railway systems that: incorporates engineering, physical and social sciences; integrates scientific theory with practical applications; and is international in scope, covering the UK, Europe and beyond.	Rail <ul style="list-style-type: none"> • Infrastructure • Human Factors • Sound and Vibration • Railway Operations 		Civil Engineering; Sociology
Transportation Research Group , University of Southampton	Activities relate to all aspects of the development, application and understanding of the impacts of a wide range of transportation systems, with particular expertise in Intelligent Transport Systems, Traffic Management, Safety, the	Freight <ul style="list-style-type: none"> • Freight distribution • Green logistics • Reverse logistics • Waste consolidation Surface Travel Behaviour/Planning <ul style="list-style-type: none"> • Intelligent Transport Systems, 	6 academic staff, 12 researchers, 30 PhD students	Civil Engineering

Name	Description	Sub-topics covered	No of staff	Field
	Environment/Sustainability, Bus and Rail Operations, Human Factors, Freight and Logistics, and Walking and Cycling.	<ul style="list-style-type: none"> • Traffic Management • Safety • the Environment/Sustainability • Bus and Rail Operations • Human Factors • Freight and Logistics • Walking and Cycling 		
Environment Research Group , University of Strathclyde	Interdisciplinary group of engineers, scientists and social scientists researching: sustainability of natural resources; human impact on the environment; improvement of the quality of life.	Surface Travel Behaviour/Planning <ul style="list-style-type: none"> • Transport planning and sustainability 	4 academic staff, 1 PhD student	Civil engineering
Department of Naval Architecture and Marine Engineering , University of Strathclyde	Provider of marine technology expertise, contributing to National and International policy-making and the advancement of the Marine Technology field.	Shipping <ul style="list-style-type: none"> • Low carbon shipping • Ship Stability and Safety • Marine Hydrodynamics • Marine Structures • Ocean Engineering • Marine Engineering • Emerging Technologies • Marine Renewable Energy and Alternative fuels 	14 academic staff, 21 researchers, 40 PhD students	Marine Engineering
Automotive Dynamics and Control Group , Department of Mechanical Engineering, University of Sussex	The Group's activities focus on advanced powertrain modelling, control, and condition monitoring (including emissions control via exhaust after-treatment, automotive turbo-chargers, and steam traps); and vehicle dynamics.	Automotive Engineering & Technology <ul style="list-style-type: none"> • Adaptive Cylinder-Pressure Reconstruction • Combustion • Engine Performance Monitoring and Diagnosis • Probabilistic Modelling and Analysis of Uncertain Vehicle structures. 	4 academic staff	Mechanical Engineering
Bartlett School of Planning ,	Work on the challenges associated	Surface Travel	35 affiliated staff	Town and Country

Name	Description	Sub-topics covered	No of staff	Field
University College London	with delivering major infrastructure projects that increasingly characterise investment in public transport in advanced and developing economies. The work of the OMEGA Centre for the Study of Mega Projects in Transport and Development is funded by the Volvo Research and Education Foundation and is at the core of the Bartlett's contribution to research on understanding how complexity, uncertainty and risk-taking are managed in different cultures and contexts in the planning and evaluation of transportation and infrastructure projects.	Behaviour/Planning <ul style="list-style-type: none"> • Sustainability of land use • Transport and climate change • Major transport infrastructure projects • Risk management • Transport planning 	11 Transport PhD students	Planning
Centre for Transport Studies, University College London	Multidisciplinary team who along with the Centre for Transport Studies at Imperial College, form the University of London Centre for Transport Studies (ULCTS).	Surface Travel Behaviour/Planning <ul style="list-style-type: none"> • Safety • Transport Modelling and Analysis • Institutional and Behavioural Aspects of Transport Policy • Public Transport • The Theory and Practice of Traffic Control • Transport in Developing Countries. 	10 academic staff, 8 researchers and 6 PhD students	Civil Engineering
Energy Research Institute, University College London	Multidisciplinary research institute focusing on six main areas: buildings; energy systems; people and energy; policy and law; transport; and smart energy	Surface Travel Behaviour/Planning <ul style="list-style-type: none"> • Low carbon transportation • System modelling • Alternative fuels 	6 staff	Cross-disciplinary; Energy

Name	Description	Sub-topics covered	No of staff	Field
Maritime Research Group, Department of Mechanical Engineering, University College London	systems The Marine Research Group focuses on design orientated research on fast ship forms and on new means of electric propulsion, on the design of large complex products with a whole system and concurrent engineering focus and on the fundamental fluid dynamics of ship hydrodynamics and interactions with ocean waves.	Shipping <ul style="list-style-type: none"> • Low carbon shipping • Marine vehicle applications • Trimaran design • Marine vehicle design methods • Electric propulsion systems • Electric ship integration in to marine vehicles 	24 staff	Mechanical Engineering
Transportation and Spatial Planning sub-group, Centre for Research on Property and Planning and Highways Engineering sub-group, Centre for Sustainable Technologies, University of Ulster	These sub-groups cover the broad areas of highways, transport planning and policy.	Surface Travel Behaviour/Planning <ul style="list-style-type: none"> • Highway structures & surfaces • Public transport • Social exclusion & transport • Transport policy • Planning for green modes of transport, pedestrian behaviour & modelling • Land use planning & demand management • Application of new technology to the management of transport systems 	19 affiliated staff, 8 PhD students	Engineering; Town and Country Planning
Warwick Manufacturing Group, The University of Warwick	WMG research expertise spans digital manufacturing, materials and operations applied to different sectors including automotive, aerospace and defence, digital, energy and utilities.	Automotive Engineering & Technology <ul style="list-style-type: none"> • Hybrid vehicles • Powertrain Modelling and Simulation • Cost Benefit Analysis • Driver Behaviour • Vehicle Data Logging 	Not stated	Mechanical, Aeronautical and Manufacturing Engineering

Name	Description	Sub-topics covered	No of staff	Field
Transport Studies Group , University of Westminster	Aviation and Freight A multi-disciplinary team of research and teaching staff within the School of Architecture and the Built Environment. Funding from Research Councils, the Department for Transport and other Government Departments, the European Commission, and various research foundations and charities.	Aviation <ul style="list-style-type: none"> • Air Transport • Air Traffic Management. • route planning, • economics of operation and competitive analysis, • operational practices and management of Air Traffic Control. • technical innovation in ATM, and of policy drivers • links between aviation and climate change. Freight <ul style="list-style-type: none"> • Green logistics • Sustainable urban freight distribution and transport • Light goods vehicles and home delivery • Key performance indicators Surface Travel Behaviour/Planning <ul style="list-style-type: none"> • Transport policy and planning • Behavioural, management and operational issues, • road traffic and private car travel, • parking, • freight and logistics, • public land passenger transport, and • airlines and airports • Intelligent Transport Systems • survey and marketing research, 	5 academic staff, 8 researchers, 7 PhD students	Town and Country Planning

Name	Description	Sub-topics covered	No of staff	Field
		public attitudes and travel behaviour <ul style="list-style-type: none"> • transport performance and evaluation 		
The Centre for Transport and Society , University of the West of England	Aim to improve and promote understanding of the inherent links between lifestyles and personal travel in the context of continuing social and technological change.	Surface Travel Behaviour/Planning <ul style="list-style-type: none"> • New Technologies and travel • Understanding travel behaviour • Attitudes towards transport • Inclusive transport • Transport policy options • Demand management measures 	6 academic staff, 8 researchers 9 PhD students	Environment and Technology
Institute of Railway Studies and Transport History , University of York	A joint initiative between the National Railway Museum & the University of York. A leading centre for the study of the history of transport and mobility.	Rail <ul style="list-style-type: none"> • Preservation & interpretation of the railway past • Industrial research in British & North American railways in the 20th century • History of urban transport • Social history of engineering and technology 	4 Faculty	History
Stockholm Environment Institute , University of York	SEI-Y was established in 1989 as one of the constituent centres of the Stockholm Environment Institute. The Stockholm Environment Institute (SEI) is an independent, international research organisation committed to the implementation of practices supportive of global sustainable development. SEI conducts a comprehensive research, consulting and training programme which	Surface Travel Behaviour/Planning <ul style="list-style-type: none"> • Reducing climate risk • Managing environmental systems • Transforming governance • Rethinking development • Low carbon transport 	38 staff	Environmental Sciences

Name	Description	Sub-topics covered	No of staff	Field
	focuses on the links between the ecological, social and economic systems at global, regional and national and local levels.			

4. Applied Research and Development

[Return to Top](#)

A very wide range of organisations indeed provides applied transport research services in the UK. The automotive sector is global in scope. The key players concerned with improved cleaner vehicles and improved performance must succeed in a global market. On the other hand those addressing transport systems and travel behaviour tend to operate in a UK context though, of course, there may be important lessons that can be transferred to and learned from other countries.

The development of the Energy Technologies Institute, the Technology Strategy Board and the Office for Low Emissions Vehicles have provided routes to trials and demonstrations of alternatively fuelled vehicles and digital solutions that did not exist in the first edition of this landscape in 2007. The main sources of publicly funded research are the Office for Low Emission Vehicles/ Technology Strategy Board and the Department for Business, Innovation and Skills (BIS)/ TSB and the Energy Technologies Institute. The Low Carbon Vehicles Integrated Delivery Platform is a major funding initiative by Government and Business and this has been accompanied by a series of collaborative R&D projects and ongoing funding calls all of which combine Government investment with contributions from business. Other sources include EU Framework 7 programme (see below). [See also research landscape documents on energy storage, Hydrogen and bioenergy].

The volume of publicly funded research is however dwarfed by the activities of a few key international players based in the UK. Although there is now no longer a major passenger vehicle manufacturer headquartered in the UK, the UK still has considerable strengths in the automotive sector mainly in engine design and development and technical consultancy. Also, the UK is the location for European production for the Toyota Auris Hybrid and Nissan's all electric Leaf

(secured with a major government incentive). Johnson Matthey is the world's leading manufacturer of catalysts for vehicle catalytic converters designed to reduce pollution and also has considerable fuel cell interests covered elsewhere. Other key UK players in the global market are Ricardo and Lotus Engineering. Bodies with testing/proving grounds (MIRA/Millbrook) are also notable. Ford and Jaguar Land Rover spend around 80% of UKs total annual expenditure on automotive R&D (see NAIGT roadmap) and also have engineering and design facilities in the UK and partner with a number of Universities in collaboration projects or with spin-off companies (eg WMG (Warwick University)). The organisations in this area tend to operate on a large scale.

A wide range of organisations addresses transport planning and travel behaviour issues. These include dedicated transport engineering consultancies but increasingly include business, energy and environmental consultants. A number of academic units also deliver basic research, as well as some charities and NGOs such as the Institute for European Environmental Policy, Sustrans and the Low Carbon Vehicles partnership. The Department for Transport and the Scottish Government have also funded demonstration programmes in the area of sustainable travel ("Smarter Choices") with research undertaken to evaluate the impacts of these investments. These tend to be much smaller in scale than the bodies concerned with vehicle technology.

A small number of bodies reflect the legacy of national laboratories, or collaborative industrial laboratories. These include TRL (formerly the Transport Research Laboratory) and MIRA (formerly the Motor Industry Research Association). These now operate in competitive mode.

Table 4.1: Applied Research Funding

Programme	Funding Agency	Description	Committed Funds	Period	Typical Annual Spend
Plug-in Vehicles Economics and Infrastructure	Energy Technologies Institute	Consumers and Vehicles: This in-depth project has been looking at the potential long-term performance and cost of plug-in vehicles, as well as consumer reactions and behaviours in buying and using them. It has explored supporting infrastructure, and has included in-depth surveys with 3,000 consumers and real-world testing with 40 drivers. Electricity Distribution and Intelligent Infrastructure: This detailed project has been looking at the potential impact of electric vehicles on the UK electricity distribution grid, as well as assessing the recharging infrastructure required to support mass market adoption of plug-in vehicles in the UK. Economics and carbon benefits: This project provided a strategic level analysis of the potential size of the market for plug-in vehicles, the total level of investment needed and the total carbon offset.	£11m	March 2010 – Summer 2011	
Heavy Duty Vehicle Efficiency	Energy Technologies Institute	This project identified the technology packages and assessed the carbon benefits case for them. The study analysed the UK's HDV fleet and identified ways in which technological solutions could increase efficiencies and contribute to a reduction in liquid fuel consumption.	£0.3m	Oct 2009 – June 2010	
Low carbon truck demo	Technology Strategy Board + DfT	Technology and innovation centre focus on efficient and sustainable ways to move people and goods (freight) across national transport systems including road, rail, sea and air. Current transport systems are under increasing pressure from the rise in population and transportation needs.	£xm + £17m from DfT + contracts with businesses	Competition opened March 2012. To be established by April 2013	
Transport Systems Catapult Centre	Technology Strategy Board + DfT	Technology and innovation centre focus on efficient and sustainable ways to move people and goods (freight) across national transport systems including road, rail, sea and air. Current transport systems are under increasing pressure from the rise in population and transportation needs.	£xm + £17m from DfT + contracts with businesses	Competition opened March 2012. To be established by April 2013	
Low carbon vehicles:	Technology	The Technology Strategy Board and the Office for Low	up to £25	Competition	

the road to market	Strategy Board and the Office for Low Emission Vehicles	Emission Vehicles are to invest in collaborative R&D and demonstration projects that will accelerate the commercialisation of low carbon vehicles. Proposals must be centred on the vehicle and cover at least one technical area and at least one competition theme as detailed in the brief. Projects must be collaborative and business-led. Expected to award a range of grants from £500k and potentially up to figures in excess of £5m.	million	closes May 2012	
Highly innovative strategic technologies in low carbon vehicles	Technology Strategy Board and Department for Business Innovation and Skills (BIS)	grants to 16 collaborative research and development projects that focus on achieving significant cuts in CO ₂ emissions for vehicle-centric technologies in low carbon vehicles. Technologies supported include ultra lightweight engine designs, advanced battery management systems and the next generation of electric motors. Including contributions from the participating companies, the total value of the research and development projects is more than £19 million.	£10 million	Funded from 2011	
Fuel cells and hydrogen: whole system integration	Technology Strategy Board	The Technology Strategy Board is to invest in collaborative research and development projects involving fuel cells and hydrogen energy systems. The aim is to accelerate the commercialisation of these products by linking them with other technologies to form complete low-carbon solutions. Successful projects will generally attract up to 50% public funding and the expected total cost of each project to be £3m-5m.	up to £7.5 million	Competition open from January 2012	

Table 4.2: Key Research Providers (non-academic and not including motor manufacturers) (see also Section 3.2 above)

Name	Description	Sub-topics covered	No of staff	Sector
AEA Technology Environment	AEA offers technical, strategic and implementation services across the full spectrum of sustainable transport solutions - from research and policy advice on emissions, to advice on lower carbon vehicles/fuels across all modes. AEA manages the National Atmospheric Emissions Inventory (NAEI) on behalf of the UK Government.	<ul style="list-style-type: none"> • Emissions • Air quality 		Consulting engineers
AECOM	Global provider of professional technical and management support services to a broad range of markets, including transportation, facilities, environmental, energy, water and government.	<ul style="list-style-type: none"> • Aviation • Highways and Bridges • Freight Rail • Transit • Ports and Marine 		Management consultancy
Arup	Independent firm of designers, planners, engineers, consultants and technical specialists offering a broad range of professional services.	<ul style="list-style-type: none"> • Aviation • Energy • Highways • Maritime • Rail 		Management consultants
Atkins	Atkins is one of the world's leading providers of highway and transport solutions which has more recently become involved in the development of sustainable policies, plans and processes.	<ul style="list-style-type: none"> • Transport planning • Transport management • Vehicle telematic systems 		Management consultancy
Austin Analytics	Research, analysis, and advice for the public transport industry and its partners	<ul style="list-style-type: none"> • Travel information • ITS • Transport Planning • Travel behaviour 	1 full time staff	Management consultancy
Cenex (based at Loughborough)	Cenex has a team of automotive and low	<ul style="list-style-type: none"> • Fleet carbon reduction advice and tender support 		

Name	Description	Sub-topics covered	No of staff	Sector
University)	carbon experts providing consultancy and programme delivery services for low carbon projects.	<ul style="list-style-type: none"> • Strategic consultancy of low carbon technologies • Vehicle trial and analysis support • Low carbon vehicle and infrastructure deployment programmes project support 		
DHC	DHC provides transport research and consultancy. DHC supports a wide range of public and private sector clients to deliver solutions to transport and related problems. By undertaking and drawing from leading edge research, DHC seeks to ensure evidence-based policy delivery.	<ul style="list-style-type: none"> • Transport planning • Travel Behaviour • Policy and governance • Best value • Land use and transport • Social inclusion • Economic development 	2 full time	Management consultancy
E4Tech UK Ltd	E4tech is an international consulting firm dedicated to helping clients meet challenges relating to sustainable energy.	<ul style="list-style-type: none"> • Fuel cells & hydrogen energy • Biomass & waste for energy • Sustainable buildings • Distributed and renewable energy systems 	15 staff	Consulting engineers; Management consultancy
Ecolane Ltd	Provides independent advice on how to reduce the environmental impact of road transport through the promotion of low carbon vehicles.	<ul style="list-style-type: none"> • Green fleet reviews, • Life cycle assessments of low carbon vehicles, • Vehicle emissions audits (CO₂, NO_x), • Car consumer attitude surveys, analysis of vehicle purchasing behaviour, • Modelling the impacts of new systems of vehicle taxation. 	2 full time	Transport; Environmental Consultancy
Element Energy	Strategic energy consultancy. Specialise in the intelligent analysis of low carbon energy in transport, power generation and buildings	<ul style="list-style-type: none"> • Battery electric, plug-in and hybrid vehicles and infrastructures • Hydrogen & fuel cells, and refuelling infrastructures 	~12 full time	Energy Consultancy

Name	Description	Sub-topics covered	No of staff	Sector
		<ul style="list-style-type: none"> • Consumer acceptance of low-carbon vehicles • Biofuels 		
Gfleet	Independent Sustainable Transport Consultancy that works with organisations wishing to reduce the financial, environmental, and social cost of transport.	<ul style="list-style-type: none"> • Establishing the current fuel usage and mileage profile. • Quantifying the fleet's financial and environmental costs. • Defining the fleet's air quality impact and safety profile. • Identifying opportunities to cut fuel use and cost. • Selecting practical sustainable transport technologies. • Ensuring that fleet policies are also tax efficient. • Quantifying the cash and carbon savings from a lower carbon strategy. 		Transport Consultancy
Halcrow Group	Halcrow specialises in the provision of planning, design and management services for infrastructure development worldwide. With interests in transportation, water, maritime and property, the company is undertaking commissions in over 70 countries from a network of more than 70 offices.	<ul style="list-style-type: none"> • Transport Planning • Urban planning • Masterplanning • Policy research • Transport economics • Transport modelling and engineering • Travel behaviour change • Transport and global warming • Environmental assessment 		Consulting engineers; Management consultancy
IEEP	The Institute for European Environmental Policy (IEEP) undertakes research and	<ul style="list-style-type: none"> • Environmental technology: • Transport taxation: 	28 staff,	NGO

Name	Description	Sub-topics covered	No of staff	Sector
	consultancy work on the development, implementation and evaluation of environmental and environment-related policies in Europe.	<ul style="list-style-type: none"> • Soft measures to change travel behaviour 		
IPRT Group	Transport planning, project & regeneration consultancies	<ul style="list-style-type: none"> • Transport Assessments • Travel Plans • Expert Witness • Transport Modelling • Transport Masterplanning • Highways & Roundabout Design • s106 & s278 Negotiations • Safety Audits • Car Parking Strategies • Development Control • Development Planning • Site Feasibility • Urban Regeneration • Town Centre Regeneration • Environmental Enhancement 		Management consultancy
JMP Consultants Ltd	One of the UK's leading independent transport consultancies	<ul style="list-style-type: none"> • Business Travel • Development Planning • Environment • Infrastructure & Civil Engineering • Passenger & Freight Transport • Policy & Strategy Development • Sustainable Travel & Behaviour Change • Traffic Modelling, Signals & Systems • Urban Design & 	160 staff	Management consultancy

Name	Description	Sub-topics covered	No of staff	Sector
		Masterplanning		
Johnson Matthey Plc, Catalysts Division	Johnson Matthey is a speciality chemicals company focused on its core skills in catalysts, precious metals and fine chemicals.	<ul style="list-style-type: none"> • Auto-catalysts • Pollution control systems • Catalysts and components for fuel cells. 		Manufacturing
Lotus Engineering	Lotus Engineering is one of the world's premier automotive consultancies with engineering centres world-wide in Asia, North America and Europe.	<ul style="list-style-type: none"> • Vehicle • Powertrain • manufacturing • design 		Consulting engineers
Low Carbon Vehicle Partnership	A public-private partnership which exists to accelerate the sustainable shift to low carbon vehicles and fuels. Over 200 organisations are engaged from diverse backgrounds including automotive and fuel supply chains, vehicle users, academics and civil society. The Partnership became a not-for-profit company limited by guarantee in April 2009.	<ul style="list-style-type: none"> • Bus working group • Passenger car working group • Commercial vehicles working group • Fuels working group 		NGO
MDS Transmodal Ltd	MDS Transmodal is an independent consultancy specialising in economic and commercial studies in the transport sector, particularly freight.	<ul style="list-style-type: none"> • Transport policy • Transport models 		Management consultancy
Millbrook Proving Ground Ltd	Millbrook provides a comprehensive range of test and development resources With an experienced engineering team, Millbrook's tracks, laboratories and support services deliver test and development solutions.			Consulting engineers

Name	Description	Sub-topics covered	No of staff	Sector
Mott MacDonald	Consultancy in areas from transport, energy, building, water and the environment to health and education, industry and communications.	<ul style="list-style-type: none"> • Transport planning • Transport modelling • Major scheme appraisal • Policy support • Environmental Impact Analysis • Behavioural surveys 		Consulting Engineers; Management consultancy
MVA Consultancy	Provides advice on transport and other policy areas, to central, regional and local government, agencies, developers, operators and financiers.	<ul style="list-style-type: none"> • Local transport schemes • Transport modelling • Data effectiveness • Transport planning consultancy • Transport strategy and masterplanning • Economics and scheme appraisal • National, regional and mega-urban transport policy • Social and Market Research • Scheme delivery • Business consulting 		Management consultancy
NERA Economic Consulting	NERA Economic Consulting provides independent economic advice to the transport sector.	<ul style="list-style-type: none"> • Economic regulation • Industry restructuring • Institutional structures regulatory reform. • Public policy • Competition policy 		Management consultancy
Oaktec	Oaktec is an engineering research and development business concentrating on the development of novel engines, petrol electric hybrid technologies and low carbon automotive technologies			R&D science and engineering
Ricardo Consulting Engineers	Ricardo is a leading provider of technology, product innovation,	<ul style="list-style-type: none"> • Business strategy and restructuring 		Consulting engineers

Name	Description	Sub-topics covered	No of staff	Sector
	engineering solutions and strategic consulting to the world's automotive industries. It combines business, product and process strategy with fundamental technical research and the implementation of large-scale new product development programmes. IT has three technical centres in the UK developing a variety of technologies related to reducing emissions.	<ul style="list-style-type: none"> • Process re-engineering, vehicle • Engine, transmission and driveline design • Engineering • Testing • Systems integration 		
Sciotech	Sciotech is a university spin-out consultancy firm, which contributes to and manages the development of innovative products /initiatives that contribute to environmentally friendly transport solutions. Sciotech also offers strategic advice concerning efficient use of energy.	<ul style="list-style-type: none"> • Electric buses • Bus economics 		Consulting engineers
Steer Davies Gleave	Large consultancy undertaking transport research in a diverse range of areas	<ul style="list-style-type: none"> • Transport planning • Modelling and forecasting • Freight and logistics • Transport technology • Travel behaviour 		Management consultancy
Sustainable Transport Solutions Network	STS was formed by a group of consultants specialising in environmental transport to enable public and private sector access to a wider sustainable transport knowledge base and project management service.	<ul style="list-style-type: none"> • Low emissions technologies • Fleet and consumer attitudes • Smarter travel choices • CO₂ and air quality management • Green fleet management • Project management and training 	3	Environmental and social consultants

Name	Description	Sub-topics covered	No of staff	Sector
Sustrans	UK Charity concentrating on the development of infrastructure for active travel throughout the UK. Sustrans also act as a broker for and directly undertake research into active travel and campaign for investment in this area.			NGO
Transport Associates' Network	Network of Independent Transport Consultants	<ul style="list-style-type: none"> • Road • Rail • Air • Waterborne • PT • Freight Transport • Pedestrians and Cyclists • Multimodal and Intermodal connections 	Independent consultants 25 members by invitation only	NGO
Transport & Travel Research Ltd	Transport & Travel Research Ltd (TTR) provides transport consultancy services in the United Kingdom and throughout Europe.	<ul style="list-style-type: none"> • Market & social research • Stakeholder consultation • Public transport • Rural transport • Travel plans • Travel awareness • Transport, energy & environment • Intelligent transport systems • Passenger information systems • Demand management & road pricing • Transport & disability • Social exclusion • European transport research and demonstration projects 		Management consultancy

Name	Description	Sub-topics covered	No of staff	Sector
TRL Ltd	TRL is an independent private company wholly owned by the Transport Research Foundation (TRF). This enables profits made by TRL to be passed to TRF and re-invested in scientific research. The private test track and road network allows clients to test out the latest developments in vehicles, environments and systems. TRL's library and knowledge resource houses a wide range of knowledge and cutting edge research databases.	<ul style="list-style-type: none"> • Integrating transport • Reducing the environmental impact of transport • Centre for Sustainability has been established in order to address the wider sustainability agenda 	200 staff	Consulting engineers; R&D science and engineering
Vipre	International consultancy specialising in soft measures	<ul style="list-style-type: none"> • Travel Planning • Travel Plan / Project Implementation • Research, Policy Guidelines and Strategies • CSR and Environmental Impact • Managed Operations • European Mobility Management / Projects 		Management consultancy
WMG	A Warwick University spin off company to develop efficient technologies, established in 1980. It has research expertise spanning digital manufacturing, technologies and healthcare; materials and manufacturing; and operations and business management. An international group, with collaborative centres in the UK, India, China, Malaysia, Russia, Singapore and Thailand.	<ul style="list-style-type: none"> • Materials manufacturing • Digital technologies • Operations and business management • Low carbon technologies • Hybrid Vehicles research 		
Zytek Automotive	A specialist powertrain and vehicle engineering enterprise. Sister company of a motorsports outfit developing a	<ul style="list-style-type: none"> • Embedded Software • Mechanical Design • Systems and Applications 		Management consultancy

Name	Description	Sub-topics covered	No of staff	Sector
	worldwide reputation for electric and vehicle drivetrains	Engineering <ul style="list-style-type: none">• Vehicle Integration and Engineering• Electronic Design		

5. Development and Demonstration Funding

[Return to Top](#)

Demonstration and development funding is provided through the Government's programme of research and development for low carbon vehicle technologies and delivered through the Technology Strategy Board's Low Carbon Vehicles Innovation Platform. Within this, the Technology Strategy Board, Department for Transport and Office for

Low Emission Vehicles are the key players in the funding of two major transport and energy demonstration projects - the Ultra Low Carbon Vehicle Demonstrator and the Low carbon truck demonstration trial with a combined investment of nearly £35 million.

Table 5.1 Development and Demonstration Funding

Programme	Funding Agency	Description	Committed Funds	Period	Representative Annual Spend
Cenex (based at Loughborough University)	Department for Business, Innovation and Skills	<ul style="list-style-type: none"> Centre of Excellence for low carbon and fuel cell technologies. Cenex is a delivery agency, Department for Business, Innovation and Skills established with support from the, to promote UK market development in low carbon and fuel cell technologies for transport applications. Cenex's principal focus is on catalysing market transformation projects linking technology providers and end users. As part of this work, it runs a number of programmes for UK national and regional government. Plugged in Midlands Low carbon vehicle procurement programme Niche vehicle programme Infrastructure grant programme Transport Knowledge Transfer Network 			
Low Carbon Vehicles Innovation Platform (LCVIP)	OLEV, DFT, BIS, EPSRC, One North East, Invest Northern Ireland and delivered through Technology Strategy Board	<ul style="list-style-type: none"> The Government's programme of research and development for low carbon vehicle technologies is delivered through the Technology Strategy Board's 'Low Carbon Vehicles Innovation Platform' (LCVIP). Funded by Office for Low Emissions Vehicles, the Departments for Transport, Department for Business, Innovation and Skills, 	See below	2007 -	

		<p>the Technology Strategy Board and the Engineering and Physical Sciences Research Council, the platform was launched in September 2007 and has since delivered a wide range of research projects targeted at low and ultra-low vehicle technologies. Aims:</p> <ul style="list-style-type: none"> • To reduce carbon emissions arising from vehicles in domestic and international markets; • To accelerate the introduction of low-carbon vehicle technologies; and • To help the UK automotive sector benefit from growing demand for low carbon vehicles. 			
<p>The Low Carbon Vehicles Integrated Delivery Programme – part of the LCVIP</p>	<p>OLEV, DFT, BIS, EPSRC, One North East, Invest Northern Ireland and delivered through Technology Strategy Board</p>	<p>Integrated Delivery Programme is an investment programme, jointly funded by Government and business that will help to speed up the introduction of new low carbon vehicles onto UK's roads. The Programme will co-ordinate the UK's low carbon vehicle activity from initial strategic research through collaborative research and development, leading to the production of demonstration vehicles. The Integrated Delivery Programme features:</p> <ul style="list-style-type: none"> • A strategic programme of university-based research targeted towards future technologies for which there are good prospects of commercialisation in the long term • An industry-led advisory panel that will help shape the technological direction and priorities for the programme. It will be composed of representatives of leading elements of the UK automotive industry and low carbon vehicle technology developers, as well as relevant academic experts • Flexible rolling opportunities for industry to seek support for high quality collaborative research and development proposals which take technology 	<p>£250 million of joint industry government investment</p>		

		<p>through to system or vehicle concept readiness</p> <ul style="list-style-type: none"> Funding to support trialing and demonstration of particularly innovative lower carbon vehicle options. 			
<p>TSB E-vehicle development projects – also part of the LCVIP</p>	<p>TSB – LCVIP funding</p>	<p>Six development projects to advance e-vehicle development have been funded by TSB. Consortia from some of the UK’s leading vehicle manufacturers, working alongside supply chain manufacturers and universities, have developed the winning projects:</p> <ol style="list-style-type: none"> Hybrid Integrated Commercial Vehicle VIPER – Vehicle Integrated Powertrain Energy Recovery Evolution of REEV technologies – Building a UK Supply Base (REEVolution) Lightweight Ultra Low Emissions Delivery Van CREO – CO₂ Reduction through Emissions Optimisation Aluminium Matrix Composite Materials for Vehicle Weight Reduction (AluMatCom) 	<p>£52m (part of LCVIP)</p>		

Table 5.2: Major Demonstration Projects

Name	Description	Sub-topics covered	Total Project Cost	Public Sector Funder	Public Sector Funding	Period
The Ultra Low Carbon Vehicle Demonstrator / Plugged in Places – part of the LCVIP	<p>Funded by Technology Strategy Board, OLEV, DfT, AWM, ONE and the South East of England Development Agency. In 2009 a competition was launched to create a large-scale ultra low carbon vehicle demonstration programme. It involved investment of. Demonstration programmes are being run by eight consortia around the country, including several of the major car manufacturers as well as universities, local authorities and power companies, resulting in around 340 vehicles taking part in extended trials on the roads.</p>	<p>The aim: to showcase new and emerging low carbon vehicle technologies in real world situations, and to identify potential barriers to their wider adoption. in-vehicle data logging, user perception surveys, consideration of the required local infrastructures</p>		TSB DfT	around £25m	From 2009
Low carbon truck demonstration trial	<p>The Technology Strategy Board and the Department for Transport (DfT) are to invest £9.5m to encourage and assist UK road-haulage operators to buy and use low carbon medium and heavy-goods vehicles. Demonstration trial fleets will be run for two years, during which time usage data will be gathered and analysed by DfT. This competition is open to businesses of any size and we are actively seeking to engage</p>	<p>Help operators establish and run fleets of alternative and dual-fuel heavy-goods vehicles, and electric and hybrid commercial vehicles by partfunding both the difference in capital cost</p>		TSB / DfT	£9.5 million	Competition opens April 2012

	with small and medium-sized enterprises (SMEs) as well as the large operators. Every application must be a collaboration and be led by a vehicle operator. The maximum grant received by a single application is not expected to exceed £750k.	between the traditional vehicles and their low carbon equivalents, and the refuelling/charging point for use by the trial fleet.				
Smarter Choices, Smarter Places	Seven local authorities chosen to invest on improving local facilities for walking, cycling and public transport alongside promotion and information campaigns such as Smarter Measures. This co-ordinated approach will be tested in a range of different locations throughout Scotland, from rural towns to city centres. Designed to increase active travel and public transport use and tackle transport emissions	<p>Activities in these Local Authorities include:</p> <ul style="list-style-type: none"> • better public transport services and residential improvements • upgrades in walking and cycling infrastructures • studies into travel patterns and access • intensive marketing and awareness campaigns • workshops and information packs 		Scottish Government Local Authorities	£15m (£10m Scottish Government + £5m matched funding from Local Authorities)	2008-2011

6. Research Facilities and Other Assets

[Return to Top](#)

There are several R&D/testing/certification facilities that date from the time when the UK was the site of major vehicle manufacturing activity.

These include test tracks, wind tunnels, laboratories and knowledge resources. The main facilities are described in the table.

Table 6.1: Research Facilities

Name	Description	Type of asset	Scale of operation	Annual Operating Budget
Jaguar Land Rover	Two engineering and design facilities in Gaydon (Warwickshire) and Whitley (Coventry)	Test facility		
Lotus Engineering	Lotus Engineering is one of the world's premier automotive consultancies with engineering centres world-wide. Facilities: styling studio, test track, computer software, manufacturing hardware.	Test facility		
Millbrook Proving Ground Ltd	Millbrook provides a comprehensive range of test and development resources With an experienced engineering team, Millbrook's tracks, laboratories and support services deliver test and development solutions.	Test facility		
MIRA	MIRA, formerly the Motor Industry Research Association, is a leading independent provider of product engineering, research, testing, information and certification to the worldwide automotive industry.	Test facility		
Ricardo UK	<ul style="list-style-type: none"> Cambridge Technical Centre, dedicated to our Control & Electronics activities, employing approximately 60 people, and is a leading designer and developer of automotive electronics and associated embedded software technologies. We are engaged on projects including engine management systems, powertrain and vehicle control systems, active safety, on-board diagnostics and embedded software Midlands Technical Centre: centre of excellence for Ricardo's Vehicle Systems and Driveline and Transmission Systems engineering. Our vehicle systems team works on projects ranging from military vehicles and heavy plant right through to passenger cars. Shoreham Technical Centre: Design, development and research of internal combustion engines and systems including gasoline, diesel and gaseous fuelled engines of all sizes. Engine and vehicle acoustic development and refinement. Engine and vehicle control and 	Test facility		

	calibration. Fuel and lubricant testing and development. Emissions related chemistry. Motorcycle, moped and scooter total design and development.			
TRL Ltd	TRL is an independent private company wholly owned by the Transport Research Foundation (TRF). This enables profits made by TRL to be passed to TRF and re-invested in scientific research. The private test track and road network allows clients to test out the latest developments in vehicles, environments and systems. TRL's library and knowledge resource houses a wide range of knowledge and cutting edge research databases.	Test facility		

7. Networks

[Return to Top](#)

The Transport Knowledge Transfer Partnership was created in 2010 and funded by government in partnership with the TSB. It has identified priority areas including energy efficiency, low carbon vehicles and intelligent mobility. This supersedes the Foresight Vehicle emerged from OST’s Foresight Programme in the late 1990s, was then taken over by SMMT and produced the Foresight Vehicle Technology Roadmap in 2009 as part of the New Automotive and Innovation Growth Team (NAIGT) strategy for ensuring future sustainability of the UK motor industry.

The *Low Carbon Vehicle Partnership*, created as the result of a recommendation by the Automotive Innovation and Growth Team in

2003, is still an important public-private partnership that brokers the shift to lower carbon vehicles with a membership of over 200 diverse organisations from automotive and fuel supply chains, bus operators, vehicle users and academics. It became a not-for profit company in 2009.

In addition, there exists a plethora of industry groups, trade associations and subject specific networks, some of them almost exclusively academic, many of which have grown from EU funded or other specific projects such as the recently funded Transport Behaviours Network from the RCUK Energy Programme.

Table 7.1 Networks

Network	Established	Description	Membership	Activities
ACT Travelwise	2008	ACT TRAVELWISE was formed in 2008 from a merger of The Association for Commuter Transport (ACT)(which had been founded in 1997) and the National TravelWise Association (NTWA). ACT Travelwise has the mission “To support our members in their work to promote sustainable travel through provision of first-class learning opportunities, partnership working, marketing support and networking events, all with a specific focus on building expertise	Transport professionals – individuals and companies	Specialist advice Newsletters, factsheets Websites, webzines Conferences Masterclasses, training courses and awards

		and experience in travel planning and other cost-effective demand management measures.”		
Automotive Council	2009	The United Kingdom Automotive Council was established in December 2009. Its establishment was a key recommendation of the industry led New Automotive Innovation and Growth Team (NAIGT) which reported in May of that year. To help take forward the work of the Automotive Council two sub-groups have been established – the Supply Chain Group and the Technology Group.	The Council is chaired jointly by the Secretary of State for Business, Innovation and Skills (BIS) and Industry Chair, Richard Parry Jones.	<p>The Automotive Council aims to:</p> <ul style="list-style-type: none"> • Create a transformed business environment for the automotive industry in the UK to provide a more compelling investment proposition for related industries; • Develop further the technology roadmaps for low carbon vehicles and fuels, and exploit opportunities to promote the UK as a strong candidate to develop these and other technologies; • Develop a stronger and more competitive automotive supply chain; • Provide a stronger public voice for the industry to support the value of the industry to the UK and to global partners; • Ensure a strategic, continuous conversation between Government and the automotive industry in the UK.
Aviation Environment Federation	1975	The Aviation Environment Federation (AEF) is the principal UK non-profit making environmental association concerned with the environmental effects of aviation.	Over 120 affiliated members comprising community and environmental groups, local authorities, parish councils, businesses and consultancies and individuals	<ul style="list-style-type: none"> • Works closely with local, national and international decision-makers to address the environmental effects of aviation • Represented on Government and European Commission working groups • Observer status to the environmental committee of the International Civil

				<p>Aviation Organisation.</p> <ul style="list-style-type: none"> • Advises members on how to approach local airport and airfield issues. • Newsletter, reports and seminars keep membership up to date with latest environmental news and issues.
European Council for an Energy Efficient Economy	1993	<p>eceee is a non-profit, membership-based European NGO. The goal of eceee is to stimulate energy efficiency through information exchange and co-operation.</p>	<p>Policy makers, energy practitioners, NGO representatives and researchers involved in the study or promotion of energy efficiency. eceee currently has more than 75 member organisations. In total more than 450 individuals are members of the eceee. This includes both personal members and individuals who are affiliated through their member organisations.</p>	<ul style="list-style-type: none"> • Annual conference • Policy advocacy • Information provision • Training opportunities
European Federation for Transport and the Environment (T&E)	1990	<p>Transport & Environment is the principal environmental organisation campaigning on sustainable transport at the EU level in Brussels. supported by around 50 member organisations working to promote an environmentally sound approach to transport across Europe.</p>	<p>Mainly NGOs. EG in UK:</p> <ul style="list-style-type: none"> Aviation Environment Federation Campaign for Better Transport Friends of the Earth Transform Scotland Environmental Transport Association 	<p>Work primarily in areas of:</p> <ul style="list-style-type: none"> • Cars and CO₂ • Aviation • Biofuels • Dirty oil • Shipping • Vehicle noise • Smarter road freight • EU transport spending
Chartered Institute of Highways and Transportation (CIHT)		<p>A learned society concerned specifically with the planning, design, construction, maintenance and operation of land-based transport systems and</p>	<p>over 12,000 members</p>	<ul style="list-style-type: none"> • Promote the exchange of knowledge • Improve policy formulation, • Stimulate debate on transportation issues, • Recognise and develop individual

		infrastructure.		<p>competence (through qualifications and continuing professional development)</p> <ul style="list-style-type: none"> • Encourage best practice in the industry.
Chartered Institute of Logistics and Management (CILT)	1919	The Chartered Institute of Logistics and Transport in the UK - CILT(UK) - is the professional body for transport, logistics and integrated supply-chain management.	over 22,000 members	<p>The Institute's activities revolve around eight sectors in the logistics and transport industries: These are:</p> <ul style="list-style-type: none"> • Supply Chain • Transport Planning • Rail • Active Travel & Travel Planning • Bus & Coach • Ports, Maritime & Waterways • Freight Forwarding • Aviation
Local Transport Planning Network		The network provides means of sharing good practice, carrying out process and performance related benchmarking and enables the development of transport policy ideas on a national level.	Mainly local authority officers	<ul style="list-style-type: none"> • Dissemination of best practice
Low Carbon Vehicle Partnership	2003, became a not-for-profit company limited by guarantee in April 2009	The LowCVP is a public-private partnership that exists to accelerate a sustainable shift to lower carbon vehicles and fuels and create opportunities for UK businesses.	<p>Over 200 organisations including:</p> <p>Automotive industries Fuel and energy industries - including alternative fuel suppliers Technology providers Transport operators Motoring and consumer groups Environmental organisations R&D and the academic community Finance and investment</p>	<p>Working groups focus on:</p> <ul style="list-style-type: none"> • buses; • passenger cars; • commercial vehicles, and • fuels.

			community Government (local and central) Regulatory bodies	
The Network on European Communications and Transport Activity Research (NECTAR)	1992	NECTAR is a European-based scientific association with a network culture. The primary objective is to foster research collaboration and exchange of information between experts in the field of transport, communication and mobility from all European countries and the rest of the world. NECTAR is a multidisciplinary social science network. It brings together a wide variety of standpoints on transport and communication problems and their impacts on society in an international perspective.	NECTAR brings together experts in the field of transport, communication and mobility from all European countries and the rest of the world.	Activity organized in Clusters: <ul style="list-style-type: none"> • Networks • Policy and Environment • Logistics and Freight • Commuting, Migration and Labour Market • NECTAR Summer Courses • Accessibility • Transport Security
Royal Town Planning Institute (RTPI)	1914	The RTPI is a membership organisation, and a registered charity. The RTPI is setting up new Networks to cater for different sectors of the profession.	Most of its members are fully qualified professional planners. Nearly two thirds work as planning officers for local councils. Others work for central government, property developers.	RTPI work is focused on: <ul style="list-style-type: none"> • Promoting good planning; • Developing and shaping policy affecting the built environment; • Raising standards of the planning profession; • Supporting members through continued professional development; and • Education and training for future planners.
Society of Motor Manufacturers and Traders	1902	The Society of Motor Manufacturers and Traders (SMMT) exists to support and promote the interests of the UK automotive industry at home and abroad.		<ul style="list-style-type: none"> • Business Development • Consumer Advice • Funding and support • International Services • Market intelligence

		Working closely with member companies, SMMT acts as the voice of the motor industry, promoting its position to government, stakeholders and the media.		<ul style="list-style-type: none"> • Technology and Innovation • Vehicle data
Transport Innovation Network (i-Net)	2009	Part funded by the European Regional Development Fund, managed by Loughborough University. Core objective is to grow and develop knowledge transfer between regional Universities in the Midlands and small and medium sized enterprises which form part of the transport economy including the marine, railway, automotive and aerospace sectors	The Transport iNet brings together businesses, sector organisations and universities, all with a common area of interest, innovation expertise and capability within this market sector	<ul style="list-style-type: none"> • Advice • Support • Collaboration • Development
Transport Planning Society		The Transport Planning Society provides professional development and a meeting place for all those working in the transport sector and leads the response to emerging policy challenges. Focuses on facilitating, developing and promoting knowledge and understanding best practice in transport planning.	Transport professionals – individuals, students and corporate members	Education and training Best practice dissemination
Transport Planning Network	2004	The Network has been set up as a joint initiative by the Royal Town Planning Institute and the Transport Planning Society to provide a clear and effective voice for all their members with an interest in transport planning issues.	Transport professionals – individuals (from RTPI and TPS)	Disseminates knowledge Promotes good practice through the interaction of its members Seeks to influence key decision-makers Topic focus on transport and climate change and peak oil

UMARI – University of Manchester Aerospace Research Institute	2005	Brings together more than 100 academics to tackle the multidisciplinary challenges faced by the aerospace industry in the 21st Century. Extensive research and technology programmes, aligning directly with international and national industrial priorities and 2020 Vision, are being delivered for greener, faster, safer and more extensive travel.	Membership – University of Manchester Academics	<ul style="list-style-type: none"> • Interdisciplinary research centre • Key influencer of the aerospace industry • Offering continuous professional development opportunities to industry. • Recruiting, training and retaining world class researchers
University Transport Studies Group	1967	UTSG aims to promote transport teaching and research and to act as a focus for those involved in these activities in universities and institutions of higher education in the UK and Ireland.	Member institutions (>50) are expected to be conducting a substantial amount of postgraduate research in the field of transport. In addition to the membership from the UK and Ireland, over 70 academic institutions are represented on its list of overseas correspondents	<ul style="list-style-type: none"> • An annual conference for staff, research students and other relative newcomers to transport research of member institutions and overseas universities • Liaison with users and sponsors of transport research aimed at promoting the benefits of university research, the timely dissemination of information on research opportunities and relevant research activities to UTSG members • Occasional informal seminars and workshops. • Ensuring sufficient and sustained financial support for transport research and education at all levels • Email discussion/dissemination list
The Forge	2011	A network of social science researchers interested in novel ways of conceptualising and analysing transport and travel. Funded by ESRC and led by University of Leeds and Lancaster University.	Research students, researchers and early career policy makers	Key objectives are to: <ul style="list-style-type: none"> • Integrate transport researchers - often isolated in areas of applied research - in wider communities of social science/social theory. • Promote substantive and critical discussion around topics relating to

				<p>transport, travel and mobility from a range of social scientific perspectives.</p> <ul style="list-style-type: none"> • Develop a self-sustaining network of researchers in transport, travel and mobilities research that will provide a step-change in the research capacity of the community.
ways2work		<p>Formerly known as the National Business Travel Network, ways2work provides practical guidance in promoting sustainable travel and reduced travel in companies as a strategic part of a business improvement programme - whether the focus is on business efficiency, environmental management, work site development or the promotion of employee physical and psychological wellness. Department for Transport initiative</p>	Companies of all sizes	<ul style="list-style-type: none"> • Workplace travel planning • Best practice dissemination
Travel Behaviours Network	2011	<p>EPSRC funded network to bring together five projects funded by its 'Transport Grand Challenge: Travel behaviour habits and practice.</p>	Brings together members of the five projects but is open to the transport academic and professional community	<p>Featured projects:</p> <ul style="list-style-type: none"> • Disruption • MOT test data • Reflect • Sixth sense transport • Smart e-bikes
Transport Knowledge Transfer Network	2010	<p>Funded by government; managed in partnership with TSB. The mission of the Transport KTN is to support the development of integrated, efficient and sustainable transport systems, by bringing together independent but interrelated organisations to</p>	Brings together people from businesses, universities, research, finance and technology organisations.	<p>Identified priority areas:</p> <ul style="list-style-type: none"> • Consortia building • Energy efficiency • Harnessing data for transport • Intelligent mobility • Intelligent transport systems • Lightweighting • Low carbon

		stimulate innovation through knowledge transfer. publicly funded by the UK government.		<ul style="list-style-type: none"> • Technology roadmaps
ITS-UK		The UK association for the promotion of Intelligent Transport Systems (ITS), is a not-for-profit public/private sector association financed by members' subscriptions, and provides a forum for all organisations concerned with ITS.	Over 160 UK organisations, comprises Government Departments, Local Authorities, Police Forces, consultants, manufacturing and service companies, and academic and research institutions.	<ul style="list-style-type: none"> • Targeted Interest Groups, Task Forces and other fora, to lead the debate about and knowledge of ITS deployment. • Educating and informing practitioners and stakeholders both within and beyond the current ITS community. • Demonstrating best practice • Identifying, brokering and commissioning research
Transport Research & Innovation Portal (TRIP)		EU funded platform for exchanging information and providing strategic advice, experiences and new ideas - across national borders - to improve the dissemination of transport research. Formerly TRIP was known as the Transport Research Knowledge Centre (TRKC).	European Commission Member states' ministries Industry and professional associations Research institutes and Universities Networks of Excellence and Thematic Platforms Transport research initiatives or projects Transport research organizations International organizations Media	<ul style="list-style-type: none"> • Dissemination of best practice • Policy advocacy • Developing tools for sustainable mobility

8. UK Participation in EU Framework Programmes

[Return to Top](#)

The table below lists current (as of February 2012) EU Framework projects with UK participation and a transport and energy theme. It can be difficult to ascertain the extent to which the focus of many of these projects relates to energy. Only 7th Framework (FP7) projects are included and they stem from the Energy, Environment, Transport and ICT sub-themes. The projects are presented in alphabetical order.

There is a wide variety of topics covered from demonstration and development projects with respect to alternative fuels, combustion and propulsion; intelligent vehicles; clean rail; new logistics services; adaptation and resilience; air quality; traffic management; the development and testing of mobility management strategies in different contexts and at different scales.

The Intelligent Energy Europe programme also funds transport projects under their STEER sub-stream. UK partners have been well represented in these projects (not listed here) which have concentrated on mobility management aspects, ecodriving and the promotion of alternative vehicles.

A new FP7 Call 'Sustainable Surface Transport' closed in December 2011 and projects from this call are not represented in the table below. A final call from FP7 will open in July 2012, closing in December 2012. The next tranche of funding (2014 – 2020) will be called Horizon 2020 and transport is considered one of its major challenges.

Table 8.1: Current EU Framework Programmes

Project	Objectives	Action Line	Type of Action	Uk Participants	Co-Ordinator And Partners	Total Funding	EU Funding	Duration	Annual spend
2020 INTERFACE Tailoring of Tribological Interfaces for Clean and Energy-Efficient Diesel and Gasoline Power Trains	Durability and friction control in internal combustion engines is currently delivered from a complex package of lubricant additives in a fully formulated engine oil. These oil additives, through tribochemical interaction with the surface, produce nanostructured composite, self-healing and smart tribofilms at the surface. 2020 Interface involves the design of the complete system; functionalised Diamond-like Carbon (DLC) coating and future generation	FP7 – Transport	Small or medium-scale focused research project	University of Leeds Lubrizol Limited	University of Leeds 10 Partners	€3 871 203	€2 591 690	2009-12-01 to 2012-11-30	€1 290 401

Project	Objectives	Action Line	Type of Action	UK Participants	Co-Ordinator And Partners	Total Funding	EU Funding	Duration	Annual spend
	lubricant to enable the Europe s stretching targets in fuel economy and durability to be met.								
ARCHIMEDES Achieving real change with innovative transport measures demonstrating energy savings	ARCHIMEDES is an integrating project, bringing together 6 European cities to address problems and opportunities for creating environmentally sustainable, safe and energy efficient transport systems in medium sized urban areas. The objective of ARCHIMEDES is to introduce innovative, integrated and ambitious strategies for clean, energy-efficient, sustainable urban transport to achieve significant impacts in the policy fields of energy, transport, and environmental sustainability.	FP7 - Transport	Large-scale integrating project	Brighton & Hove Bus And Coach Company Limited Brighton & Hove City Council	Aalborg Kommune 16 Partners	€26 001 794	€15 982 452	2008-09-15 to 2012-09-14	€6 500 448
BESST Breakthrough in European Ship and Shipbuilding Technologies	Initiated by EUROYARDS, BESST aims to achieve a breakthrough in competitiveness, environmentally friendliness and safety of EU built ships. Focusing on passenger ships, ferries and mega-yachts, the results will to a large extent be applicable also to other ships. A holistic life cycle performance assessment on ship level will guide the technical developments on system level, clustered in System Groups.	FP7 – Transport	Large-scale integrating project	Safinah Limited University of Southampton Shipbuilders And Shiprepairers Association University of Strathclyde	Fincantieri - Cantieri Navali Italiani SPA 68 Partners	€28 938 840	€17 457 500	2009-09-01 to 2013-02-28	€8 904 258
BIODME	To demonstrate production of	FP7 – Energy	Collaborative	Delphi Diesel	Volvo	€28 258	€8 199	2008-09-	€28 258

Project	Objectives	Action Line	Type of Action	UK Participants	Co-Ordinator And Partners	Total Funding	EU Funding	Duration	Annual spend
Production of DME from biomass and utilisation as fuel for transport and for industrial use	environmentally optimised synthetic biofuel from lignocellulosic biomass at industrial scale. The final output of this demonstration is dimethylether (DME) produced from black liquor through the production of clean synthesis gas and a final fuel synthesis step. In order to check technical standards, commercial possibilities and engine compatibilities the bio-DME will be tested in a fleet consisting of 14 Volvo trucks.		project (generic)	Systems Limited	Powertrain AB 7 Partners	244	969	01 to 2012-08-31	244
CAPIRE Coordination Action on PPP Implementation for Road-Transport Electrification	The Coordination Action CAPIRE will prepare and support the realization of a Public Private Partnership (PPP) sustaining and putting into practice the European Green Cars Initiative. Its activities will be focused on two major fields: a careful consideration of options for the aims, shape, and implementation paths a PPP, and the identification of technology roadblocks and the respective research needs within FP7.	FP7 – Transport	Coordination (or networking) actions	Transport For London	Renault S.A.S. Represented By GIE Regienov 14 Partners	€2 145 199	€1 699 819	2010-12-01 to 2014-11-30	€536 299
CARBOTRAF A Decision Support System for Reducing CO ₂ and Black Carbon Emissions by Adaptive Traffic Management	The project aims to realize a method, system and tools for adaptively influencing traffic in real-time to reduce CO ₂ - and black carbon (BC) emissions caused by road transport in urban and inter-urban areas.	FP7 - ICT	Collaborative project (generic)	Imperial College of Science, Technology And Medicine Air Monitors Ltd	AIT Austrian Institute of Technology Gmbh 8 Partners	€4 472 545	€3 060 000	2011-09-01 to 2014-08-31	€1 490 848

Project	Objectives	Action Line	Type of Action	UK Participants	Co-Ordinator And Partners	Total Funding	EU Funding	Duration	Annual spend
CASTOR Car multi propulsion integrated power train	The main objective of CASTOR is to integrate an innovative distributed propulsion system on fully electrical vehicles. Future electrical propulsion concepts demand more efficiency and less complexity with great functionality, high robustness and light weight and need to run in a wide ambient temperature range.	FP& - ICT	Collaborative project (generic)	The University of Sheffield Magnomatics Limited	Infineon Technologies AG 7 Partners	€5 315 615	€3 400 000	2010-06-01 to 2013-05-31	€1 771 871
CHIC Clean Hydrogen in European Cities	The Clean Hydrogen in European Cities (CHIC) Project is the essential next step to full commercialisation of hydrogen powered fuel cell (H2FC) buses. CHIC will reduce the 'time to market' for the technology and support 'market lift off'. The project is based on a staged introduction and build-up of H2FC bus fleets and the supporting infrastructure across Europe. A phased approach will link experienced and new cities in partnerships, greatly facilitating the smooth introduction of the new systems now and into the future. With this arrangement the project will be linked to projects fully funded from other sources and therefore magnifies the impact of the JTI. In the context of the H2FC bus projects and progress achieved to this point, the expected results of CHIC will take the technology to the brink of commercialisation, leading in turn to	FP7 – JTI	Joint Technology Initiatives - Collaborative Project (FCH)	London Bus Services Limited Element Energy Limited	Evobus GmbH 25 Partners	€81 894 400	€25 878 334	2010-04-01 to 2016-12-31	€12 132 503

Project	Objectives	Action Line	Type of Action	UK Participants	Co-Ordinator And Partners	Total Funding	EU Funding	Duration	Annual spend
	very significant environmental & economic benefits to Europe and to the World.								
CLEANER-D Clean European rail - diesel	CLEANER-D will build on the basis of several application sub-projects, representative of the different engine applications (rail cars, Diesel Multiple Units, shunting locomotives, main line light and heavy-haul locomotives) that will enable the industry to evaluate the different solutions to be applied to rail systems in real operating conditions. The optimum trade-off between the reduction of pollutant emissions by rail vehicles and the fuel energy consumption and CO ₂ emissions, as well as the overall impact of the applied technologies on the environment through a life cycle assessment approach, will be identified by this experimental part of the project.	FP7 – Transport	Large-scale integrating project	Association of Train Operating Companies The Engine Consultancy Limited University of Newcastle Upon Tyne	Union Des Industries Ferroviaires Europeennes – UNIFE 26 Partners	€13 343 593	€7 975 574	2009-06-01 to 2013-05-31	€3 335 898
CLIMSAVE Climate change integrated assessment methodology for cross-sectoral adaptation and vulnerability in Europe	CLIMSAVE will develop and apply an integrated methodology for stakeholder-led, climate change impact and vulnerability assessment that explicitly evaluates regional and continental scale adaptation options, and cross-sectoral interactions between the key sectors driving landscape change in Europe (agriculture, forests, biodiversity,	FP7 - Environment	Small or medium-scale focused research project	The University of Oxford University of Southampton The University of Edinburgh	The University of Oxford 18 Partners	€4 162 641	€3 149 644	2010-01-01 to 2013-06-30	€1 189 326

Project	Objectives	Action Line	Type of Action	UK Participants	Co-Ordinator And Partners	Total Funding	EU Funding	Duration	Annual spend
	coasts/floodplains, water resources, urban development and transport). A range of sectoral meta-models will be linked within a common assessment platform that is user-friendly, interactive and web-based to allow the rapid reproduction of climate change impacts by stakeholders themselves.			Cranfield University					
COCOPS Coordinating for Cohesion in the Public Sector of the Future	The COCOPS project (Coordinating for Cohesion in the Public Sector of the Future) seeks to comparatively and quantitatively assess the impact of New Public Management-style (NPM) reforms in European countries, drawing on a team of leading European public administration scholars. This evidence-based project focuses on the national level and the important policy domains of health and employment services, and the utilities of water, energy and transport. It will analyse the impact of reforms in public management and public services that address citizens' service needs and social cohesion in Europe. Evaluating the extent and consequences of NPM's alleged fragmenting tendencies and the resulting need for coordination is a key part of assessing these impacts. Subsequently, COCOPS will map and analyse innovative mechanisms in the	FP7 – SSH	Small or medium-scale focused research project	Cardiff University The University of Exeter	Erasmus Universiteit Rotterdam 11 Partners	€3 394 527	€2 698 927	2011-01-01 to 2014-06-30	€969 864

Project	Objectives	Action Line	Type of Action	UK Participants	Co-Ordinator And Partners	Total Funding	EU Funding	Duration	Annual spend
	public sector to improve policy coordination and its associated effects on economic competition, public sector performance, social cohesion and societal outcomes.								
DECOMOBIL Support action to contribute to the preparation of future community research programme in user centred Design for ECO-multimodal MOBILity	DECOMOBIL will take advantage of the structured research network set up in HUMANIST NoE and followed up in HUMANIST VCE, in order to develop and widely disseminate knowledge in the area of human centred design of ICT for sustainable transport.	FP7 – ICT	Coordination and support actions	TRL Limited	Humanist	€407 685	€311 000	2011-10-01 to 2014-09-30	€135 895
DELIVER Design of Electric Light Vans for Environment-impact Reduction	CO ₂ emissions, noise emissions and other negative impacts caused by present urban delivery concepts and specifically by the delivery vehicles are unsustainable in present and future European urban life. Fully electric light delivery vehicles (LDV) not only offer zero local CO ₂ emissions and close-to-zero noise emissions. The change in propulsion technology from ICE to electric powertrains will lead to the integration of new components and systems, while others undergo changes or become obsolete. The possibility to integrate the electric motor into the wheel	FP7 – Transport	Small or medium-scale focused research project	HPL Prototypes Ltd Lec 2 Limited	Rheinisch-Westfaelische Technische Hochschule Aachen 9 Partners	€4 305 811	€2 799 594	2011-11-01 to 2014-10-31	€1 435 270

Project	Objectives	Action Line	Type of Action	UK Participants	Co-Ordinator And Partners	Total Funding	EU Funding	Duration	Annual spend
	further increases the design freedom, especially if also suspension and regenerative braking can be integrated into it. This opens up new freedom in design and clears the way for new urban delivery vehicle concepts. DELIVER is to produce and physically showcase design research results that allow for full exploitation of this new freedom, while responding to changing future market demands.								
DIRECTFUEL Direct biological conversion of solar energy to volatile hydrocarbon fuels by engineered cyanobacteria	The objective of the DirectFuel project is to develop photosynthetic microorganisms that catalyze direct conversion of solar energy and carbon dioxide to engine-ready fuels. A key process target of the proposal is 'direct' in the sense that fuel production should not require destructive extraction and further chemical conversion to generate directly useable transport fuels.	FP7 – Energy	Collaborative project (generic)	The University of Manchester	Turun Yliopisto	€4 977 781	€3 729 519	2010-10-01 to 2014-09-30	€2 244 445
ECODRIVER Supporting the driver in conserving energy and reducing emissions	ecoDriver addresses the need to consider the human element when encouraging green driving, since driver behaviour is a critical element in energy efficiency. The focus of the project is on technology working with the driver. The project aims to deliver the most effective feedback to drivers on green driving by optimising the driver-powertrain-environment	FP7 – ICT	Collaborative project (generic)	University of Leeds	University of Leeds 11 Partners	€14 534 512	€10 700 000	2011-10-01 to 2015-09-30	€3 633 128

Project	Objectives	Action Line	Type of Action	Uk Participants	Co-Ordinator And Partners	Total Funding	EU Funding	Duration	Annual spend
	feedback loop. It will carry out a substantial programme of work to investigate how best to win the support of the driver to obtain the most energy-efficient driving style for best energy use.								
ECOGEN Cooperative Advanced Driver Assistance System for Green Cars	EcoGem claims that the success and user acceptability of Fully Electric Vehicles (FEVs) will predominantly depend on their electrical energy consumption rate and the corresponding degree of autonomy that they can offer. EcoGem aims at providing efficient ICT-based solutions to this great issue, by designing and developing a FEV-oriented highly-innovative Advanced Driver Assistance System (ADAS), equipped with suitable monitoring, learning, reasoning and management capabilities that will help increase the FEV's autonomy and energy efficiency.	FP7 – ICT	Collaborative project (generic)	University of Bradford	Temsa Global Sanayi Ve Ticaret A.S. 10 Partners	€3 157 978	€2 043 922	2010-09-01 to 2013-02-28	€1 403 545
ECOMOVE Cooperative Mobility Systems and Services for Energy Efficiency	The eCoMove project will create an integrated solution for road transport energy efficiency by developing systems and tools to help drivers sustainably eliminate unnecessary fuel consumption (and thus CO ₂ emissions), and to help road operators manage traffic in the most energy-efficient way. By applying this combination of cooperative systems	FP7 - ICT	Collaborative project (generic)	NEC Europe Ltd	European Road Transport Telematics Implementation Coordination Organisation S.C.R.L. 32 Partners	€22 683 546	€13 700 000	2010-04-01 to 2013-03-31	€7 561 182

Project	Objectives	Action Line	Type of Action	Uk Participants	Co-Ordinator And Partners	Total Funding	EU Funding	Duration	Annual spend
	<p>using vehicle-infrastructure communication, the project aims to reduce fuel consumption by 20% overall. This target can be achieved by:</p> <ul style="list-style-type: none"> -Saving unnecessary kilometers driven (optimising routes) -Helping driver to save fuel (optimising driver behaviour) -Managing traffic more efficiently (optimising network management) 								
ECOSHELL Development of new light high-performance environmentally benign composites made of bio-materials and bio-resins for electric car application	<p>ECOSHELL is concerned with the development of optimal structural solutions for superlight electric vehicles (category L6 and L7e), decreasing its environmental footprint and using an innovative bio-composite material for the vehicle body. Traditionally this category of urban vehicles has been relatively expensive and lacking of sufficient security measures compared to a classic vehicle (category m1 n1), thus less attractive for popular use. However, a body car lighter than 100Kg can allow the electric vehicles to have acceptable performances at an affordable price, due to lower power of the engine and lower energy consumption. This project aims at handling the first two major draw backs (production cost and safety) while further improving the associated</p>	FP7 – Transport	Small or medium-scale focused research project	Cranfield University GRM Consulting Ltd	Conception Etudes Realisation et Gestion Informatique SAS 10 Partners	€3 879 032	€2 800 000	2011-01-01 to 2013-09-30	€1 410 557

Project	Objectives	Action Line	Type of Action	UK Participants	Co-Ordinator And Partners	Total Funding	EU Funding	Duration	Annual spend
	environmental advantages via the application of innovative biodegradable materials for the vehicle body .								
ECOSTAND ECOSTAND - Coordination Action for creating a common assessment methodology and joint research agenda with Japan and the USA on ITS applications focusing on energy efficiency and CO ₂ reduction	The overall objectives of ECOSTAND are to provide the necessary support to permit the agreement on a common methodology for assessing the effects of ITS on energy consumption and CO ₂ emissions. This will enable future ITS investment and policy decisions to be taken on the basis of sound and detailed knowledge of their environmental impacts. ECOSTAND favours a continuous dialogue between the EU, Japan and USA on the assessment of ITS, permitting a high quality EU contribution to the definition of a joint research agenda and an agreed assessment methodology, and actively stimulating cooperation between the three regions. Furthermore, ECOSTAND will stimulate the exchange of information on state-of-the-art modelling techniques and simulation tools, and will promote the definition of a common agenda for future research in this area.	FP7 – ICT	Coordination and support actions	TRL Limited	Nederlandse Organisatie Voor Toegepast Natuurwetenschappelijk Onderzoek – TNO 8 Partners	€864 378	€720 000	2010-11-01 to 2013-10-31	€288 126
EFUTURE Safe and Efficient Electrical Vehicle	The idea of intelligent vehicles that cope with safety requirements and adapt their energy needs is a long-term strategy. We have started our	FP7 – ICT	Collaborative project (generic)	Tata Motors European Technical Centre Plc	Intedis Gmbh & Co KG 6 Partners	€6 962 428	€3 952 407	2010-09-01 to 2013-08-31	€2 320 089

Project	Objectives	Action Line	Type of Action	UK Participants	Co-Ordinator And Partners	Total Funding	EU Funding	Duration	Annual spend
	work with successive European research projects in the last years by starting with the development of a drive-by-wire platform, but the combustion engine is still a drawback. eFuture wants to prepare the next generation of electric vehicle based on our first prototype by creating a platform which minimises its energy needs but can still optimise dynamically its decision between safety and energy efficiency. Our key issues will be the optimisation of this energy usage and its influence on the vehicle/driver.								
E-LIGHT Advanced Structural Light-Weight Architectures for Electric Vehicles	The automotive industry has not yet decided which the optimum architecture solution for electric vehicles is; this and the fact that requirements and constraints deriving from an electrical power-train are much less stringent in several areas make necessary to study new solutions specifically designed for the particularities of electric vehicles. Therefore E-LIGHT proposal aims at exploring all the aspects and requirements for optimal electric vehicle architectures.	FP7 – Transport	Small or medium-scale focused research project	The University of Sheffield Ricardo UK Limited	Fundacion Cidaut 8 Partners	€2 938 649	€2 099 874	2011-01-01 to 2013-12-31	€979 549
EMININN Environmental Macro Indicators of	EMInInn aims at assessing the environmental impacts associated with innovation. EMInInn will incorporate and integrate a number of	FP7 – Environment	Collaborative project (generic)	University College London	Wuppertal Institut Fur Klima, Umwelt, Energie Gmbh.	€3 137 656	€2 454 237	2011-11-01 to 2015-04-30	€922 840

Project	Objectives	Action Line	Type of Action	Uk Participants	Co-Ordinator And Partners	Total Funding	EU Funding	Duration	Annual spend
Innovation	advanced analytical approaches for the ex post assessment of the macro-environmental impacts of innovation. This methodology will be applied in different areas of technological innovation: - Energy sources and conversion technologies - Information and Communication Technologies - Transport - Built environment and buildings - Waste management				7 Partners				
EM-SAFETY EM safety and Hazards Mitigation by proper EV design	The project aims at increasing the public confidence in the safety regarding electromagnetic fields (EMF) in the fully electric vehicles (FEV). Public expectations to move towards the electrification of road transport are driven by a multitude of factors and concerns including: climate change, primary energy dependence and public health as well as cost and scarcity of raw materials. Road transport remains the main source of many local noxious emissions including benzene, 1,3-butadiene, carbon monoxide (CO), nitrogen oxides (NOx) and particulate matter (PM). Within urban areas, the noxious emissions due to road transport are particularly high.	FP7 – Transport	Small or medium-scale focused research project	Mira Ltd	Stiftelsen Sintef 10 Partners	€3 098 311	€2 249 830	2011-05-01 to 2014-01-31	€1 191 658

Project	Objectives	Action Line	Type of Action	UK Participants	Co-Ordinator And Partners	Total Funding	EU Funding	Duration	Annual spend
EUROENERGEST Increase of Automotive Car Industry Competitiveness through an Integral and Artificial Intelligence Driven Energy Management System	Euroenerggest project aims is to reduce 10% of energy consumption in a specific areas of the automotive industry, such as HVAC. For achieving this goal, an Intelligent Energy Management Systems (iEMS) will be developed. iEMS will be able to interact with industrial loads and available power sources with the objective of optimizing the demanded power and costs, as well as maximizing local and low-carbon energy sources (photovoltaics and CHP).	FP7 – ICT	Collaborative project (generic)	Brunel University	Ingenieria Y Servicios De Eficiencia Energetica SL 6 Partners	€3 435 276	€2 594 965	2011-10-01 to 2014-09-30	€1 145 092
E-VECTOORC Electric-VEhicle Control of individual wheel Torque for On- and Off-Road Conditions (E-VECTOORC)	The E-VECTOORC project brings together 11 complementary partners from industrial and research backgrounds to address the individual control of the electric motor torques of fully electric vehicles to enhance safety, comfort and fun-to-drive in both on- and off-road driving conditions.	FP7 – ICT	Collaborative project (generic)	University of Surrey Jaguar Cars Limited Land Rover	University of Surrey 11 Partners	€4 763 986	€3 094 997	2011-09-01 to 2014-08-31	€1 587 995
FCGEN Fuel Cell Based On-board Power Generation	For truck applications the increasing demand for electrical power when the vehicle stands still has lead to an increasing need for an onboard electric power generator which operates with high efficiency and very low emissions. A fuel cell based auxiliary power unit (APU), with a diesel fuel processor is regarded as one of the most interesting options	FP7 – JTI	Joint Technology Initiatives - Collaborative Project (FCH)	Johnson Matthey PLC.	Volvo Technology AB 8 Partners	€10 338 414	€4 342 854	2011-11-01 to 2014-10-31	€3 446 138

Project	Objectives	Action Line	Type of Action	UK Participants	Co-Ordinator And Partners	Total Funding	EU Funding	Duration	Annual spend
	since it combines high efficiency, low emissions and the use of the same fuel as the main engine. The overall objectives of FCGEN are to develop and demonstrate a proof-of-concept complete fuel cell auxiliary power unit in a real application, onboard a truck.								
HERCULES-C Higher Efficiency, Reduced Emissions, Increased Reliability and Lifetime, Engines for Ships	HERCULES was conceived in 2002 as a long-term R&D Programme, to develop new technologies for marine engines. It is the outcome of a joint vision by the two major European engine manufacturer Groups MAN & WARTSILA, which together hold 90% of the worlds marine engine market. The present proposed HERCULES-C project is the Phase III of the HERCULES Programme. In order to take marine engine technology a step further towards improved sustainability in energy production and total energy economy, an extensive integration of the multitude of the new technologies developed in Phases I and II is required. HERCULES-C addresses this challenge by adopting a combinatory approach for engine thermal processes optimization, system integration, as well as engine reliability and lifetime.	FP7 – Transport	Large-scale integrating project	Bodycote Metallurgical Coating Limited	National Technical University of Athens 22 Partners	€17 017 583	€9 397 174	2012-01-01 to 2014-12-31	€5 672 527
HERMES Establishing a CompreHensive	Globalisation is accelerating, and this has an impact on the way we produce, share and use knowledge. Major	FP7 – Transport	Support actions	University of Newcastle Upon Tyne	University of Newcastle Upon Tyne	€814 000	€730 150	2011-11-01 to 2014-01-	€271 333

Project	Objectives	Action Line	Type of Action	Uk Participants	Co-Ordinator And Partners	Total Funding	EU Funding	Duration	Annual spend
transport Research information Management and Exchange System	<p>global challenges such as climate change, energy supply, security of the citizen, etc., highlight the need for effective global S&T cooperation to promote sustainable development. Nowhere is this more important than in the area of Transportation R&D because an efficient and effective transport system is a fundamental prerequisite for economic growth. Furthermore, challenges transportation systems face such as congestion, security, energy efficiency and environmental problems are global concerns. The HERMES project aims to develop a closer and more effective communication, between researchers working in the field of transport technologies in the EU, and their counterparts around the world by facilitating the exchange of information and developing a framework for long term collaboration. This will be achieved through the establishment of a common portal for accessing information from databases of past and ongoing research projects worldwide, in collaboration with database managers worldwide.</p>				5 Partners			31	

Project	Objectives	Action Line	Type of Action	UK Participants	Co-Ordinator And Partners	Total Funding	EU Funding	Duration	Annual spend
HIGH V.LO-CITY Cities speeding up the integration of hydrogen buses in public fleets	Several European bus manufacturers consider the hybrid fuel cell (FCH) bus as the most promising technology to facilitate the decarbonisation of public transport. By leveraging the experiences of past fuel cell bus projects, implementing technical improvements that increase efficiency and reduce costs of FCH buses, as well as introducing a modular approach to hydrogen refuelling infrastructure build-up, the High V(Flanders).L(Liguria) O(Scotland)-City project aims at significantly increasing the velocity of integrating these buses on a larger scale in European bus operations.	FP7 – JTI	Joint Technology Initiatives - Collaborative Project (FCH)	Aberdeen City Council	Van Hool N.V. 12 Partners	€31 586 671	€13 491 724	2012-01-01 to 2016-12-31	€6 317 334
HI-WI Materials and drives for High & Wide efficiency electric powertrains	Drives for Fully Electric Vehicles and Hybrid Electric Vehicles develop their highest efficiency of around 93~95% within a speed range of usually 1/4 to 1/3 of the maximum, and at an ideal torque, whereas in real-life driving cycles the motor operates at a wider range of speeds and at partial load, resulting in much lower efficiency. Hi-Wi will address this mismatch by advancing the design and manufacture of drive trains through: - Holistic design across magnetic, thermal, mechanical and control electronics/algorithms in line with real-life use rather than a single-point	FP7 – Transport	Small or medium-scale focused research project	University of Cambridge University of Sheffield	University of Cambridge 7 Partners	€3 560 887	€2 408 673	2010-12-01 to 2013-11-30	€1 186 962

Project	Objectives	Action Line	Type of Action	UK Participants	Co-Ordinator And Partners	Total Funding	EU Funding	Duration	Annual spend
	'rating'. - The use of variable flux approaches in which the flux of the motor can be adjusted in real-time according to the load condition to maximise efficiency.								
HYMAR High efficiency hybrid drive trains for small and medium sized marine craft	Marine diesel electric and hybrid drive systems have been used in large ships and submarines for many years but have not yet been successfully transferred to smaller craft, despite claims to the contrary. Numerous attempts have been made, some very recent, but all have been sub optimal and most have failed completely. These failures are due to a lack of underpinning research and of certain key components. The project has the following objectives: Zero emissions to air and zero external noise and vibration in port Reduction of overall fuel consumption by 30%, tending to >90% on applications such as long distance sailing boats using regenerative techniques CO ₂ reduction of >30% in all off design point applications (e.g.fishing boats and small commercial ferries) 50% reduction in HC and NO _x .	FP7 – Transport	Small or medium-scale focused research project	Triskel Marine Ltd E-Motion Special Projects Ltd Bruntons Propellers Limited Enersys Limited	International Council Of Marine Industry Associations 10 Partners	€2 919 909	€2 000 106	2009-05-01 to 2012-04-30	€973 303
HYTEC Hydrogen Transport in European Cities	The HyTEC project will expand the existing European network of hydrogen demonstration sites into two of the most promising early markets	FP7 – JTI	Joint Technology Initiatives - Collaborative	Air Products PLC Greater	Air Products PLC 16 Partners	€29 530 681	€11 948 532	2011-09-01 to 2014-12-31	€9 086 363

Project	Objectives	Action Line	Type of Action	UK Participants	Co-Ordinator And Partners	Total Funding	EU Funding	Duration	Annual spend
	for hydrogen and fuel cells, Denmark and the UK. The capital cities of Copenhagen and London will deploy a fleet of 30 next generation hydrogen fuel cell passenger vehicles in three different vehicle classes taxis, passenger cars and scooters. These state-of-the-art vehicles will be used in day to day urban fleet operations, thus taking a step forward from technology demonstration projects, towards fuel cell vehicles in the hands of real users.		Project (FCH)	London Authority BAA Airports Limited Intelligent Energy Limited LTI Limited Element Energy Limited Cenex - Centre Of Excellence For Low Carbon And Fuel Cell Technologies London Bus Services Limited					
iCARGO Intelligent Cargo in Efficient and Sustainable Global Logistics	iCargo IP aims at advancing and extending the use of ICT to support new logistics services that: (i) synchronize vehicle movements and logistics operations across various modes and actors to lower CO ₂	FP7 – ICT	Collaborative project (generic)	BMT Group Limited	ATOS Spain SA 29 Partners	€17 142 901	€11 300 000	2011-11-01 to 2015-04-30	€4 897 971

Project	Objectives	Action Line	Type of Action	Uk Participants	Co-Ordinator And Partners	Total Funding	EU Funding	Duration	Annual spend
Operations	emissions, (ii) adapt to changing conditions through dynamic planning methods involving intelligent cargo, vehicle and infrastructure systems and (iii) combine services, resources and information from different stakeholders, taking part in an open freight management ecosystem. To achieve the above targets, iCargo will design and implement a decentralized ICT infrastructure that allows real world objects, new planning services including CO ₂ calculation capabilities and existing systems to co-exist and efficiently co-operate at an affordable cost for logistics stakeholders.								
INOMANS²HIP INOvative Energy MANagement System for Cargo SHIP	The INOMANS ² HIP concept aims at proposing a break-through energy management system aboard ships based on a preferred DC network integrating all potential sources of energy. A Life-Cycle Analysis study will be performed. The proposed energy management system will gather data in real time and will be able to anticipate and optimize energy needs for each operational configuration of the ship considering risk levels while systematically favouring less polluting and cost effective sources of energy.	FP7 – Transport	Small or medium-scale focused research project	University of Newcastle Upon Tyne National Renewable Energy Centre Limited	University of Newcastle Upon Tyne 9 Partners	€3 424 756	€2 184 602	2011-05-01 to 2014-04-30	€1 141 585
INROADS INtelligent	This project aims to develop Intelligent Road Studs (IRS)	FP7 – Transport	Small or medium-	TRL Limited	TRL Limited 8 Partners	€3 843 069	€2 536 758	2011-12-01 to	€1 281 023

Project	Objectives	Action Line	Type of Action	UK Participants	Co-Ordinator And Partners	Total Funding	EU Funding	Duration	Annual spend
Renewable Optical ADvisory System (INROADS)	combining LED lighting, sensor systems and communication technologies. The IRS will integrate renewable energy technologies that will fully or partially power the devices, making them self contained. The principle identified renewable technologies are solar photovoltaic and piezoelectric, although other sources will be investigated. Powering the units using renewable energy will reduce carbon emissions and allow for their use on sections of highway with no readily available power source.		scale focused research project	Siemens Public Limited Company				2014-11-30	
INTESUSAL Demonstration of integrated and sustainable enclosed raceway and photobioreactor microalgae cultivation with biodiesel production and validation.	This project will demonstrate an optimised approach to generate biofuels from algae in a sustainable manner on an industrial scale. It will integrate prior high quality research which has been undertaken at national and international levels; both with public support and with private finance.	FP7 - Energy	Collaborative project (generic)	Centre For Process Innovation Limited National Renewable Energy Centre Limited	Centre For Process Innovation Limited 9 Partners	€8 325 000	€5 000 000	2011-05-01 to 2015-04-30	€2 081 250
KITVES Airfoil-based solution for vessel on-board energy production destined to	The problem that will be the object of the project is the generation of electric energy on vessels. In the troposphere, the wind increases its velocity with the altitude and this velocity is also more constant. KiteVes	FP7 – Transport	Small or medium-scale focused research project	University of Sheffield	Sequoia Automation SRL 10 Partners	€4 254 058	€2 955 738	2008-10-01 to 2012-09-30	€1 063 514

Project	Objectives	Action Line	Type of Action	UK Participants	Co-Ordinator And Partners	Total Funding	EU Funding	Duration	Annual spend
traction and auxiliary services	solution is based on the on-board realisation of a wind-powered generator, capable to harvest the altitude wind and to efficiently convert wind power into electrical power. The kites will be equipped with sensors. The sensors will identify position, orientation and acceleration of each kite. The data will be transmitted to a control unit (placed on the vessel) which pilot motors (also placed on the vessel).								
MAENAD Model-based Analysis & Engineering of Novel Architectures for Dependable Electric Vehicles	The challenges faced in the engineering of Fully Electric Vehicles (FEV) are already partly met by EAST-ADL2, an emerging automotive architecture description language (ADL) compliant with AUTOSAR, and that EAST-ADL2 is the appropriate vehicle for fully meeting these challenges. MAENAD will extend EAST-ADL2 with advanced capabilities to facilitate development of dependable, efficient and affordable FEV.	FP7 – ICT	Collaborative project (generic)	University of Hull	Volvo Technology AB 12 Partners	€4 047 589	€2 467 593	2010-09-01 to 2013-08-31	€1 349 196
MESMA Monitoring and Evaluation of Spatially Managed Areas	The increasing pressures upon the marine realm call for a well planned approach of further spatial development of this area. An ecosystem-based approach to fisheries, the increasing demand for sustainable energy, coastal defence systems, building materials and safe	FP7 – Environment	Large-scale integrating project	Heriot-Watt University University College London DEFRA	Stichting Dienst Landbouwkundig Onderzoek 21 Partners	€8 598 512	€6 568 842	2009-11-01 to 2013-10-31	€2 149 628

Project	Objectives	Action Line	Type of Action	Uk Participants	Co-Ordinator And Partners	Total Funding	EU Funding	Duration	Annual spend
	transport routes and the need to protect marine habitats and species all compete for the same valuable space. At the same time climate change will alter the composition and functioning of marine ecosystems, calling for a robust approach of future spatial planning that also takes cross boundary developments into account. MESMA will supply innovative methods and integrated strategies for governments, local authorities, stakeholders and other managerial bodies for planning and decision making at different local, national and European scales.								
MODUM Models for Optimising Dynamic Urban Mobility	MODUM addresses the environmental footprint in the transport sector by aiming to develop a new approach for pro-active demand-responsive management of traffic to enable energy-efficient multi-modal transport choices accommodating dynamic variations, minimising the environmental impact and improving the quality of life in urban environments. Moreover, MODUM will consider commuters, in combinations of both private and public transport, facing dynamic conditions such as unexpected disturbances typical of urban environments.	FP7 - ICT	Collaborative project (generic)	University of Manchester Nottingham City Council The Nottingham Trent University	Transport & Mobility Leuven NV 9 Partners	€3 068 365	€2 350 000	2011-10-01 to 2014-09-30	€1 022 788
MOVE IT!	In response to the calls demand for	FP7 –	Small or	University of	Stichting	€3 962	€2 790	2011-11-	€1 320

Project	Objectives	Action Line	Type of Action	Uk Participants	Co-Ordinator And Partners	Total Funding	EU Funding	Duration	Annual spend
Modernisation of Vessels for Inland waterway freight Transport	cost effective modernization of the inland fleet for freight transport, MoVe IT! develops a suite of options for the modernisation of inland ships that meet the challenges of over-aging of the fleet, climate change and stronger environmental objectives and provides decision support regarding the application of these options. In this suite of options, knowledge gained from new buildings, technology transfer from other transport modes, improvement of energy efficiency & ecological performance, transition to the post-fossil-fuel-era and adaptation to new ADN rules are prominent	Transport	medium-scale focused research project	Plymouth	Maritiem Research Instituut Nederland 24 Partners	477	344	01 to 2014-10-31	825
OSIRIS Optimal Strategy to Innovate and Reduce energy consumption In urban rail Systems	OSIRIS proposes a holistic approach for the reduction of energy consumption for urban rail systems embracing vehicles, infrastructure and operation, as is proposed by. The project will start from the definition of Key Performance Indicators and Standard Duty Cycles to measure energy consumption in urban rail systems. Then, rather than focussing only on specific technologies, it will address the issue from the system-level ensuring that progresses on energy reduction are substantial. The effectiveness of solutions and their full potential will be proven by means of simulations and pilot tests.	FP7 – Transport	Large-scale integrating project	University of Newcastle Upon Tyne	Union Des Industries Ferroviaires Europeennes – UNIFE 17 Partners	€7 408 303	€4 299 951	2012-01-01 to 2014-12-31	€2 469 434

Project	Objectives	Action Line	Type of Action	UK Participants	Co-Ordinator And Partners	Total Funding	EU Funding	Duration	Annual spend
P-MOB Integrated Enabling Technologies for Efficient Electrical Personal Mobility	The P-MOB project is aiming at breaking the link between the growth in transport capacity and increased fatalities, congestion and pollution. P-MOB addresses the above challenges proposing: a novel concept of fully electrical personal mobility, reduction of system complexity concentrating on the essentials, advanced systems integration including solar cells, e-motor and magnetic torque control of the wheel, power-energy management, distributed pack of accumulators, technologies to sell-buy electricity by adaptable vehicle to grid connections. On an average day in South EU the propose vehicle is aiming at 20 km/day by using solar energy only.	FP7 – ICT	Collaborative project (generic)	The University of Sheffield Magnomatics Limited	Centro Ricerche Fiat SCPA 7 Partners	€4 352 595	€2 788 000	2010-05-01 to 2013-04-30	€1 450 865
POINTER Support action for evaluation and monitoring of CIVITAS plus	CIVITAS POINTER is the Support Action to support cities and the EC with the monitoring (1) evaluation (2) of the whole CIVITAS Plus action. Objectives of CIVITAS POINTER are: - Independent formal monitoring of the project deliverables and reports from the demonstration projects and provision of specialist and independent advice to the European Commission; - Independent overall cross-site evaluation of the measures taken by	FP7 – Transport	Support actions	University of Southampton	Nederlandse Organisatie Voor Toegepast Natuurwetenschappelijk Onderzoek – TNO 7 Partners	€4 328 132	€2 589 998	2008-09-15 to 2013-03-14	€961 807

Project	Objectives	Action Line	Type of Action	Uk Participants	Co-Ordinator And Partners	Total Funding	EU Funding	Duration	Annual spend
	<p>the CIVITAS Plus cities on different levels; this consists of 1) an impact evaluation, assessing achieved results in relation to the objectives and the base case (no measures) of CIVITAS Plus projects, and 2) a process evaluation, assessing achieved results and implementation processes of the CIVITAS Plus project measures in relation to the planned measures and implementation processes.</p> <ul style="list-style-type: none"> - Development of clear European-level policy recommendations on the basis of validated city results; - Dissemination of best practices on monitoring and evaluation based upon the experiences gained in CIVITAS POINTER 								
<p>POSE2IDON Power optimised ship for environment with electric innovative designs on board</p>	<p>The electric ship concept offers many benefits; among other aspects it offers flexibility of control and effectiveness of power transmission. But predominantly it enables higher energy conversion efficiency by ensuring that prime movers are effectively loaded at all times and across all operating conditions. This dominating advantage cannot be matched by mechanical transmission systems because gearboxes offer little chance of integrating a high number of prime movers in the restricted</p>	FP7 – Transport	Large-scale integrating project	<p>BMT Defence Services Limited</p> <p>Rolls-Royce Power Engineering PLC</p> <p>Converteam Technology Ltd</p> <p>University of</p>	<p>BMT Defence Services Limited</p> <p>30 Partners</p>	€21 464 230	€10 130 278	2009-01-01 to 2012-12-31	€5 366 057

Project	Objectives	Action Line	Type of Action	UK Participants	Co-Ordinator And Partners	Total Funding	EU Funding	Duration	Annual spend
	space of a ship whereas this integration is straight forward when managed electrically.			Newcastle Upon Tyne					
PRIMUS Policies and research for an integrated management of urban sustainability	The PRIMUS project has been designed to bridge the gap between research on the European level on one hand, and policy-making at (and for) the local level on the other hand. The theme chosen for this 36-months coordination action is 'sustainable urban management', thus covering the way how the various policy areas of urban development (energy/water/waste, transport, planning and design, social inclusion, etc) are integrated, rather than one of these themes in particular.	FP7 – Environment	Coordination (or networking) actions	University of Northumbria at Newcastle	ICLEI European Secretariat GmbH 4 Partners	€1 517 819	€1 221 545	2009-05-01 to 2012-04-30	€505 939
PURGE Public health impacts in Urban environments of Greenhouse gas Emissions reduction strategies	The project will examine the health impacts of greenhouse gas (GHG) reduction policies in urban settings in Europe, China and India, using case studies of 3-4 large urban centres and three smaller urban centres. Sets of realistic interventions will be proposed, tailored to local needs, to meet published abatement goals for GHG Emissions for 2020, 2030 and 2050. Mitigation actions will be defined in four main sectors: power generation/industry, household energy, transport and food and	FP7 – Environment	Small/medium-scale focused research project for specific cooperation actions dedicated to international cooperation partner countries(SI CA)	London School Of Hygiene And Tropical Medicine University College London	London School Of Hygiene And Tropical Medicine 9 Partners	€4 553 831	€3 416 332	2011-02-01 to 2014-07-31	€1 301 094

Project	Objectives	Action Line	Type of Action	UK Participants	Co-Ordinator And Partners	Total Funding	EU Funding	Duration	Annual spend
	agriculture.								
REFRESH Green Retrofitting of Existing Ships	REFRESH will address the aspects of retrofitting that are essential for improving the energy efficiency onboard. The central concept of REFRESH is the dynamic energy modelling, i.e. the simulation of the energy production, consumption and losses over time. This idea will be implemented in a decision support tool that will allow onboard and ashore personnel to monitor the performance of the ship and adopt appropriate practices as a function of its operational profile.	FP7 – Transport	Small or medium-scale focused research project	V.Delta Limited University of Strathclyde Safety At Sea Limited	V.Delta Limited 19 Partners	€4 185 988	€2 849 865	2012-03-01 to 2015-02-28	€1 395 329
RENAISSANCE Testing innovative strategies for clean urban transport for historic European cities	RENAISSANCE aims to develop a valid, reliable and integrated package of access and mobility measures for historic cities. These will make possible the rediscovery, preservation and enhancement of historic cities in Europe, together with the sustainable development of the local economy, to the benefit of visitors, residents and local business alike. RENAISSANCE brings together a group of historic/tourism cities across Europe that are in the vanguard of sustainable development.	FP7 - Energy	Collaborative project (generic)	University of The West of England Advanced Transport Systems Ltd Powabyke Ltd. Advanced Communications & Information Systems Ltd First	Municipality Of Perugia 30 Partners	€24 006 193	€14 749 681	2008-09-15 to 2012-09-14	€6 001 548

Project	Objectives	Action Line	Type of Action	UK Participants	Co-Ordinator And Partners	Total Funding	EU Funding	Duration	Annual spend
				Somerset & Avon Ltd. Bath & North East Somerset Council Smart Moves Limited T/A City Car Club MRC McLean Hazel Ltd					
SMARTBATT Smart and Safe Integration of Batteries in Electric Vehicles	The European countries are committed to keep on reducing CO ₂ emissions and slowing down the climate change. For the individual transport system, the pure electric vehicle technology powered by 'green' electricity offers a great chance for an important contribution to the protection of the environment. Resulting from low energy density of batteries and the need to offer a convenient range, the battery packs of the near future will be heavy and bulky (despite the latest advances in Li-Ion cells). The objective of SmartBatt is to develop and proof an innovative, multifunctional, light and safe concept of an energy storage system which is integrated in the pure	FP7 – Transport	Small or medium-scale focused research project	Axeon Technologies Limited Ricardo UK Limited	Österreichische s Forschungs- Und Prüfzentrum Arsenal Ges.M.B.H. 9 Partners	€3 208 079	€2 249 085	2011-01-01 to 2012-12-31	€1 604 039

Project	Objectives	Action Line	Type of Action	UK Participants	Co-Ordinator And Partners	Total Funding	EU Funding	Duration	Annual spend
	electric car's structure.								
SMARTOP Self powered vehicle roof for on-board comfort and energy saving	The concept addressed by SMARTOP is to develop an autonomous smart roof integrating solar cells (PV), energy storage systems and auxiliaries as thermoelectric (TE) climatic control, electrochromic (EC) glazing, courtesy LEDs lighting and actuators able to increase comfort and fuel economy for both fully electrical (FEV) and internal combustion engine (ICE) vehicles. SMARTOP addresses the needs of vehicle electrification integrating on board power hungry devices and matching the comfort and safety customer expectations.	FP7 – Transport	Small or medium-scale focused research project	Imperial College Of Science, Technology And Medicine	Centro Ricerche Fiat SCPA 8 Partners	€4 709 143	€2 858 791	2010-11-01 to 2013-10-31	€1 177 285
STORAGE Composite structural power storage for hybrid vehicles	Weight is a premium; any material which does not contribute to load-carrying capacity is structurally parasitic. The focus of StorAGE is an key example; energy storage. Conventional design attempts to maximise the efficiency of the individual subcomponents. A different approach is to create novel multifunctional materials that simultaneously perform more than one function, thus offering significant savings in mass & volume, or performance benefits.	FP7 – Transport	Small or medium-scale focused research project	Imperial College of Science, Technology and Medicine Advanced Composites Group Ltd	Imperial College of Science, Technology and Medicine 9 Partners	€3 374 385	€2 510 412	2010-01-01 to 2012-12-31	€1 124 795
STREAMLINE Strategic Research	STREAMLINE will demonstrate solutions for a wide range of	FP7 – Transport	Large-scale integrating	Rolls-Royce Power	Rolls-Royce Power	€10 909 434	€7 946 234	2010-03-01 to	€2 727 358

Project	Objectives	Action Line	Type of Action	UK Participants	Co-Ordinator And Partners	Total Funding	EU Funding	Duration	Annual spend
For Innovative Marine Propulsion Concepts	applications. Short sea shipping and inland waterway operation will be focussed on specifically, as they are identified as key components of transport that can provide a means of coping with the growing congestion of road and rail infrastructure and tackling air pollution.		project	Engineering PLC Lloyd's Register EMEA Scitek Consultants Ltd University of Newcastle Upon Tyne	Engineering PLC 30 Partners			2014-02-28	
SUNLIBB Sustainable Liquid Biofuels from Biomass Biorefining	SUNLIBB brings together key researchers and industrial innovators working to overcome technical barriers all along the pipeline for second generation bioethanol production. The range of research spans from feedstock improvement, through innovations in pretreatment and saccharification, the generation of added value products, especially from lignin, and innovations in fermentation.	FP7 – Energy	Collaborative project (generic)	University of York The University of Sheffield Borregaard Industries Limited North Energy Associates Limited Bioconversion Technologies Ltd	University of York 13 Partners	€4 605 086	€3 415 396	2010-10-01 to 2014-09-30	€1 151 271

Project	Objectives	Action Line	Type of Action	Uk Participants	Co-Ordinator And Partners	Total Funding	EU Funding	Duration	Annual spend
				The University of Cambridge University of Leeds					
SUPERGREEN Supporting EU's Freight Transport Logistics Action Plan on Green Corridors Issues	The purpose of SuperGreen is to promote the development of European freight logistics in an environmentally friendly manner. Environmental factors play an increasing role in all transport modes, and holistic approaches are needed to identify win-win solutions. SuperGreen will evaluate a series of green corridors covering some representative regions and main transport routes throughout Europe. Among the green technologies considered may be novel propulsion systems, alternative fuels, cargo handling technologies, new terminal technologies or novel concepts relevant for the multimodal green corridors.	FP7 – Transport	Coordination (or networking) actions	The University of Newcastle Upon Tyne	National Technical University of Athens 22 Partners	€3 453 746	€2 634 698	2010-01-15 to 2013-01-14	€1 151 248
SUPERHUB Sustainable and PERSuasive Human Users moBility in future cities	The SUPERHUB project aims at realizing a new services mobility framework supporting an integrated and eco-efficient use of multi-modal mobility systems in an urban setting. SUPERHUB provides a user-centric, integrated approach to multi-modal smart urban mobility systems,	FP7 – ICT	Collaborative project (generic)	Game2growth Ltd The University of Aberdeen	GFI Adeliior NV 19 Partners	€9 900 372	€7 000 000	2011-10-01 to 2014-09-30	€3 300 124

Project	Objectives	Action Line	Type of Action	UK Participants	Co-Ordinator And Partners	Total Funding	EU Funding	Duration	Annual spend
	through an open platform able to consider in real time various mobility offers and provide a set of mobility services able to address user needs, promote user participation and to foster environmental friendly and energy efficient behavioural changes.								
TARGETS Targeted Advanced Research for Global Efficiency of Transportation Shipping	The prime goal of TARGETS - Targeted Advanced Research for Global Efficiency of Transportation Shipping is a global analysis of the most important causes of energy consumption on board of cargo ships in a comprehensive and holistic approach. Having identified resistance and propulsion aspects as primary causes of energy consumption, work will be dedicated to the improvement of such characteristics. In addition, a global energy consumption simulation system will be developed to be applied during new vessel design as well as during operation.	FP7 – Transport	Small or medium-scale focused research project	Shipbuilders And Shiprepairers Association University of Newcastle Upon Tyne Safety At Sea Limited University of Strathclyde	Hamburgische Schiffbau-Versuchsanstalt Gmbh 11 Partners	€3 562 371	€2 668 391	2010-12-01 to 2013-11-30	€1 187 457
TRANSPHORM Transport related Air Pollution and Health impacts Integrated Methodologies for Assessing Particulate Matter	TRANSPHORM brings together leading air quality and health researchers and users to improve the knowledge of transport related airborne particulate matter (PM) and its impact on human health and to develop and implement assessment tools for scales ranging from city to Europe. Over four years, TRANSPHORM will	FP7 – Environment	Large-scale integrating project	University of Hertfordshire Imperial College Of Science, Technology And Medicine Institute Of	University of Hertfordshire 21 Partners	€9 225 158	€6 915 553	2010-01-01 to 2013-12-31	€3 075 052

Project	Objectives	Action Line	Type of Action	UK Participants	Co-Ordinator And Partners	Total Funding	EU Funding	Duration	Annual spend
	aim to develop and implement an integrated methodology to assess the health impacts of PM air pollution covering the whole chain from emissions to disease burden.			Occupational Medicine					
ULYSSES Ultra Slow Ships	With climate change coming to the forefront of society's perception, there is increasing pressure on all industries to CO ₂ emissions through increased efficiency and the maritime industry is no exception. The objective of ULYSSES is to demonstrate, through a combination of ultra slow speeds and complementary technologies, that the efficiency of the world fleet can be increased to a point where the following CO ₂ targets are met : 'Before 2020, reducing greenhouse gas emissions by 30% compared to 1990 levels. 'Beyond 2050, reducing greenhouse gas emissions by 80% compared to 1990 levels. ULYSSES focuses on bulk carriers and tankers as these ship types produce 60% of the CO ₂ from ocean-going vessels .	FP7 – Transport	Small or medium-scale focused research project	University of Newcastle Upon Tyne	Bureau Veritas-Registre International De Classification De Navires Et D Aeronefs SA 13 Partners	€3 688 233	€2 603 578	2011-01-01 to 2013-12-31	€1 229 411
URGENCHE Urban Reduction of GHG Emissions in China and Europe	In URGENCHE, a team of internationally recognised scientists in the areas of health risk assessment, urban energy demand and supply scenarios, urban planning, environmental science and epidemiology - in close collaboration with city partners in both Europe and	FP7 - Environment	Small/medium-scale focused research project for specific cooperation actions	University of Exeter Institute Of Occupational Medicine	University of Exeter 17 Partners	€4 652 549	€3 499 993	2011-09-01 to 2014-08-31	€1 550 849

Project	Objectives	Action Line	Type of Action	UK Participants	Co-Ordinator And Partners	Total Funding	EU Funding	Duration	Annual spend
	China - develops and applies a methodological framework for the assessment of the overall risks and benefits of alternative greenhouse gas (GHG) emission reduction policies for health and well-being. These GHG reduction policies may affect public health in various ways, such as the choices made regarding the selection of fuels and means for space heating and transport, building codes to improve thermal efficiency, or urban development and zoning.		dedicated to international cooperation partner countries(SI CA)						
WIDE-MOB Building blocks concepts for efficient and safe multiuse urban electrical vehicles	The 3-year WIDE-MOB project will deliver: - A prototype and demo vehicle for urban mobility integrating the proposed innovative concepts. - Guidelines for the developed concepts to be widely applied to most EVs and HEVs architectures thus generating IPR and knowledge/experience upon which to build a world-leading EU position to track and exploit the global uptake of electrical mobility.	FP7 – Transport	Small or medium-scale focused research project	University of Sheffield	Centro Ricerche Fiat SCPA 7 Partners	€3 882 841	€2 610 000	2010-12-01 to 2013-11-30	€1 294 280

9. International Initiatives

[Return to Top](#)

There are four IEA Implementing Agreements linked to motor vehicles and the UK participates in three. The influential MIT-based International Motor Vehicle Programme has links with a number of UK

researchers. IMVP is largely focused on manufacturing issues, but does address environmental concerns.

Table 9.1: International Activities

Name	Type	Description	UK Contact Point
Advanced Motor Fuels	IEA Implementing Agreement	<ul style="list-style-type: none"> provides an international platform for co-operation to promote cleaner and more energy efficient fuels and vehicle technologies 	Not participating
Advanced Materials for Transportation	IEA Implementing Agreement	<ul style="list-style-type: none"> promote the application of advanced materials in transportation technologies 	Prof Alan Wheatley Universal Materials Testing University of Sunderland & Dr. Mark G. Gee Division of Engineering and Process Control National Physical Laboratory
Hybrid and Electric Vehicles	IEA Implementing Agreement	<ul style="list-style-type: none"> Produces and disseminates balanced, objective information about advanced electric, hybrid, and fuel cell vehicles. 	Mr. Michael Hurwitz Office for Low Emission Vehicles (OLEV) Great Minster House 76 Marsham Street, London, SW1P 4DR, United Kingdom
Emissions Reduction in Combustion	IEA Implementing Agreement	<ul style="list-style-type: none"> studies for improving the efficiency and fuel flexibility of automobile and truck engines improving the performance of industrial furnaces studies in emissions formation and control mechanisms and in fuel injection and fuel/air mixing investigations of the fundamental physical phenomena relevant to the combustion process 	Professor Douglas Greenhalgh Executive Dean and Pro Vice-Chancellor of the School of Engineering and Built Environment Glasgow Caledonian University

International Motor Vehicle Programme	MIT-based research consortium sponsored by business and others	IMVP researchers engage with managers and executives to generate knowledge and insight that enable the automotive industry to Provide better products and services, Navigate a challenging business environment, and Balance mobility needs with environmental concerns. Since 1979, IMVP has mapped lean methodologies, established benchmarking standards, and probed the entire automotive value chain.	UK Researchers are: Prof Andy Graves , Bath Management School; Dr. Mahrukh Doctor , Lecturer in Faculty of Politics and International Studies, University of Hull
Transportation Research Board	International network of transport academics and professionals	A division of the US National Research Council, which serves as an independent adviser to the federal government and others on scientific and technical questions of national importance. The mission of the Transportation Research Board is to promote innovation and progress in transportation through research. Facilitates the sharing of information on transportation practice and policy by researchers and practitioners. Stimulates research and offers research management services . Provides expert advice on transportation policy and programs. Disseminates research results and encourages their implementation. Manages cooperative research. Operates an on-line computerized file of transportation research information. Hosts an annual meeting – details of 2012 meeting	
International Transport Forum Global Fuel Economy Initiative	Intergovernmental organisation with 53 member countries	It evolved from the European Conference of Ministers of Transport in 2006/7. The work of the International Transport Forum is underpinned by economic research, statistics collection and policy analysis. Leading academics, regulators and government economists are regularly engaged in debate in the Research Centre's roundtables on critical issues for transport policy. The Research Centre also maintains a range of statistics and indicators on transport, as well as specialised databases. However, Energy is not a specific topic area and much of the focus is on economic competitiveness and broader sustainability issues. However, the ITF is a founding partner (along with UNEP and IEA) of the Global Fuel Economy Initiative which seeks to promote further research, discussion and action to improve fuel economy worldwide. The 3 core activities of the GFEI are: <ol style="list-style-type: none"> 1. data development and analysis of fuel economy potentials by country and region; 2. support for national and regional policy-making efforts; 3. outreach and awareness raising to stakeholders (e.g. vehicle manufacturers); 	Global Fuel Economy Initiative 60 Trafalgar Square London WC2N 5DS United Kingdom +44 (0)207 930 3882 (t) +44 (0)207 930 3883 (f) info@50by50campaign.org

