

# East Midlands Transport Equipment Sector Strategy

**A strategy prepared by *emda***

October 2007

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***East Midlands Transport Equipment  
Sector Strategy***

***October 2007***

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## 1 Introduction

### 1.1 Sector strategies to achieve Regional Economic Strategy objectives

As part of the 2005 review of its Regional Economic Strategy (RES), the East Midlands Development Agency identified four key sectors that can make a particularly significant contribution to the drive to increase productivity and competitiveness in order to achieve the objectives of the RES. The four sectors are:

- Transport equipment
- Healthcare
- Food and drink
- Environment

It was recognised that targeted policy interventions in these priority sectors can greatly enhance the contribution they can make, interventions in areas such as innovation, focused business development, sector networks, supply chain development and skills. The published evidence base for the RES highlights the importance of sectorally targeted intervention if the productivity gap is to be closed:

[There are] two alternative ways of achieving RES objectives . . . . The 'All Sectors' scenario is based on across the board increases in productivity by sector while the 'Target Sectors' scenario is based on closing the productivity gap through productivity improvements in those four sectors – *transport equipment*, Food & Drink, Construction and Health – that have been identified as regional priorities in the new RES.

By 2014 the 'Target Sectors' scenario will have generated £14.1 billion of additional GVA over and above the baseline scenario. The figure for the 'All Sectors' scenario is lower, at around £11 billion of additional GVA. This suggests that returns are greater when interventions are targeted and build upon existing comparative advantage.<sup>1</sup>

### 1.2 Sector strategy for transport equipment

Within the transport equipment sector, the presence in the region of significant parts of internationally recognised aerospace and motorsport clusters had been identified as priorities in the previous RES, *Destination 2010*. *emda's* strategic shift from focusing on clusters to sector-based policy requires a fresh approach to these industries and to the others that comprise the transport equipment sector. This document is the sector strategy for transport equipment in the East Midlands for the years from 2007. It has been developed by *emda* in partnership with the Midlands Aerospace Alliance, Motorsport Development UK, the Derby and Derbyshire Rail Forum and the East Midlands Business Sector Alliance, with input from the newly formed Midlands Marine Alliance.

Behind this document are individual strategies for the different transport equipment industries, available from *emda* or the sector organisations listed above.

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<sup>1</sup> Intelligence East Midlands. The East Midlands in 2006: a statistical portrait of the region, Section 2, pages 106 & 107.

## **2 The significance of the transport equipment sector to the East Midlands economy**

The economic sector “*transport equipment*” is a statistical construct rather than an identifiable industry or cluster, comprised of Standard Industrial Classification (SIC) codes 34 and 35. This encompasses industries including automotive, motorsport, aerospace, rail and marine.

The published evidence base for the RES revealed the significance of the transport equipment industries to the East Midlands economy as the best performing of all the sectors in the analysis undertaken to identify candidate sectors for support over the lifetime of the new RES.<sup>2</sup>

### **2.1 Scale**

Approximately 38,000 people work in the transport equipment sector in the East Midlands.<sup>3</sup> This is one of the larger manufacturing sub-sectors in the region, accounting for 3.5% of the region’s economy and 1.9% of employment in the region in 2004. An output location quotient of 1.9 shows that this sector is much more significant to the East Midlands than it is to the national economy as a whole.

### **2.2 Productivity**

Levels of productivity in the East Midlands are estimated to be about one third higher than the national average. Transport equipment has the highest productivity, measured by Gross Value Added (GVA) per employee, of any sector in the region.

### **2.3 Growth prospects**

Output growth in the East Midlands (29% for the period 2004-14) is forecast to be higher than the national average (around 8%). A small fall in employment is forecast, though this fall is not as great as that expected for the UK.

### **2.4 Employment quality**

Transport equipment is a high-quality employment sector, with average annual earnings almost a third above the East Midlands average in 2004.

### **2.5 Strategic significance**

There were a significant number of large employers (more than 30) in this sector in the East Midlands in 2003. The sector encompasses the aerospace and motorsport presence in the region, which are parts of internationally recognised clusters and which were identified as regional priorities in the previous RES, *Destination 2010*.

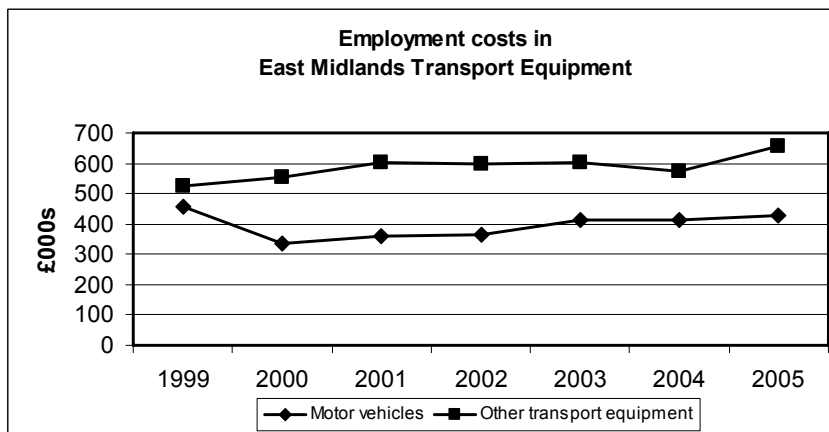
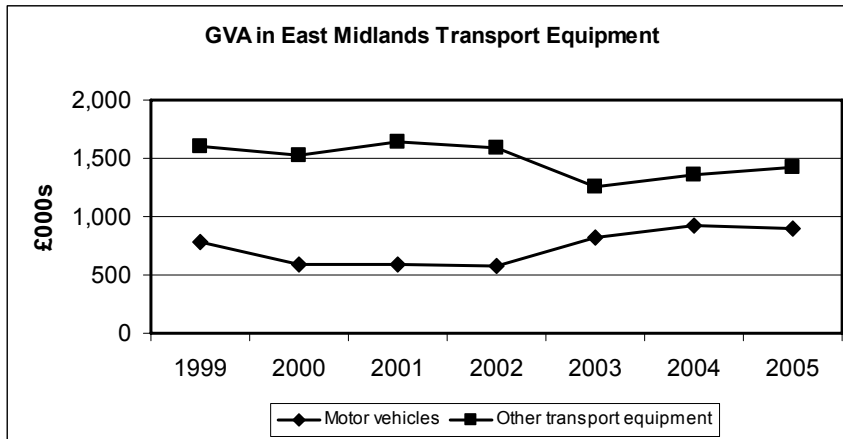
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<sup>2</sup> The full statistical table is reproduced in the Appendix, below. See Intelligence East Midlands. [The East Midlands in 2006: a statistical portrait of the region](#), Section 2.

<sup>3</sup> This definition captures the core of the transport equipment sector’s industries but not large parts of the supply chains which are classified under different SIC codes, nor ancillary industries such as rail infrastructures, airports, or vehicle retail and repair operations.

### 3 The transport equipment industries

Published statistical data from the Office of National Statistics identify “motor vehicles” (SIC code 34) and “other transport equipment” (SIC code 35). The most recent published data is for 2005. The charts below indicate that “other transport equipment” is more significant than motor vehicles in the East Midlands. Other transport equipment is largely comprised of the aerospace industry.<sup>4</sup>



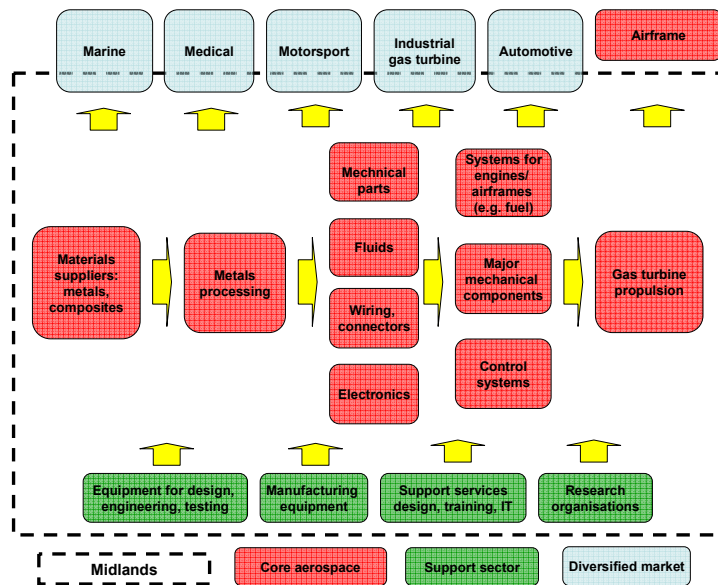
*emda* has specifically identified five component industries within the transport equipment sector: automotive, motorsport, aerospace, rail and marine. Automotive and motorsport companies are allocated to SIC code 34 (motor vehicles). Aerospace, rail and marine companies are allocated to SIC code 35 (other transport equipment). Research carried out by *emda*, the Midlands Aerospace Alliance and Motorsport Development UK as part of earlier cluster research revealed the prominent characteristics of aerospace and motorsport in the region; less research has been undertaken on automotive, rail and marine. The key features of each of these industries are described below, along with best estimates of relative size measured by employment.<sup>5</sup>

<sup>4</sup> The post 9/11 recession in aerospace accounts for the GVA decline in 2003.

<sup>5</sup> Compatible data are not available.

### 3.1 Aerospace

The UK has the second largest aerospace industry in the world, after the United States. The East Midlands is an important aerospace region in the national context, accounting for approximately 15% of the UK industry by value and employment. The region is an integral part of an overarching aerospace cluster which stretches across East and West Midlands through integrated supply chains, common technologies, and shared challenges (see chart).



**Structure of Midlands aerospace cluster**

The Midlands as a whole is strongly focused on civil aerospace markets, with more than three quarters of sales going to the civil sector. The core technology competency of the Midlands aerospace cluster is systems that power aircraft:

- gas turbine and other aircraft propulsion systems
- electrical, mechanical, hydraulic, pneumatic and electronic systems that control the moving parts of aircraft and their engines
- specialist metal and composite materials that enable these systems to perform with precision in exacting environments
- specialist engineering design services, factory equipment and tooling

Within the Midlands aerospace cluster, the East Midlands hosts Rolls-Royce’s main civil aircraft engines business. Other key aerospace players in the region include Alstom Aerospace, Thales, SPS Aerostructures and Meggitt (Dunlop Bestobell). There are six major university-industry aerospace technology centres located at Nottingham, Loughborough and Leicester Universities. There is also a significant aerospace supply chain. In total, the industry employs approximately 25,000.<sup>6</sup> It is estimated that aerospace accounts for 60% of East Midlands employment in transport

<sup>6</sup> This figure is based on MAA survey data. It encompasses more of the industry supply chain than the SIC code figures, but unlike the SIC figures it excludes employment in non-aerospace work at diversified firms that are classified as aerospace companies.



equipment. Aerospace is principally located along the M1 corridor in Nottinghamshire, Derbyshire and Leicestershire.

### *3.2 Motorsport*

The UK's teams, engineering firms and supporting services have dominated global motorsport for many years and remain at the forefront of the industry globally. The strength, scale and diversity of the industry are not replicated anywhere else in the world. The manufacturing aspects of the motorsport industry are particularly concentrated in a geographical cluster now often referred to as "Motorsport Valley" – an area that includes the East Midlands, particularly Northamptonshire, as well as parts of the West Midlands, East and South East of England.

The inter-dependence of the many companies and organisations mean that motorsport in the region cannot be considered or effectively developed in isolation. However, the motorsport industry in the East Midlands does have distinctive characteristics and strengths.

- World-class engine constructors. Northampton is home to Cosworth, the most successful Formula 1 engine constructor to date, Mercedes Benz High Performance Engines, supplier to McLaren F1, Ilmor Engineering which has powered 166 Indycar wins (to end of 2006) and Mahle Powertrain. The high performance engineering supply chains of these companies are deeply rooted in the surrounding area.
- Formula One teams. Two of the seven UK-based Formula One teams are based in the East Midlands: Honda F1 in Brackley; and Spyker MF1 at Silverstone. The supply chains of these teams and others close by in neighbouring regions are part of the region's strength.
- World-Class venues. Two international motorsport venues are located in the East Midlands: Silverstone; and Donington Park. The region is also home to Rockingham Speedway, Mallory Park, Cadwell Park and Santa Pod drag racing strip.
- Academia and R&D. Academic provision ranges from the National College for Motorsport offering NVQ level one in motorsport engineering upwards to foundation degrees in Motorsport and High Performance Engineering at Northampton University and postgraduate qualifications in Automotive Engineering at Loughborough University.

The motorsport sector's place in the transport equipment sector is principally due to its position at the high-performance end of the automotive industry. Many automotive primes and component manufacturers participate directly in motorsport as a means of product development and marketing or engage with specialist engineering and motorsport firms to do this on their behalf. Motorsport draws on the materials and methods of high performance engineering, sharing these with sectors such as aerospace and marine. The excitement of motorsport inspires people to take up education and careers in engineering, to the benefit of the transport equipment sector as a whole.

There are approximately 5,000 jobs in East Midlands motorsport R&D and manufacture, with many others related to ancillary activities like the venues.

### *3.3 Automotive*

The automotive industry remains an important industry in the national context. It has received less attention as a potential key industry in the East Midlands, perhaps overshadowed by the West Midlands where the automotive sector has been the principal industrial driver. Many East Midlands companies are believed to participate in automotive supply chains linked to other UK regions including the West Midlands. However, since 1995 Toyota has made significant investments in the region. As the neighbouring automotive industry has suffered from a period of relative decline Toyota has continued to invest.

Some of the region's automotive strengths are linked to motorsport. Companies such as Ilmor Engineering and Mahle Powertrain apply expertise developed in motorsport to high performance automotive applications. Several vehicle manufactures have established demonstration and sales facilities at circuits in the region. Automotive engineering expertise in the region's universities includes motorsport as the industry's cutting edge, notably at Loughborough. The university is also home to Cenex, the UK's first Centre of Excellence for low carbon and fuel cell technologies.

The automotive sector is believed to employ an estimated 8,000 people in addition to those in motorsport -- approximately 5,000 of whom work at Toyota.

### **3.4 Rail**

The East Midlands is at the hub of the UK rail network and the rail cluster includes businesses that are active in all aspects of rail services for the UK and global markets. Unique points include a presence in depth of globally significant rail consultancies and service providers, a national centre for rail systems development, significant maintenance and infrastructure companies as well as a world-class component supply base feeding rolling-stock and infrastructure industries.

The East Midlands is a significant rail region within the national context, accounting for approximately 25% of the UK industry, with integrated supply chains and common technologies that bridge national and international borders. A significant part of the industry in the region is concentrated in the Derby and Derbyshire area. This rail cluster is strongly focused on industry growth markets in rolling stock and infrastructure with core competencies in consultancy, infrastructure engineering and rolling stock supply. A general segmentation of these competencies within the region reveals:

- Rolling stock and high-reliability component manufacturing supply chains
- Infrastructure design and construction
- Rail engineering consultancy and project management
- Rail vehicle leasing and train operation companies

In total, over 250 East Midlands supply chain companies contribute their capabilities to the UK and global rail in a business environment that fosters the highest levels of innovation. The rail industry's supply chain roots extend deep into the Midlands, with the Derby cluster having a world-renowned reputation for advanced rail engineering.

It is estimated that 7,000 jobs are due to rail industry employment in the region.<sup>7</sup>

### **3.5 Marine**

Leisure marine firms in the Midlands as a whole represent one-eighth of the UK industry's turnover, and the industry includes a successful sector manufacturing and repairing boats for use at sea and on inland waterways and components for these. Significant businesses include Fairline and Cooney Marine. In total, 625 companies work in the leisure marine sector, employing some 2,300 people.<sup>8</sup>

Leisure marine firms are experiencing a period of rapid growth at present. While the industry relies on traditional skills it is also adopting high performance materials and technologies that are shared by other transport equipment manufacturers, such as composites and high performance engines.

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<sup>7</sup> This statistic is not compatible with those for other transport industries as it includes infrastructure companies that are not included in the aerospace, automotive and motorsport statistics. Compatible data is not available.

<sup>8</sup> This figure is not compatible with those for other transport industries as it includes significant employment in tourism, marinas and other firms associated with the utilisation of the equipment.

## 4 East Midlands transport sector SWOT

The overall SWOT for East Midlands transport presented below is based on the analysis of the Midlands Aerospace Alliance, Motorsport Development UK, Derby and Derbyshire Rail Forum, and existing *emda* knowledge about the marine sector. The SWOT summarises the current position in terms of business development, innovation and technology, operations and supply chain performance, skills, and clustering. There are differences among the industries across the sector, but these have been smoothed out here to create indicative SWOT patterns that are broadly shared.

### Strengths

1. Global market access and reputation of key companies
2. Expertise in design, manufacturing, materials, strong research base
3. Broad range of flexible supply chains
4. Strong skills base with active labour market
5. Active regional clustering to build on

### Weaknesses

1. Weak business development strategies in supply chains
2. Fragmentary support for technology innovation
3. Deficits in operations management capability
4. Ongoing skills, capability and knowledge gaps
5. Clustering weakened by poor supply chain relationships

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### Opportunities

1. Global and inter-industry business opportunities across the sector
2. Innovation of new products and services using customer needs and major national programmes as drivers
3. Participation in industry supply chain improvement programmes
4. National Manufacturing Skills Academy can focus skills support.
5. Application of best clustering practice within region and from other regions.

### Threats

1. Developed economy and emerging market competitors are growing threat with globalisation.
2. Overseas R&D, development support from governments strategically targeting these industries.
3. Lean global competitors address QCD with increasing effectiveness for superior performance.
4. Low cost of overseas labour combined with regional skills and recruitment shortages.
5. Collective failure to plan 'route map' to renewing Midlands cluster – while competitor regions invest in agreed strategies.

## 5 *emda* policy background

Recent *emda* policy intervention across these transport industries varies. Aerospace and motorsport were both identified in the previous cluster development framework, under the umbrella of advanced engineering. The agency has more recently started to work with the marine sector. The new broad transport sector approach will permit all the associated industries, including rail and automotive, to be researched and developed as appropriate, including benchmarking and learning from effective interventions in the other transport industries. Going forward, the strategy will need to recognise that there are benefits to incorporating these new sectors, but there are also risks if some industries are included solely on the basis of the SIC system while on the same basis significant and linked regional industries are excluded. An example of the latter is power generation, which is closely connected to aerospace through shared technologies.

## 5.1 Aerospace

*emda* has supported the aerospace cluster since 2001, through:

- the *emda*/Rolls-Royce Task Force to address the impacts of the post 9/11 downturn in 2001-02
- funding support for the Midlands Aerospace Alliance, in a formal partnership with Advantage West Midlands (AWM) and under the umbrella of the 2003 Midlands Aerospace Cluster Strategy (MACS), 2004-07
- the Lift-Off programme, run by the Manufacturing Advisory Service to boost productivity and competitiveness in the aerospace supply chain (2002-4) – also coordinated with the West Midlands
- investments to support industry-related research at university centres

More recently, *emda* has agreed to support the national Environmentally Friendly Engine technology development programme through £6m capital funding for Rolls-Royce.

The industry-led Midlands Aerospace Alliance has set out a strategic plan for the Midlands aerospace industry as a whole, which is being implemented in the West Midlands with support from Advantage West Midlands. Aligning support for the cluster across the region's two RDAs remains a challenge, and the MAA is therefore working with *emda* to ensure that the plan is implemented Midlands-wide.

## 5.2 Motorsport

*emda*'s substantial support for motorsport is channelled through Motorsport Development UK, a public private sector partnership with AWM, EEDA, SEEDA and the DTI. That support is delivered through five programmes that are seen as key to the future competitiveness of the industry:

- Motorsport Academy – matching the industry's skills needs with provision
- Learning Grid – inspiring young engineers
- Business Development – driving innovation and competitiveness
- Energy Efficient Motorsport (EEMS) – developing automotive technology on the race track
- Widening participation - encouraging more participants to enter the sport

As part of a five-year medium-term agreement with the DTI and partner RDAs AWM, SEEDA and EEDA, Motorsport Development UK's funded business plan continues until March 2009.

*emda* has also supported the construction of the Silverstone Innovation Centre in partnership with the British Racing Drivers' Club, opened in 2006.

## 5.3 Rail

*emda* has not previously supported the rail industry in the East Midlands through a focused strategy. However, *emda* has lent its support to a proposed UK Rail Centre to be built in Derby, to receive and entertain foreign trade missions, provide facilities for businesses to meet and exchange ideas, and promote the whole UK rail industry in one location.

## 5.4 Automotive

*emda* has not previously identified the automotive industry as a target for specialised support.

## 5.5 Marine

The East Midlands did not have a specific marine industry strategy until 2006, when *emda* started to work with the British Marine Federation to support the establishment of a Midlands Marine Alliance, modelled in part on the Midlands Aerospace Alliance. This was launched in early 2007.

# 6 Strategic intervention to develop the transport equipment sector

## 6.1 The challenge

The *emda* RES evidence base research forecasts a baseline scenario in which productivity in the transport equipment sector rises by almost 30% between 2004 and 2014. Under the “target sectors scenario,” RES implementation would be required to raise this to need to over 37%. Under the “all sectors scenario,” RES implementation would be required to raise this to 33% (see table below).

**TABLE 6**  
**Growth in East Midlands productivity advantage sectors 2004-14 (%)**

	East Midlands			UK
	Baseline scenario	Target Sectors scenario	All Sectors scenario	
Agriculture, Forestry & Fishing	-9.0	-5.7	-6.8	-1.9
Minerals	11.3	13.5	13.9	2.0
Metals	4.1	5.8	6.8	-1.8
Transport Equipment	29.6	37.4	33.0	7.7
Food & Drink	30.1	44.1	33.5	8.7
Construction	27.4	38.1	30.3	23.5
Wholesaling	21.3	22.4	23.9	23.0
Hotels & Catering	28.7	29.7	30.6	22.3
Public Administration & Defence	-6.9	-6.6	-6.2	-4.9

Source: *emda*/Experian Scenario Impact Model, July 2005, March 2006

Under either scenario, a substantial commitment and investment is required by *emda*, along with other regional partners, with concerted efforts to make the required improvements above the baseline, which amount to a 2.6% to 6% improvement in productivity over the ten year period due to RES implementation activities.

It will also be vital to highlight and address at an early stage a number of potential challenges to successful policy support for the transport industries, in particular:

- their prevailing organisation into supply chains, which makes them ripe for cluster approaches but also means that one-to-one support can often have very limited overall impact
- in some industries, notably aerospace (and probably automotive), most SMEs are marginal from the viewpoint of strategic intervention

- the long-term nature of development and manufacturing programmes, measured in decades, in industries such as aerospace and rail.

## 6.2 The implementation plan

Detailed implementation plans for aerospace and motorsport, together with initial plans for rail and marine, have been developed as part of the transport strategy development process. *These are contained in a separate full document.* The following table unifies these plans for the transport sector as a whole, in terms of the strategic requirement and the required policy intervention. This table is itself drawn from an additional and substantial planning document that also sets out rationales in terms of market failure, the RES action plan, ownership, and the roles of private and public sector partners in delivering the plan.

Strategic requirement	Strategic intervention
<b>6.2.1 Business Development</b>	
Supply chain sector business strategy capability	Sector-focused business strategy development
Global markets understand Midlands transport sector capability	Global marketing of Midlands transport equipment capability
Pro-active restructuring of supply chains	Industry market consortium programme
Midlands takes advantage of transport equipment inward investment opportunities	Transport inward investment capability
<b>6.2.2 Innovation and technology</b>	
Knowledge of future technology developments must be diffused into supply chain	Diffuse knowledge and information about innovation and technology opportunities into supply chain
Supply chain participation in technology development programmes	Regional investment to support supply chain insertion in industry programmes
Supply chain access to world-class specialist technology innovation centres	Region invests in centres of technology excellence with strong bilateral industry links
Manufacturing process innovation	Embed manufacturing innovation in supply chain
Regional transport technology strategy	Ongoing strategy alignment
<b>6.2.3 Skills</b>	
Industry articulates current and future demand for skills and training	Create skills demand signal
Training providers offer clear menu of appropriate skills and training support	Transparent and simple supply menu
Excellent people, skills, training planning within companies	Workforce planning
Companies and employees have strong people investment programmes	People investment
Providers are fit for purpose	Excellent skills and training supply side
Critical skills gaps are being addressed	Critical skills gaps are addressed
Key skills are being retained and transferred between companies and people	Skills retention
Region has strategy to assess and articulate medium-term future skills needs	Skills strategy

Image of industry is attractive to prospective entrants	Improve industry image
Human resource management and working environment improvements appropriate to attract new generations	Improve working environment
<b>6.2.4 Productivity and competitiveness</b>	
Full comprehension of world-class standards	Creating operations improvement demand signal
Sector supply chains rapidly improve operations towards world-class standards	Intensive lean, QCD, SC21-type work
Specialised industry accreditation and certification throughout supply chain	Programme to ensure supply chain possesses required industry accreditation
Step-change improvement to communication and collaborative planning along whole supply chain	Build mutually beneficial supply chain relationships
Supply chain adopts best practice operations planning models	World class transport sector operations management
Overall Midlands regional strategy to define focuses and programmes	Strategic approach to global competitiveness
<b>6.2.5 Finance</b>	
Financial planning throughout supply chains	Financial planning for supply chain firms
Access to financial tools for global competitiveness	Targeted and appropriate financial support package for supply chain
<b>6.2.6 Infrastructure</b>	<b>TBD</b>
<b>6.2.7 Supply chain and cluster networking</b>	
Support for networking, strategy and the business development activities required for effective strategy implementation	Networking, knowledge and engagement deepening industry engagement
Shared vision and scenarios for long-term future of transport sector	Regional strategy development for transport sector
Strategy that is implemented by all strategic delivery partners	Partners collaborate to ensure implementation

## 7 Cross-cutting policy intervention

*emda* sector strategy cross-cutting themes can contribute to the effective delivery of the transport sector strategy.

### 7.1 Materials strategy

East Midlands materials strengths can play a strong supportive role, as a number of key regional materials capabilities are relevant to the development of transport technologies.

Regional Materials Capability	Transport Technologies
<i>High</i>	
Aggregates and Minerals	No
Composites	Yes
Technical Textiles	Yes
<i>Medium</i>	
Plastics	Yes
Glass	Yes
Metals	Yes
Wood, Paper	Yes
Ceramics	Yes

### 7.2 Innovation strategy

There is considerable scope for alignment between the transport sector strategy and the *Innovation East Midlands* Regional Innovation Strategy and Action Plan, with its proposed Innovation Networks (iNets), as a delivery mechanism for a number of the key elements of the transport sector plan related to innovation.

Innovation and Technology Strategy for East Midlands Transport Sector	Objectives for East Midlands Transport Sector Innovation and Technology Development	Aligned themes of the East Midlands Regional Innovation Strategy and Action Plan
<b>Knowledge and information: to diffuse innovation and technology opportunities into the supply chain</b>	Knowledge of future technology developments is diffused into supply chain <ul style="list-style-type: none"> <li>▪ Create accurate updated Midlands transport sector R &amp; D capabilities maps</li> <li>▪ R&amp;T capabilities fully utilised to market Midlands transport sector</li> <li>▪ Knowledge of new technologies diffuses down supply chains as early as possible</li> <li>▪ All companies are aware of and able to link to appropriate sources of regional technology expertise</li> <li>▪ Midlands is networked in to national technology resources</li> <li>▪ All companies are aware of and able to access national (e.g. DTI, EPSRC) and European (e.g. Framework 7) funds and relevant regional resources</li> </ul>	<ul style="list-style-type: none"> <li>▪ Knowledge Exchange</li> </ul>



<p><b>Deliver business support programmes: to promote investment in world-class transport sector innovation and technology strengths</b></p>	<ul style="list-style-type: none"> <li>▪ National and European technology programmes are supported with regional key investments</li> <li>▪ Capable supply chain companies participate in national and European programmes</li> <li>▪ Region invests in centres of technology excellence with strong bilateral industry links</li> <li>▪ Manufacturing innovation is embedded into supply chain</li> <li>▪ High level of participation by Midlands transport sector companies and organisations in national and global transport sector technology development programmes</li> <li>▪ Significant investments in private and public technology centres of excellence in Midlands of highest value to Midlands transport sector</li> <li>▪ Maximum regional gearing from national programmes with significant activity in the region.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Innovation Support for Business</li> <li>▪ Creating the Environment for Innovation</li> <li>▪ Fostering Enabling and Emerging Technologies</li> </ul>
<p><b>Strategy: to develop the innovation and technology that will deliver the best opportunities in the global market</b></p>	<ul style="list-style-type: none"> <li>▪ Clear long-term agenda for Midlands transport sector I &amp; T development, private and public, within regional, national and EU frameworks.</li> <li>▪ Work with <i>emda</i> and partners to ensure closest possible synergy between <i>emda</i> sector innovation strategy for transport and iNet.</li> </ul>	<ul style="list-style-type: none"> <li>▪ (Strategic planning aspects of the above)</li> </ul>

## 8 Alignment across the Midlands

Each of the industries that forms part of the East Midlands transport sector is an integral part of a broader geographical cluster incorporating the West Midlands (and in some cases other contiguous regions). For the East Midlands transport sector strategy to be effective, it is important that there is alignment between the East Midlands strategy and sector and cluster strategies in those regions.

1. The Midlands Aerospace Alliance is a vehicle for this alignment for the aerospace sector, and has been playing this role since its 2003 foundation, as formally set out in the *emda*/AWM Midlands Aerospace Alliance MoU.
2. Motorsport Development UK coordinates national policy support in an *emda*-led partnership with West Midlands, the East and South East of England and DTI.
3. The new Midlands Marine Alliance holds the prospect of supporting coordination for the marine industry, again initiated by *emda* support.

4. Advantage West Midlands has a track record of substantial policy support for the automotive sector which could be built on to learn lessons and develop aligned policy interventions for the East Midlands.
5. AWM has established a rail industry cluster opportunity group (COG), and links between the work of this industry-led group and the East Midlands should be fostered.

Finally, the Midlands Way initiative could provide a structural framework to encourage further policy alignment with the aim of producing more effective sector and cluster intervention activities.

## **9 The role of the sector organisations**

Industry-led sector and cluster based organisations can play a pivotal role in the effective planning and delivery of the East Midlands transport sector strategy. The Midlands Aerospace Alliance and the Derby and Derbyshire Rail Forum are members of the East Midlands Business Sector Alliance. Sector organisations can make a number of significant contributions:

1. as membership-based bodies, with a full network of companies, expertise and knowledge about their sectors;
2. as effective support delivery organisations for specialised policy interventions, bringing knowledge of markets and innovation especially, and also productivity and skills agendas within their sectors, and trusted by their members -- thus bringing "routes to market" for intensive specialised support
3. as a unified voice for their industry, a strategic partner for *emda* and other regional and sub-regional public sector bodies, and a bridge to cross-regional alignment and coordination

## 10 Appendix: the transport equipment sector plan detailed

The following table shows the framework for the detailed version of the transport sector plan. The further tables detail the *strategy* part of the plan.

### 10.1 Framework

Strategy	NEED	STRATEGIC INTERVENTION	MARKET FAILURE	RES PRIORITY ACTION	OWNER	Partner tactical role	Sector groups	Private sector role and inputs	UKTI	British Midlands	EIM INET	Cross-cutting materials sector	Skills agenda (partners TBD)	MAS	New Technology Initiative (NTI)	Generic business support	Motorsport Development UK	Aligned West Midlands actions	National Industry bodies	Key support partner activities	Budget existing	Requirement for sector programme	Budget sector programmes	Intervention starts
	Business Development																							
Innovation and technology																								
Skills																								
Productivity and competitiveness																								
Finance																								
Infrastructure																								
Supply chain and cluster networking																								

10.2 Business development

Strategy -->				
NEED	STRATEGIC INTERVENTION	MARKET FAILURE	RES PRIORITY ACTION	OWNER
<b>Business Development</b>				
Supply chain sector business strategy capability	Sector-focused business strategy development	Supply chain managerial myopia	2a, 2b, 2d, 2e, 2h	Sector groups
Global markets understand Midlands transport sector capability	Global marketing of Midlands transport equipment capability	Supply chain companies cannot individually organise global marketing	2a, 2b, 2d, 2e, 2h	UKTI
Pro-active restructuring of supply chains	Industry market consortium programme	Failure to implement mechanisms at supply-chain-level to make transition from old to new structures and relationships	2a, 2b, 2c, 2e, 2h: 2b	Sector groups
Midlands takes advantage of transport equipment inward investment opportunities	Transport inward investment capability	Specialist industry knowledge is required to understand opportunities and liaise with potential inward investors.	2e	British Midlands

10.3 Innovation and technology

Strategy -->				
NEED	STRATEGIC INTERVENTION	MARKET FAILURE	RES PRIORITY ACTION	OWNER
<b>Innovation and technology</b>				
Knowledge of future technology developments must be diffused into supply chain	Diffuse knowledge and information about innovation and technology opportunities into supply chain	Poor knowledge flow and information diffusion	2c, 3d	iNet and sector groups
Supply chain participation in technology development programmes	Regional investment to support supply chain insertion in industry programmes	Market under-values major programme investment because of long-term payback	2c, 3a, 3b	Sector groups
Supply chain access to world-class specialist technology innovation centres	Region invests in centres of technology excellence with strong bilateral industry links	Supply chain companies have poor links to primes and universities for technology development and some have few capabilities	3a, 3d	iNet and InnEM
Manufacturing process innovation	Embed manufacturing innovation in supply chain	Many supply chain firms have insufficient in-depth expertise to have effective manufacturing strategies.	2c, 3b	iNet?
Regional transport technology strategy	Ongoing strategy alignment	Market does not provide for regional strategy	2c, 3a, 3b, 3d	iNet and InnEM

### 10.4 Productivity and competitiveness

NEED	STRATEGIC INTERVENTION	MARKET FAILURE	RES PRIORITY ACTION	OWNER
<b>Productivity and competitiveness</b>				
Full comprehension of world-class standards	Creating operations improvement demand signal	Variation of message confuses signal	2c, 2d, 3c	Sector groups
Sector supply chains rapidly improve operations towards world-class standards	Intensive lean, QCD, SC21-type work	Many supply chain business units do not possess the resources and expertise internally.	2c, 2d, 3c	MAS
Specialised industry accreditation and certification throughout supply chain	Programme to ensure supply chain possesses required industry accreditation	Fragmentation of standards definitions across supply chains	2c, 2d	MAS
Step-change improvement to communication and collaborative planning along whole supply chain	Build mutually beneficial supply chain relationships	Procurement power of larger customers distorts markets	2c, 2d	Sector groups
Supply chain adopts best practice operations planning models	World class transport sector operations management	Traditional practices impede required step-changes	(See also Enterprise Agenda Actions) 2c, 2d, 3c	MAS/Sector groups
Overall Midlands regional strategy to define focuses and programmes	Strategic approach to global competitiveness	Market mechanism does not define or organise strategic programmes	2c, 2d, 3c	Sector groups

## 10.5 Skills

<b>Strategy --&gt;</b>				
<b>NEED</b>	<b>STRATEGIC INTERVENTION</b>	<b>MARKET FAILURE</b>	<b>RES PRIORITY ACTION</b>	<b>OWNER</b>
<b>Skills</b>				
Industry articulates current and future demand for skills and training	Create skills demand signal	No market mechanisms articulate overall Midlands transport sector demand forecasts and communicate these to education and training providers.	1b	Sector groups
Training providers offer clear menu of appropriate skills and training support	Transparent and simple supply menu	This information is very fragmented, with no reliable information sources.	1c, 1d	National Skills Academy for Manufacturing
Excellent people, skills, training planning within companies	Workforce planning	Poor specialist human resources planning at many transport sector supply chain firms	1b	Sector groups
Companies and employees have strong people investment programmes	People investment	Supply chain firms hindered from investing in people by market environment where it is difficult to internalise the return.	1a	Sector groups
Providers are fit for purpose	Excellent skills and training supply side	Fragmented infrastructure with beacons of good practice	1c, 1d	National Skills Academy for Manufacturing, EM ESP
Critical skills gaps are being addressed	Critical skills gaps are addressed	Knowledge of critical skills gaps fragmented	1a	EM ESP
Key skills are being retained and transferred between companies and people	Skills retention	High rate of loss of key skills during periods of industry fluctuation	1a	Midlands Engineering Industries Redeployment Group
Region has strategy to assess and articulate medium-term future skills needs	Skills strategy	There is no market mechanism to develop strategy for cluster as whole.		EM ESP and Sector Groups
Image of industry is attractive to prospective entrants	Improve industry image	Few companies implement strategies to increase the attractiveness of their workplaces and careers		Sector Groups
Human resource management and working environment improvements appropriate to attract new generations	Improve working environment	(as above)	1a, 1b	TBC

### 10.6 Finance

Strategy -->				
NEED	STRATEGIC INTERVENTION	MARKET FAILURE	RES PRIORITY ACTION	OWNER
<b>Finance</b>				
Financial planning throughout supply chains	Financial planning for supply chain firms	Many issues related to traditional subcontract relationships impinge negatively on financial planning and management capabilities.	2d	TBD
Access to financial tools for global competitiveness	Targeted and appropriate financial support package for supply chain	Few supply chain companies can make the significant investments required to enter major new programmes	2d	TBD



### 10.7 Supply chain and cluster networking

Strategy -->				
NEED	STRATEGIC INTERVENTION	MARKET FAILURE	RES PRIORITY ACTION	OWNER
<b>Supply chain and cluster networking</b>				
Support for networking, strategy and the business development activities required for effective strategy implementation	Networking, knowledge and engagement deepening industry engagement	Long-standing information and coordination weaknesses in and across supply chains	2a, 2b, 2d, 2e	Sector groups
Shared vision and scenarios for long-term future of transport sector	Regional strategy development for transport sector	The market does not generate strategic vision except at national scale for large companies	2b, 2c, 2d, 2e	Sector groups and emda
Strategy that is implemented by all strategic delivery partners	Partners collaborate to ensure implementation	No market mechanism exists to coordinate overall strategy implementation and delivery for the transport sector and its industries as a whole.		Sector groups and emda

## 11 Appendix: *emda* sector strategy in the RES

Pages 83-85 of the *emda* RES:

### 11.1 *Priority sectors*

The following four sectors are likely to make the greatest contribution to the East Midlands' economy over the lifetime of the RES:

- Transport equipment
- Food & drink
- Construction
- Healthcare

The four priority sectors were selected on the basis of a number of measures that identify sectors that:

- perform strongly on productivity and /or have high quality jobs (in terms of higher wages reflecting a greater emphasis on workforce skill);
- have good prospects for growth;
- have a significant presence in the region - in absolute terms and relative to the UK.

Analysis indicates that targeted interventions will have a greater impact in terms of closing the productivity gap that exists between the East Midlands and the UK. By targeting these four sectors around £14 billion of additional GVA is generated. This compares with an additional £11 billion of GVA if intervention was spread more thinly across a greater range of sectors in the economy. This is detailed in the Economy and Productivity section of the RES Evidence Base.

### 11.2 *Sector support*

The priority sectors will require customised packages of specialist support to enable them to overcome barriers to growth and realise their full potential; it is unlikely that generic business support alone is sufficient to achieve this. Support will be directed towards an identified market failure or developmental bottleneck and will address both the shorter-term business requirements and the medium to long term innovation and development needs of the identified sectors. Market failure should not be confused with lack of demand in the marketplace. In terms of sector policy, examples are:

- uncertainty associated with rapid growth or technological change that may be deterring investment in the sector or impairing the ability of businesses to respond quickly to a market need, e.g. meeting skills requirements;
- where a limited intervention can help a sector overcome co-ordination failures (i.e. the optimal outcome requires joint working within the sector and there is no incentive for any one business to make that happen individually) e.g. networking or establishing research centres; and
- where there is incomplete information to make judgements about the prioritisation of public sector resources, and a better flow of information is needed between the sector and government, e.g. account management.

By targeting those sectors with the most significant market opportunities and removing developmental barriers to their growth, we will be in a position to maximise the return on the public sector investment in terms of increased economic output in the East Midlands. Previous strategies focused on clusters rather than sectors. This approach was based on the understanding that

sectors that exhibited clustering features were likely to make a greater contribution to the economic development of the region than those not demonstrating these features. Within the new sector policy, clustering will continue to be encouraged where there is evidence that such an approach will enhance the economic development potential of a priority sector by encouraging speedier innovation and increased competitiveness. Only a limited number of sectors exhibit clustering at present, with aerospace and motorsport (part of the transport equipment sector) identified as requiring ongoing cluster support. Importantly, businesses in those sectors that are not identified as priorities will continue to qualify for generic business support through the Integrated Business Support Network. Special measures for managing change may be needed where, for example, sectors are facing restructuring and businesses need help to diversify into priority sectors, or where action is needed to minimise the impact on local communities. Some sub-sectors have particular significance at sub-regional level - e.g. high-performance sport in Loughborough, interactive leisure software around Derby and Nottingham, and industrial design in Leicestershire. In some cases these niche sectors may benefit from customised support provided by the relevant local agencies.

### *11.3 3e priority actions: growing the region's key sectors*

Ensure that the priority sectors (transport equipment, construction, food and drink and healthcare) are considered in the implementation of other actions in the RES to support growth, address skills needs and focus on efficiency and excellence, for example:

- by ensuring skills and training providers are matching their provision to the needs of these sectors;
- by encouraging business support organisations to consider these sectors in the setting of their priorities and delivery of their services.

### *11.4 Sector selection criteria*

The RES evidence base identified target sectors by ranking them on a number of indicators and deriving an average score. The chart below shows that the top five sectors are the manufacture of transport equipment, the manufacture of food & drink, business services, construction and health. It was proposed that business services should not be considered for priority support in the new RES as it is too disparate a sector to formulate targeted policy intervention to address market failure. It was also decided that the definition of health include not only care services but also the manufacture of medical instruments and equipment and the manufacture of pharmaceuticals.

**Sector selection criteria summary for the East Midlands**

	Rank of % of Regional GVA 2004	Rank of GVA Location Quotient 2004	Rank of % Regional FTE Employment 2004	Rank of FTE Location Quotient 2004	Rank of Relative Productivity 2004	Rank of Forecast Output Growth 2004-14	Rank of FTE Employment Growth 2004-14	Rank of Productivity Growth 2004-14	Rank of Large Employers	Rank of Annual Average Gross Full Time Earnings 2004	Average Ranking Score
Transport Equipment	11	4	16	8	1	9	15	5	10	3	8.2
Food & Drink	9	3	11	3	7	8	9	14	4	18	8.6
Business Services	1	25	1	23	18	2	1	7	2	8	8.8
Construction	3	10	4	16	3	13	7	19	9	6	9.0
Health	4	16	2	17	14	4	3	15	6	20	10.1
Wholesaling	2	13	5	13	9	16	16	11	8	9	10.2
Retailing	5	17	3	21	11	7	12	9	1	25	11.1
Education	6	15	6	19	10	15	6	25	5	7	11.4
Transport	7	18	8	20	13	11	10	13	7	22	12.9
Metals	14	5	12	10	5	12	13	28	20	19	13.8
Communications	16	27	19	24	22	1	2	1	11	16	13.9
Minerals	23	1	25	4	2	17	17	17	24	10	14
Banking & Insurance	15	28	13	28	20	5	8	6	15	5	14.3
Other Services	10	24	7	22	16	6	4	21	13	26	14.9
Chemicals	17	14	24	9	26	20	23	2	18	4	15.7
Public Admin & Defence	8	21	10	26	6	24	20	29	3	11	15.8
Electrical & Optical Equipment	22	20	20	18	24	3	14	3	14	21	15.9
Hotels & Catering	13	23	9	25	8	10	5	22	19	29	16.3
Rubber & Plastics	24	7	23	5	17	18	24	8	17	24	16.7
Other Financial & Business Services	12	26	14	27	15	14	11	12	25	12	16.8
Gas, Electricity & Water	19	19	27	15	21	21	26	4	22	2	17.6
Agriculture, Forestry & Fishing	21	6	17	12	4	25	22	26	28	15	17.6
Machinery & Equipment	20	12	21	11	12	23	21	23	21	13	17.7
Other Manufacturing NEC	26	9	22	6	19	19	19	24	23	17	18.4
Other Mining	28	8	28	2	28	27	28	10	26	1	18.6
Paper, Printing & Publishing	18	22	15	14	27	26	25	20	12	14	19.3
Textiles & Clothing	25	2	18	1	25	30	30	18	16	28	19.3
Wood & Wood Products	27	11	26	7	23	28	27	16	27	27	21.9
Oil & Gas Extraction	29	30	29	29	30	22	18	27	29	23	26.6
Fuel Refining	30	29	30	30	29	29	29	30	30	30	29.6

Source: emda analysis, November 2005