

The UK Automotive Industry

Invest now

**A report prepared by
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INTRODUCTION

As the global economy recovers, albeit somewhat falteringly from the recent downturn, the UK automotive sector is very well placed to take advantage of this recovery. There is continued growth in automotive demand in emerging markets (China is now the largest automotive market in the world with a high demand for luxury cars, an opportunity which Jaguar-Land Rover in particular is well-placed to exploit) and in parallel there are significant growth opportunities for UK companies in the hybrid and electric vehicle market in particular. The high volume of conventional engines manufactured in the UK represents still further potential for suppliers as the industry applies a range of new technologies specifically designed to reduce emissions and improve fuel efficiency, such as Ford's ECOnetic and EcoBoost engine programmes. Moreover, the vehicle companies operating in the UK have a strong export record and we believe this will continue.

The "new" GM Europe intends to export Opel vehicles beyond Europe and this should in turn benefit the Vauxhall car plant at Ellesmere Port; this plant is the sole source of the Astra Sports Tourer, the vast majority of which production is exported, helping to underpin production (with the vehicles simply being re-badged as Opels for export). In the light of these positive trends and developments, suppliers of both established and new, low-carbon technologies can benefit significantly and are worthwhile recipients of bank finance.

Moreover, standing behind the industry, there is now government support for engineering and manufacturing in general which had been much less apparent until the latter days of the previous government; this support is aided by industry-wide initiatives as well, co-ordinated by the SMMT and guided by the new Automotive Council. Government support is not simply a matter of grants, but more in the form of means to make doing business here easier and facilitating R&D in emerging high technology areas. The new government recognises the importance of manufacturing to the country's economic revival and—in our view—appears to be doing more to facilitate growth in manufacturing in general than previous administrations have done.

Government support and industry-wide collaboration should enable the UK to take advantage of the export-led growth opportunities for the automotive sector which we believe will become increasingly apparent in coming years. The UK automotive sector is very well placed to take advantage of the continued growth in automotive demand in emerging markets and new growth opportunities in the hybrid and electric vehicle market in particular.



WHY INVEST NOW?

The UK automotive industry can retain and build on its position at the leading edge of the global automotive industry. But it needs the support of the financial sector. Why should the financial sector support the automotive industry? There are several reasons, which we detail in this paper, which can be summarised as follows:

- **Vehicle manufacturing in the UK is once again growing and has a strong export element:** the three largest Japanese vehicle companies have their main European manufacturing operations here and BMW, Ford and GM are heavily committed to the UK in terms of vehicle and engine production. Jaguar-Land Rover is now profitable and has the backing of the giant Tata group of India.
 - **The UK automotive sector typically generates around £50 billion in annual turnover** and generates around £10 billion in net valued-added to the economy.
 - **The automotive sector is the largest UK sector in terms of exports,** generating around £24 billion in revenue.
 - **The vehicle companies operating here are actively committed to increasing their level of UK sourcing of components,** creating new opportunities for UK suppliers. The vehicle companies have largely outsourced the production of the components which they fit – typically 65-70%, and sometimes more, of the ex-works value of a car is made by the supply chain beyond the vehicle factory's gates.
 - **The government is improving the business environment,** through helping to implement the recommendations of the NAIGT (New Automotive Innovation and Growth Team) report, supporting the establishment of the Automotive Council, helping to channel funding for new technology projects through its Technology Strategy Board and creating a much more pro-manufacturing environment than has existed.
 - **The switch to the low carbon economy,** through improvements to existing powertrains, but also the emergence of hybrid and full electric vehicles, is a development which the UK cannot afford to miss out on – but more significantly this is a development in which the UK is very much at the forefront. The UK will be the home to the production of the first volume, purpose-designed electric car to be made in Europe (the Nissan Leaf), as well as Nissan's new electric vehicle battery plant. The UK is already home to Toyota's first European-made hybrid and the industry remains hopeful that GM will shortly announce that it will make its range-extender electric vehicle, the Ampera, in the UK. A decision on this is, however, unlikely before 2013-2014. Together these and other vehicle manufacturer initiatives create a very positive environment for the underlying supply chain. This supply chain, however, cannot take full advantage of the opportunities presented without financial sector support.
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UK COMES TOP IN BUSINESS MONITOR'S LATEST BUSINESS ENVIRONMENT RANKINGS

In addition to the UK's positive automotive investment environment deriving from the vehicle companies' commitment to the UK, it is worth noting that the UK has come out top in Business Monitor's recent country rankings of the Business Environment in Europe. Indeed the UK comes almost 4 points clear of Germany, and significantly ahead to the many countries in Eastern Europe which have attracted so much investment from the automotive industry. The UK's leading position is shown in the table below.

	Industry rewards	Country rewards	Rewards	Industry risks	Country risk	Risks	Autos Risk/Reward rating	Regional ranking
United Kingdom	66.7	83.7	72.6	70	77.9	74	73	1
Germany	65	70.9	67.1	75	73.7	74.4	69.3	2
France	70	61.8	67.1	72.5	64.4	68.4	67.5	3
Italy	53.3	60	55.7	67.5	62.3	64.9	58.4	4
Russia	58.3	57	57.9	62.5	49.1	55.8	57.2	5
Spain	48.3	56.7	51.2	67.5	65.4	66.4	55.8	6
Poland	48.3	56.1	51.1	75	58.5	66.7	55.8	7
Turkey	46.7	45.4	46.2	90	43.1	66.6	52.3	8
Ukraine	51.7	42.2	48.3	50	38.3	44.1	47.1	9
Romania	38.3	42.5	39.8	72.5	48.3	60.4	46	10
Slovakia	45	26.8	38.6	65	59.9	62.5	45.8	11
Hungary	31.7	58.3	41	55	53.7	54.3	45	12
Slovenia	31.7	43.4	35.8	60	63.9	62	43.6	13
Czech Republic	45	35.2	41.6	55	30	42.5	41.8	14
Lithuania	23.3	50.5	32.9	50	65	57.5	40.3	15
Croatia	25	48.1	33.1	55	54.3	54.7	39.6	16
Serbia	28.3	47.8	35.1	45	42.9	43.9	37.8	17
Estonia	15	47.6	26.4	60	64.2	62.1	37.1	18
Bulgaria	16.7	50.4	28.5	57.5	50.9	54.2	36.2	19
Greece	25	22.5	24.1	55	58.5	56.8	33.9	20
Latvia	15	46	25.8	45	59.8	52.4	33.8	21

Source: BMI

Scores are out of 100, The Business Environment Rating is the principal rating. It is comprised of two sub-ratings, 'Rewards' and 'Risks', with 70% and 30% weightings, respectively. The 'Rewards' rating is comprised of 'Industry Rewards' and 'Country Rewards', which have respective weightings of 65% and 35% and are based upon industry growth and size dynamics ('Market') and the broader economic and socio-demographic environments ('Country'). The 'Risks' rating is comprised of 'Market Risks' and 'Country Risk', each having a 50% weighting and based on subjective evaluation of industry regulatory and competitive issues ('Market') and the industry's broader 'Country Risk' exposure ('Country'), which is based on BMI's proprietary 'Country Risk Ratings'. The ratings structure is aligned across the 14 industries for which BMI provides Business Environment Ratings methodology and is designed to enable clients to consider each rating individually or as a composite, the choice depending on their industry exposure in each state.

Source: BMI

UK VEHICLE MANUFACTURING IS STRONG AND WILL REMAIN SO

UK vehicle production is well on the way to recovering to pre-recession levels. Figures for 2010 show UK car output at approximately 1.2 million units. Although this is still down from the 2007 level of 1.53 million units, it is nonetheless a strong improvement on the approximately 1.0 million units of 2009.

Year	2007	2008	2009	2010
UK car production	1,534,567	1,446,419	999,460	1,270,444

Source: Society of Motor Manufacturers and Traders Ltd

AutoAnalysis expects UK vehicle production to be back to 2007 levels by 2014, or possibly a year earlier depending on the actual launch timings and initial production volumes of a number of new model launches due in 2013-14.

The recovery in UK car production is driven by strong volumes at Nissan, a revival at Land Rover, the successful concentration of production of the Astra Sports Tourer made at Ellesmere Port, a partial recovery in production at Honda and the continued popularity of Mini in particular. At Nissan, 2010 production totalled just over 423,000 units, approximately 69,500, or almost 20%, above its pre-recession level. The growth at Nissan is a reflection of a combination of new models and far better than anticipated sales of its Qashqai model which is exported to Japan under the Dualis name.

	2007	2008	2009	2010
BMW	237,709	234,461	213,670	216,302
Honda	237,772	230,423	75,583	139,278
Jaguar	54,030	72,876	41,765	56,356
Land Rover	232,548	184,831	114,453	179,165
Nissan	353,718	386,555	338,150	423,262
Toyota	227,825	213,329	127,394	137,054
Vauxhall	115,476	102,481	76,771	102,665

Source: Society of Motor Manufacturers and Traders Ltd

There is, moreover, clear potential for further recovery and growth in production at a number of the UK car plants which in turn will mean opportunities for suppliers, of both new and established technologies. Specifically:


- At Nissan, the Leaf electric vehicle goes into production by early 2013 and will add in the region of 50,000 units to the factory's annual output; this is in addition to the 60,000 electric vehicle batteries which will also be made there.
- A new product programme, which started with the Evoque, is now well under way at Jaguar-Land Rover and while we await details of the full product range and the launch timing for the new vehicles remains to be confirmed, we expect total Jaguar-Land Rover production will climb above 300,000 units per year by the middle of the decade. Signalling its commitment to UK sourcing, Jaguar Land Rover confirmed in early March that it was awarding £2bn worth of supply contracts to UK suppliers on the new Evoque, with the local operations of IAC, Magna and JCI amongst the beneficiaries.

There is also a largely positive picture at Mini where capacity is close to being reached; while expansion at the Mini plant in Oxford is understood to be close to impossible because of a physical lack of space, the centrality of this plant to the BMW network is assured. Honda's UK plant is also central to its European operations and the plant is currently in the process of planning for the next generation of Civic and CR-V models, as well as continuing production of the Jazz small car.

While production volumes at Honda Swindon may not recover to pre-recession levels until the middle of the decade or later, production there is assured for foreseeable future. At Toyota one of the assembly lines has been mothballed and we do not expect this to be reactivated in the medium term. The good news story from Toyota is at its Deeside engine plant which makes the hybrid engines for the Auris and will be well-placed to produce the engines for the small hybrid car which is reportedly due to go into production in mid-2012. This hybrid model will be based on the Yaris but is understood to be due to have a different model name, to differentiate the hybrid model from the diesel and petrol Yaris models.

SIGNIFICANCE OF THE AUTOMOTIVE INDUSTRY TO THE UK ECONOMY

The automotive industry is a critical element to the UK economy. More specifically:

- The sector's total turnover is typically in excess of £50 billion per year, accounting for approximately two-thirds of the country's manufacturing sector turnover. It traditionally represents just over 3% of the country's GDP. In 2009, during the recession, the sector's turnover fell to just under £40 billion, but the export-led recovery by the major car companies should result in a substantial climb back towards normal aggregate revenue figures when the full year results for 2010 are released.
 - The sector typically produces an annual net valued-added to the UK economy of over £10 billion and is responsible for the direct employment of over 700,000 people, including those in the retail and aftermarket segments. While total employment has fallen from over 850,000 in the last decade, the technology challenges of the low carbon economy and the expansion of UK production of conventional vehicles and engines represent an opportunity to maintain existing employment levels and hopefully see them grow once more.
 - It is the no.1 sector for UK exports, generating nearly £24 billion of export revenue for the country in 2009; in a typical year, the sector accounts for around 10-11% of total UK exports sector each year.
 - The three largest Japanese car companies – Honda, Nissan and Toyota – have their main European car and engine production facilities here. Nissan also has its European R&D operation headquartered in the UK.
 - The sector has a significant presence in powertrain, with over 2 million engines made in the UK per year; these engines are not made just for UK-built cars and are exported to Germany, France and other locations, including several of the Toyota's vehicle production sites in Europe and beyond.
 - The UK has a very strong premium and niche/sport car sector with Jaguar-Land Rover, Bentley, Rolls Royce, Aston Martin and Lotus.
 - The UK is also home to the leading cluster of motor sport companies in Europe, including homes to several Formula 1 and other motor sport teams. This in turn has a strong supplier network focused on leading edge automotive technology with long-term volume application potential.
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UK VEHICLE MANUFACTURERS HAVE RENEWED THEIR COMMITMENT TO MANUFACTURING IN THE COUNTRY

During the recession, there were a number of worrying issues for the UK automotive sector to address: one of the Jaguar-Land Rover factories was seriously considered for closure, the Honda plant was closed for several months, production volumes fell throughout the industry and Toyota mothballed one of its assembly lines. However, the mothballing of the Toyota line aside, these problems have been largely overcome and investment in the UK has continued and will, we believe, continue.

Recent developments symbolising the vehicle companies' commitment to the UK are shown in the following table:

UK VEHICLE MANUFACTURERS HAVE RENEWED THEIR COMMITMENT TO MANUFACTURING IN THE COUNTRY (TABLE)

Company/ Plant	Investments and product line expansion	Significance
BMW Mini Oxford	Mini Coupe confirmed for production in late 2011. Mini Roadster confirmed for the first half of 2012.	These models will be made at Oxford, maintaining the factory's high level of utilisation.
Ford	£1.5bn investment in engineering and manufacturing facilities across the UK to support development and production of low CO2 engines and vehicles. This includes current and future commercial vehicle production at Ford Southampton.	UK is the hub of Ford's European powertrain activities with engine production based at Dagenham near London and Bridgend in Wales. One-third of Ford vehicles globally use UK-designed and produced engines. Commercial vehicle and engine engineering is centred at Dunton in Essex while Commercial vehicle production continues at Ford Southampton.
Honda Swindon	HUM reopened last June after a four month shutdown and major refurbishment. 3,000 associates returned to full time working last June and further investment to the £1.4bn has been made in the plant.	Honda is consequently now in the process of recruiting an additional 80 engineers. The facility expects to produce around 149,000 cars this year.
Jaguar-Land Rover	Decision made to retain all three UK plants, new model programme for both brands and "multi-billion pound" investment programme under way; 1500 new jobs to be added at Halewood in 2011.	Full details of model programme and investment plans still awaited, but Tata is committed to growing JLR on a global basis, with the UK at its centre; this decision follows on from JLR returning to profitability in 2010.
Nissan	£420m investment to make electric vehicle batteries and the Leaf electric vehicle; approx. half of this investment supported by EIB loan, plus c£21mn government grant. 800 extra staff taken on, 3 rd shift added.	Nissan's Sunderland plant is a major UK success story – record production volumes, hugely popular models, exports to Japan and investment in cutting edge technology.
Toyota	Toyota welcomes its long and positive history with the UK. TMUK was our first manufacturing plant in Europe and has benefited from £1.85 bn investment in its operations. Toyota has signaled its confidence in its UK operations with the introduction of its first hybrid production in Europe - Auris Hybrid in June 2010 in addition to the existing Avensis and Auris models.	Toyota has signaled its confidence in its UK operations with the introduction of its first hybrid vehicle production in Europe - Auris Hybrid - and the engine plant at Deeside also has the distinction of being Toyota's first engine plant outside of Japan to produce the hybrid engine.
Vauxhall/GM	Ellesmere Port confirmed as central to Astra production strategy; this is the only production location for the Sports Tourer (estate) model. Industry, trade press and analysts alike all expect Ampera to be made here, but no decision made yet.	Ellesmere Port can expect up to 140,000 units production per year with potential increase in 2012/13; GM may well need Ampera to meet this target if Astra volumes fall as model ages and other plants have to be kept running at optimal volumes. Further investment will follow if production of the new van is confirmed for Luton.

HIGH EXPORT VOLUMES UNDERPIN UK VEHICLE PRODUCTION

In recent years, exports have accounted for well over 70% of production of most of the UK car manufacturers and over 80% on occasions. The following table shows UK car exports as % of production, 2008, 2009 and to Q3 2010:

	2008 production	2008 % exports	2009 production	2009 % exports	2010 production	2010 % exports
BMW Mini	234,461	80.2	213,670	83.9	163,383	78.3
Honda	230,423	72.9	75,583	70.6	103,627	51.0
Jaguar	72,876	69.7	41,765	62.1	43,919	67.8
Land Rover	184,831	79.6	114,553	76.6	130,341	76.5
Nissan	386,555	84.7	338,139	79.8	307,633	78.4
Toyota	213,329	84.3	127,405	81.2	103,595	79.5
Vauxhall	102,481	53.6	76,671	59.2	73,439	42.6

Source: Society of Motor Manufacturers and Traders Ltd

Traditionally, most of the UK's exports have been to Europe, but for BMW Mini and Jaguar-Land Rover in particular, North America is a core export market. Indeed, for Jaguar-Land Rover the proportion of exports accounted for by North America has risen steadily in recent years, as have exports to Asia. 2011 has started well for Jaguar Land Rover with press reports suggesting a new 40,000 units order from China – worth as much as £1 billion in revenue – will shortly be signed as part of a £2.6bn trade agreement between the UK and China. The importance of exports to America (most of which are to North America) and Asia to BMW Mini and Jaguar-Land Rover is clear from the following table:

	2008 America as % of exports	2008 Asia as % of exports	2009 America as % of exports	2009 Asia as % of exports	Q1-3 2010 America as % of exports	Q1-3 2010 Asia as % of exports
BMW Mini	35.4	10.4	31.7	9.4	28.5	18.0
Jaguar	34.7	17.4	38.0	17.9	45.2	19.3
Land Rover	26.4	18.5	28.6	20.6	31.1	24.5

Source: Society of Motor Manufacturers and Traders Ltd

BMW Mini exports to America, especially North America, have fallen somewhat, but these have partly been made up by the expansion in exports to Asia. We think that the expected coupe and roadster Minis will be major success stories, especially in export markets, and we expect Mini export volumes will rise strongly when these new models go into production. Meanwhile at Jaguar-Land Rover, although total production and export volumes have some way to go before they reach the pre-recession levels, the proportion of exports to North America and Asia is rising strongly.

In North America this reflects the continued preference for European luxury brands over North American luxury models and the same trend is being followed in Asia, especially China, the Middle East and Japan.

Taking combined car and commercial vehicle exports, provisional SMMT figures for 2010 suggest total exports will be up by nearly 24% over 2009; while 2010 export volumes are going to be down on the pre-recession levels, they are nonetheless rising once again and UK suppliers should be well-placed to benefit from continued production volume growth to supply demand outside Europe.

Jaguar-Land Rover is likely to benefit in particular as the premium sector is less price sensitive than are the sectors in which the Japanese vehicle manufacturers in the UK compete. Looking at specific regional and country exports outside Europe, the following growth markets are worthy of note – especially China, Turkey and Brazil which have all seen growth in exports since 2007, i.e., since the pre-recession high, and not just since in the last year or so since the low-point of the recession.

	% change in exports 2010e/2009	% change in exports 2010e/2007
Total outside Europe	53.2	-2.0
Asia	65.6	-3.5
China	113.8	204.0
UAE	75.1	-33.2
Turkey	84.8	65.3
Brazil	84.8	65.3
Mexico	48.5	12.2
USA	20.8	-14.4
Russia	60.9	-55.0
South Africa	115.8	-17.1

Source: Society of Motor Manufacturers and Traders Ltd

SUPPLIERS WILL BENEFIT FROM VEHICLE COMPANIES' COMMITMENT TO INCREASING SOURCING IN THE UK

In 2009, AutoAnalysis undertook a survey of the sourcing strategies of the major car companies and tier 1 suppliers in the UK. Designed as a complement to the work of the NAIGT and to assist the newly-formed Automotive Council, this survey identified a firm wish on the part of the UK vehicle companies to increase their level of UK sourcing. The survey identified potential in a number of areas, both established technologies (ranging from fasteners, nuts and bolts, to alloy wheels and transmission components) and also in a number of new high-technology areas and the other new technologies associated with electric and hybrid vehicles.

In the higher technology areas, vehicle companies have indicated their wish to source electronic control units, satellite navigation systems, advanced air conditioning and safety systems in the UK. For the electric vehicle market, an entirely new supply chain will need to be established – for the vehicles and the batteries; the following component areas have been identified as highly desirable for local sourcing: specialist wiring harness, electrical power unit, electric drivetrain and gearing. Subsequent to the AutoAnalysis study, the Automotive Council commissioned Mathias Holweg of Cambridge University to undertake further analysis of the potential identified. The results are to be found in the publication “Growing the automotive supply chain – the road forward” (*1), published in March.

However, the real evidence for the vehicle companies’ commitment to the UK will come in the form of new contracts awarded to suppliers. In this regard, GM is the harbinger of change and it has already been reported that GM plans to bring back over £130 million worth of sourcing to UK suppliers. AutoAnalysis believes this is symbolic of the way in which the industry is heading and other vehicle companies will steadily increase UK sourcing for a variety of reasons, including wanting to:

- Minimise exposure to exchange rate fluctuations.
- Minimise the vulnerabilities and costs of an extended supply chain.
- Take advantage of the flexibility of the UK labour market and the generally positive industrial relations environment.
- And, crucially, take advantage of the growing expertise which the UK has in low carbon technologies.

IMPROVEMENTS TO THE BUSINESS ENVIRONMENT

The automotive business environment is being improved greatly by way of a number of key initiatives from government and industry bodies; notable here are the NAIGT report, the formation of the Automotive Council, various supply chain improvement initiatives promoted by SMMT and the funding of automotive projects through the Technology Strategy Board. These are now reviewed in turn.

The NAIGT was formed in April 2008 as an industry-led project, supported by the automotive unit of BERR (now BIS); a major study was undertaken by Ricardo Consulting which set out the future direction for the UK automotive industry and the challenges which it had to address (*2). The report identified the emerging low carbon vehicle market as the key new opportunity for the UK and also led to the setting up of five expert groups – covering supply chain, technology and business environment issues – which have effectively since been taken on by the Automotive Council.

NEW AUTOMOTIVE AND INNOVATION GROWTH TEAM (NAIGT)

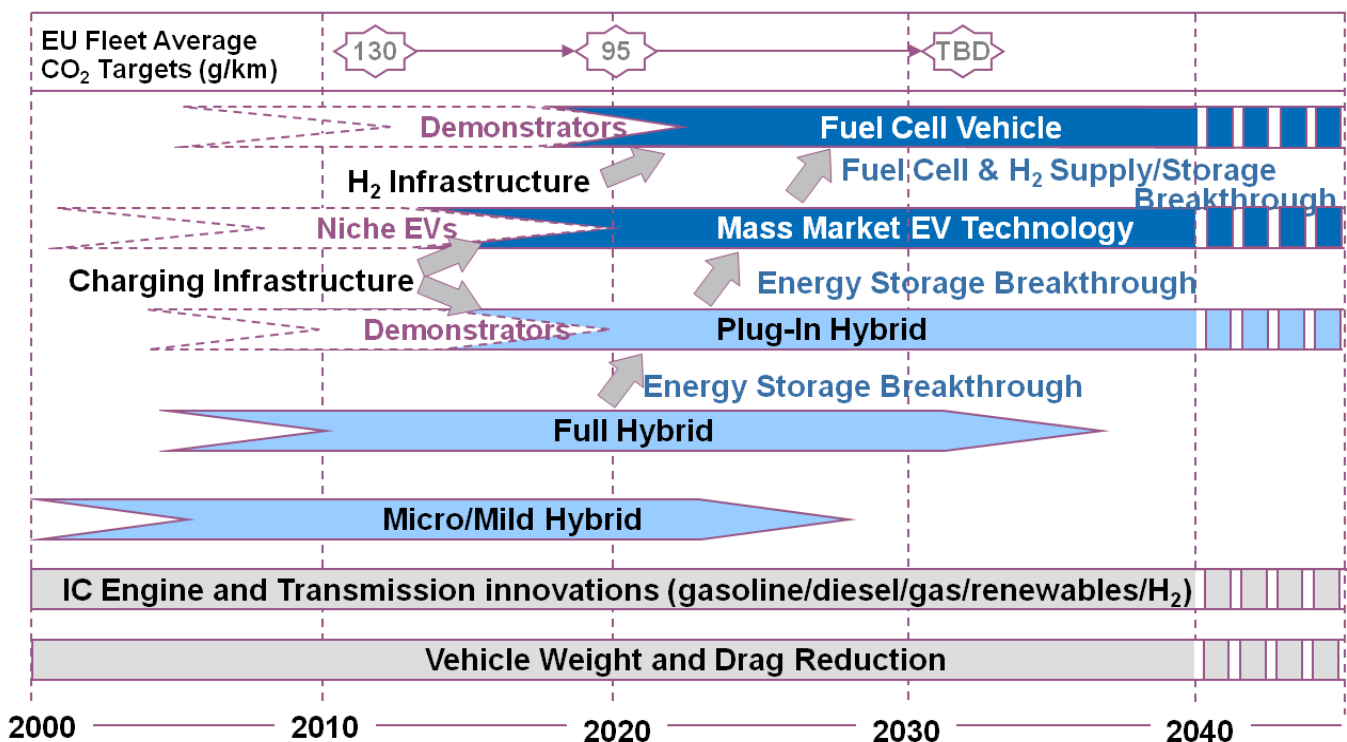
The NAIGT report specifically recommended the establishment of the Automotive Council and set out a number of key messages for government; these are now being addressed. Specifically, the NAIGT called upon government to:

- Simplify and maximise the effectiveness of the incentives and funding available for manufacturing, consistent with EU rules.
 - Widen collaboration between the automotive sector and other high-technology industries and the academic world.
 - Help to promote a positive image for the industry.
 - Improve the monetary and fiscal environment, especially improving the lines of credit and financing available to the industry.
 - Maintain the flexibility of the UK labour market.
 - And expand and improve on skills provision and training for the industry, especially the provision of apprenticeships.
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In terms of the technology focus for the UK automotive industry, the NAIGT set out what it called the Consensus Product Roadmap to guide the UK in the new low carbon economy. The expected timing for various new low carbon technologies is set out in the following charts:

	SHORT TERM 5 – 10 years from production	MEDIUM TERM 7 – 15 years from production	LONG TERM 10 – 20 years from production
	INDUSTRY		UNIVERSITIES
Propulsion	<ul style="list-style-type: none"> IC engine optimisation Boost systems for downsizing Flexible valve/actuation for engines/transmissions Low cost compact e-motors 	<ul style="list-style-type: none"> Higher efficiency IC engines Capacitive boost systems All electric actuation systems Optimised range extender engine Lower cost e-motor Heat energy recovery (e.g. E-turbine) 	<ul style="list-style-type: none"> Super high efficiency motors (superconducting) New IC engines with 70%+ thermal efficiency Advanced heat energy recovery (e.g. thermoelectric) Motor/Fuel Cell materials
Energy Storage	<ul style="list-style-type: none"> Improved quality / durability 200+ Wh/kg & \$800/kWh cost battery systems Low cost power electronics 	<ul style="list-style-type: none"> Next gen batteries 300+ Wh/kg and \$500/kWh cost Flexible power elec. modules Other forms of energy recovery (mechanical/chemical etc) 	<ul style="list-style-type: none"> 3rd gen batteries 400+ Wh/kg & \$200/kWh cost New low cost solid state power conversion systems Hydrogen storage technology
Vehicle Efficiency	<ul style="list-style-type: none"> Lightweight structures and interiors Low rolling resistance tyres / brakes 	<ul style="list-style-type: none"> New vehicle classes and configurations Combination of function to reduce weight / cost Minimised weight / losses 	<ul style="list-style-type: none"> Flexible re-configurable multi-utility vehicle concepts 50% weight reduction from 2008 Advanced aerodynamic concepts
System Control	<ul style="list-style-type: none"> Information enabled control (Topology, V2V, V2I, traffic etc.) Optimised vehicle energy mgmt. Intelligent thermal management 	<ul style="list-style-type: none"> Advanced information enabled control Intelligent P/T and HVAC mgmt. 	<ul style="list-style-type: none"> Autonomous P/T and vehicle control integrated with active safety
Energy + Fuel Supply	<ul style="list-style-type: none"> Optimised 1st gen biofuels processes New 2nd gen biofuel processes 	<ul style="list-style-type: none"> Intelligent energy / re-fuelling infrastructure (e.g. fast charge) Industrial scale demonstration of new 2nd gen biofuel processes 	<ul style="list-style-type: none"> 3rd gen biofuel processes 2nd gen industrial scale biofuel production infrastructure
Processes + Tools	<ul style="list-style-type: none"> Process + delivery tool development and connectivity 	<ul style="list-style-type: none"> Auto-optimisation methods using virtual systems 	<ul style="list-style-type: none"> Artificial Intelligence to deliver complex multi-criteria system optimisation

Source: Automotive Council



Source: Automotive Council

THE AUTOMOTIVE COUNCIL

Following on from the NAIGT report, the Automotive Council was established, with support of the government. This consists of senior executives from all the major vehicle manufacturers and several component suppliers operating in the UK, alongside union and BIS/DfT representatives; it is co-chaired by the Secretary of State for Business. Its broad aim is to act as an advisory and consultative forum for the government and the UK automotive industry; specifically it is tasked with ensuring sustained, high-level communication between government and the automotive industry and putting in place a long-term strategic framework for the industry. This is a unique development in the history of the UK automotive industry and provides a more direct route into government than the industry has had access to before. At the time of its formation, the Automotive Council was unique, although we understand that Germany has since followed the UK's lead in establishing such a body.

The council's full remit is to:

- Enhance the perception of the UK automotive industry, nationally and internationally
- Demonstrate that the UK is an attractive investment location.
- Provide a stronger public voice for the industry.
- Develop the technology roadmaps for low carbon vehicles and related technologies as originally identified in the NAIGT report.
- Develop a stronger and more competitive supply chain.
- Increase the appeal of the automotive industry as a career path.
- Maintain a strategic dialogue with the government.

All of these aims are required to overcome a number of challenges facing the automotive sector in the UK, including:

- A severe hollowing out of the industry in the past decade, with a number of suppliers having significantly reduced their manufacturing activity in the country, or exited the country entirely.
- A parallel reduction in the amount of automotive R&D taking place in the UK.
- A lack of scale in individual vehicle manufacturer plants and vehicle production volumes (for all the positive news of rising overall production volumes, only two vehicles are produced in the UK at an annual rate above 200,000 units per year); and by comparison with production volumes in France and Germany, the UK produces much less than half the vehicle volumes made there.
- The perception of a lack of status of engineering in general and the automotive industry specifically as a long-term career choice.

Those challenges are being faced head on by the industry, and the SMMT and Automotive Council have a major role to play here. The UK has a number of distinct advantages and attributes and it is now up to the industry to exploit these specialisations, especially in powertrain and in the luxury vehicle and sports car segments, as well as the emerging low carbon technologies.

Since its establishment, the Automotive Council has divided its work into two main areas, through its Technology Group and a Supply Chain Group. The Technology Group's broad objectives are to develop the case for investment in automotive R&D in the UK and develop the technology roadmaps for low carbon technology identified by the NAIGT, helping to ensure the supply base coordinates its skills and capabilities to exploit these opportunities.

It has a specific five-fold technology focus, covering:

- High technology internal combustion engines.
- Energy storage and management, from ICEs, through the various forms of hybrids, full electric vehicles and fuel cell vehicles, together with the appropriate infrastructure needed to support these technologies.
- Lightweight vehicle structures.
- Low cost power electronics
- Intelligent transportation systems.

The Supply Chain Group initial work has focused on seven main areas, including a detailed analysis of the vehicle manufacturers' future sourcing plans. This work, led by Dr Matthias Holweg of Cambridge University, follows on from work undertaken by AutoAnalysis which provided the first guide to the sourcing gaps in the UK. Dr Holweg's report includes a UK sourcing roadmap (pages 3 and 40) which details long term opportunities for increasing UK sourcing, as well as short term opportunities in powertrain and body components, interior and exterior components and electrical and electronic components (page 3). The Council, together with the SMMT, is actively committed to increasing sourcing of established and new (low carbon) technologies/components in the UK, rather than their being imported.

The specific tasks of the Supply Chain group are to:

- Set out and communicate the technology/product sourcing roadmap for the vehicle manufacturers and tier component suppliers.
- Identify and promote the support available for existing suppliers to maximise their chance of winning contracts.
- Identify the "quick wins", i.e., which components can be sourced in the UK already and, through the SMMT, help to foster contact between the vehicle companies and the suppliers.

- Assess how well the existing supply chain is positioned to exploit the future opportunities offered by the low carbon economy; and develop plans to maximise the chance of the supply chain exploiting these opportunities and filling in any gaps in their capabilities.
- Develop a communication plan to ensure that the UK supply industry is fully aware of sourcing opportunities as they emerge.
- Develop and communicate a clear picture of the new product plans and sourcing decision timetable for the new vehicles, again to help the supply chain focus on the best new opportunities.
- Coordinate working with the Technology Group.

SMMT-LED SUPPLY CHAIN INITIATIVES


The SMMT has commissioned or been heavily involved with a number of key studies of the UK automotive industry, notably the NAIGT report, the AutoAnalysis Sourcing Opportunities study and the work recently undertaken by Dr Holweg of Cambridge University. These reports have been essential to setting the policy framework and broad strategic objectives for the industry and the Automotive Council in particular. In addition, at a micro and fundamentally practical level, the SMMT has launched two initiatives to help UK suppliers take advantage of the opportunities presented by the vehicle companies. Specifically, this has involved the Automotive Supplier Finder (ASF) database and a series of “Meet the Buyer” network events.

The Automotive Supplier Finder (ASF) database contains information on several thousand UK companies which enables vehicle manufacturer and tier 1 purchasing executives to search for potential UK suppliers online. In parallel, the SMMT has started to hold a series of supplier networking events which facilitate UK suppliers meeting vehicle company purchasing executives.

The first of these took place in July 2010 with over 90 meetings taking place between UK suppliers and purchasing representatives of most of the vehicle manufacturers operating in the UK; such events have been a common feature of the industry in Germany for many years, but have been largely absent from the UK. We expect that such events should indeed help UK suppliers to identify business opportunities and ultimately win business for which they would not otherwise have the opportunity to quote. This is a very positive development; the SMMT has reported that close to 90% of suppliers attending the first event in July 2010 have had follow-up discussions with the vehicle manufacturers; while initial meetings and subsequent follow-ups are not the same as actually winning new business, this approach can only help to strengthen the UK supplier industry and is very welcome.

TECHNOLOGY STRATEGY BOARD

The work of the TSB is described later in this paper in the section on **Decarbonising the Economy**; the key objectives of the TSB are to promote innovation and the adoption of new technologies and has a brief to work across all industries. Its creation is an important element in improving the R&D strengths of the UK automotive industry. Committed funding for automotive specific projects now totals around £130 million, although this money has come from a range of government bodies, not just the TSB itself. Other government bodies involved include: DfT, OLEV, BIS, EPSRC (Engineering & Physical Sciences Research Council), the RDAs and the devolved administrations.



GOVERNMENT COMMITMENT TO THE AUTOMOTIVE SECTOR

The government has signalled its commitment to the automotive sector and is committed to supporting manufacturing and engineering in general. In our view, the current government's support and commitment to manufacturing appears qualitatively different to – and an improvement on – the support received from other administrations. The long term effect and benefit of this approach remain to be seen, but we believe that its new-found commitment to the manufacturing and engineering can only help the industry.

REBALANCING THE ECONOMY, AWAY FROM SERVICES AND TOWARDS MANUFACTURING

The government's overall approach in this area is set out in “*The path to strong, sustainable and balanced growth*”, published by the Treasury in November 2010 (*3). Specifically this plan is intended to put the UK on a different economic path to that which it has followed in recent years. This is based on a four-part commitment (*4) to the private sector which:

- Provides the stability which business needs to plan and invest.
- Makes markets more dynamic by removing barriers to growth wherever possible.
- Focuses the government's activities on creating the conditions for private sector growth and investment.
- And ensures that strong growth is shared fairly in the long run.

Furthermore, the government wants to help companies boost international trade, and has placed a great deal of emphasis on supporting export initiatives, eg in trade missions led by senior government ministers to China and India – the ownership of Jaguar Land Rover by Tata of India is something which the government will undoubtedly seek to exploit to the UK's advantage. The government's macro-economic policy is focused on ensuring economic stability (*5), simplifying the planning regime to support growth and reduce “red tape” and a series of other measures to improve or simplify the regulatory regime (*6), increase incentives for innovation (eg through the Technology Strategy Board) and focusing government investment and procurement on improving the country's infrastructure and improving the skill of the labour force(*7).

In our view, the most important element in this Treasury document is the commitment by government to improve access to finance for growing companies (*8); there has been much (possibly anecdotal) press reporting of the difficulties faced by manufacturing companies in obtaining bank finance.

The government's response here is four-fold, ie: This Treasury document also noted how the major UK banks were committed to a series of actions to repair and rebuild the damaged relations between banks and their business customers. Government and the banking sector have created The Business Finance Taskforce which in turn has committed the banks to:

- Establishing a new bank-led £1.5 billion "Business Growth Fund" to provide equity finance for established SMEs.
- Supporting the Enterprise Finance Guarantee (EFG) over the next four years, with up to £600 million of additional lending to 6,000 businesses in 2011 and up to more than £2 billion over the next four years.
- Increasing the government's share of Enterprise Capital Funds by £200 million, specifically at early stage, potentially very high growth and highly innovative SMEs needing equity funding.
- And encouraging business angel groups and the government's own SME investment arm, Capital for Enterprise, to bid to the Regional Growth Fund for a Business Angel Co-Investment Fund, to support angel investments into early stage SMEs.

In addition, the Treasury paper commits the government to reviewing the overall market for the finance for SMEs and how competitive this is in reality, as well as assessing the competitive nature of the market for finance, we hope that the government will also report and indeed on the reality of finance provision to SMEs.

- Funding and implementing a new single network of UK mentors to help start-ups and growing businesses alike.
- Introducing an appeals process which to help companies which have been declined finance by the banks.
- And funding and publishing a new survey of business finance and lending supply, including a regional breakdown of the actual finance provided.

This is essential to counter the widespread public perception that the financial sector has not been as supportive as it could or arguably should have been to the manufacturing sector in particular.

In addition to the reported difficulties of automotive suppliers obtaining finance, the research which AutoAnalysis undertook in 2009 also revealed that many component suppliers faced problems with regard to obtaining credit insurance. The lack of credit insurance was seen as a further barrier to investment in the sector. We hope that this aspect of the industry's financing is also addressed by the government and the finance sector alike. Without credit insurance, it can be difficult for many suppliers to fund the work involved in large contracts and this issue needs to be addressed and the financial sector needs to support companies in this area.

COMMITMENT TO THE DECARBONISATION OF THE ECONOMY

The government is clearly committed to the decarbonisation of the economy; central to this is reducing the dependence of the automotive industry on the conventional internal combustion engine. Commitment to new low carbon automotive involves the following:

- The **NAIGT** (New Automotive Innovation Growth Team) report, the main recommendations of which the government is now following.
- The establishment of and support for the **Automotive Council** (as described above); this new venture illustrates the new co-operative relationship between government and industry particularly well. Government involvement is designed to provide reassurance to industry, especially the car companies, that the government is committed to making the UK a safe and attractive place to invest in for the long term.
- **Office of Low Emission Vehicles** (OLEV); this is a new government office, formed from DfT, DECC and BIS in 2009. It focuses on encouraging and supporting the adoption of low emission vehicles. This not only symbolises the government's support for low emission vehicles, but it also gives the vehicle companies a central access point to policy makers to help their development of appropriate vehicles for the future. It is worth noting that London has over 2,500 electric vehicles already being driven there every day. Only Oslo has a higher number of electric vehicles on its streets.
- The **Plug-in Car Grant** (PICG); this specific scheme, which has been in place since the start of 2011, gives a grant of 25% (up to a maximum of £5,000) off the purchase price of a pure electric, plug-in hybrid or fuel cell car.
- Systematic **installation of charging points**; there is a country-wide initiative now underway to install charging points to facilitate the adoption of electric vehicles which qualify for the PICG. Three cities (London, Manchester and Milton Keynes) and five regions/countries (East of England, Midlands, North East England, Northern Ireland and Scotland) have been chosen for the initial round of installations. The funding for this programme, which was announced in March 2010, will lead to 11,000 charging points being installed in London, Milton Keynes and the North East by 2013; London alone will reach 25,000 by 2015, aided by specific support from Transport for London (TfL). Details on the charging point investment details for the other regions will be announced in early February.
- **Tax incentives** for electric vehicles which fall into five areas:
 - No vehicle excise duty (VED) or road tax.
 - Enhanced year one capital allowances for electric cars bought for fleets.
 - 100% year one capital allowances for electric vans.
 - Exemption of electric vans from van benefit charge for five years.
 - Exemption of electric cars from company car tax.

● The **Technology Strategy Board**; this government body was established in 2007 and is charged with promoting innovation and the adoption of new technologies. It works across all industries, but automotive-related projects have received funding through the TSB (including some funds from other government bodies) of around £130 million to date. Selected highlights include:

- £20 million to support **low carbon vans in public fleets**; this started in 2009, with an additional £30 million promised for further low carbon vehicle projects; this operates under the banner of Low Carbon Vehicle Procurement Programme (LCVPP).
- £20 million to support **low carbon vehicle research and development**, under the banner of the Low Carbon Vehicle Innovation Programme (LCVIP); an additional £9 million was announced for this area in December 2010, with companies now able to bid for this extra funding until March 2011 when the successful applicants will be announced.
- £25 million for the **delivery of low carbon vehicles across eight locations in the UK**, bringing together car companies, power companies, regional development agencies (RDAs), local councils and academic bodies, under the banner of the Ultra Low Carbon Vehicle Demonstration Programme (ULCV).
- Just over £7 million capital funding for a **Fuel Cell and Hydrogen Demonstration Programme** – including a fuel cell London taxi project.
- £19 million for **collaborative projects to help the supply chain** for low carbon vehicles.

In addition to these schemes, £30m has been allocated to the Green Bus Fund by the DfT to help local councils buy low carbon buses, with funding covering 349 such vehicles, of which over 50 are electric.

Also, Transport for London (TFL) has committed to installing 25,000 charging points for electric vehicles in London by 2015. Numerous other local government initiatives exist to support the take up low carbon buses; these together with the programmes outlined here signal the government's commitment to low carbon technologies.

COMMITMENT TO DEVELOPING THE UK'S SKILLS BASE

The new government's strategy for increasing the UK's overall skill base is set out in the BIS publication "*Skills for Sustainable Growth*"(*9). This strategy applies to all sectors, not just automotive, but is notable for the specific commitment it gives to supporting apprenticeships. Not before time, it would appear that the government has recognised that it has to make a major effort to improve the country's skills base in order to, in turn, redress the productivity imbalance between the UK and, for example, Germany & France.

The government has recognised that, by comparison with many other developed and indeed developing economies, the UK is lacking in what it calls intermediate technical skills and that this problem has to be addressed. It believes that around 80% of the expected workforce of 2020 has already left compulsory education, so adult apprenticeships and life-long learning schemes will be essential to bringing the overall labour force skill level up to that which will be required meet future economic challenges(*10).

The traditional apprenticeship scheme has largely withered and died off in the UK, whereas it has remained at the heart of the engineering industry in Germany for example for many years. In work which AutoAnalysis carried out for SMMT in 2009, amongst the UK vehicle manufacturers and selected major tier 1 suppliers, we found a great deal of frustration at the lack of government support for apprenticeships and related training schemes.

The new government's commitment to raising the country's skills base undoubtedly has a long way to go, but it will certainly aid the automotive industry for the government to have placed apprenticeships "at the heart of the system that (it) will build" and expand the number of adult apprenticeships to reach 200,000 per year by 2015; total investment in apprenticeship schemes will be over £600 million a year by 2012 (*11).

CONCLUSION

Although the national and global economic outlook remains uncertain and the recovery may well proceed falteringly at times, the key conclusion from this overview of the UK automotive industry is that in many ways it is in a very rude state of health. Production volumes are once again on the rise (driven by exports, especially beyond Europe), the major vehicle companies located here have reinforced their commitment to the UK – through new model programmes, expansion in production facilities and increasing the sourcing of components from UK suppliers – and the government and industry are now working much more closely together than they have done in the past. They have analysed the industry, its strengths and weaknesses, identifying serious opportunities and are now putting in place the right environment for the automotive industry to grow.

These factors, allied to the tremendous potential provided by the switch to the low carbon economy, with the emergence of hybrid and electric vehicles, mean that UK automotive industry, especially the supplier sector, is worthy of support from the financial community. The government appears to be far more committed to manufacturing and engineering than it has been in the past and given the significance of the automotive industry to the overall UK economy (3% of national GDP, over 800,000 jobs, the number one export sector and much more besides), suppliers to the industry – and their bankers – have a real opportunity to grow and chart very successful futures.

ABOUT THE AUTHOR

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(*7) - Ibid pages 14-20

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