

Automotive Technology Council – Funding & Academic Partnerships

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- 5 Technology priority area recommendations made by the Technology Group:
 - Invest in the development of the *next generation low CO2 engine technologies and the development of engines for Range Extended Vehicles*. Study how to attract key Tier1 suppliers of engine components to participate in UK development activities.
 - Invest in the research and development of *Energy Storage and Energy Management systems*. Study how to develop an integrated UK supply chain for these technologies.
 - Invest in an integrated collaborative research programme and the development of a *lightweight concept vehicle* to explore the opportunities to promote collaboration between Automotive and Aerospace companies in the UK.
 - Invest in the research and development of *Power Electronics and Electric Machine systems*. Study how to develop an integrated UK supply chain for these technologies.
 - *Intelligent Transport Systems* (The following are comments from AC, need to interpret for this workstream)

- The UK has the potential to develop a strong competitive position re the development of ITS. Many world leading companies developing related technologies are either UK owned or have a major UK presence.

- The UK needs to stay closely involved with EU standard setting on ITS so the UK can establish and maintain a competitive position

- The UK should seek to learn the lessons of existing large scale ITS demonstrator projects in Germany and Japan

- Fields such as telematics are highly diverse and as a result it will be important to set clear development objectives to ensure UK benefits are achieved.

- Other industries such as the defence and space sectors should be involved in ITS development

- Delivery mechanisms linking both regional and national infrastructure projects will be crucially important.

- Definition of 'Invest' in the context of Research Funding and Academic Partnerships
 - Probably takes 2 major forms in this context
 - Support for collaborative activity involving Universities, Small Tech Companies,
 - Consultancies, Larger Suppliers and OEMs.
 - This would be focused on a particular outcome associated with one of the priority themes and managed according to best-practice technology delivery principles.
 - Support for University activity which is more curiosity driven, directed toward the 'Grand Challenges' associated with the 5 priority themes.
- Other situational information required.
 - Pattern of where EPSRC money is being spent currently aligned to these priority areas.
 - Where are the best Universities in the UK from the perspective of these priority areas?
 - Where is current and planned investment in any 'centres' associated with the identified priority areas?
 - Learning from the Hauser review.



1. Describe the objective

- That the undoubted Technical Excellence of the UK University base be effectively leveraged to it's maximum potential in support of the innovation and growth of the UK Automotive Sector.
- Create the link between Academic Institutions, Industry and Funding Bodies to establish the technology and funding environment to promote collaboration activities to develop the five strategic technologies.

2. Understand the current situation

- The UK has a science capability second only to the US: an undoubted source of competitive advantage. However, it falls short on translating scientific leads into leading positions in new industries. (Not me! Dr. H Hauser)
- Numerous Innovative Manufacturing Centres (IMRCs) and Doctorial Training Centres which have some degree of relevance to the priority areas but awareness in industry low.
- Capability in the priority areas spread over too many universities, none of which have the capability to compete on the global stage on these particular topics.
- Perception of University capability these areas is poor from the industry perspective.
- University comes up with ideas to obtain EPSRC funding & tout about in industry to find if anyone would collaborate.
- Industry only does research it needs to remain competitive, grants are only an aid not a decider.
- Suppliers see university as cheep test houses & low cost modelling, not payment for expertise.
- Facilities are in most cases poor or inadequate for the detailed task.
- The capability of a particular university is not the institution but often the individual professor, therefore no lasting substance.
- Not outcome focused from industry perspective. Difficult for industry to interface with.
- Little skills/people movement from Universities to industry and visa versa.
- Some 'centres' of activity are being set up/planned but not as part of a strategy directed toward the priority areas.
- Little or no "eco-system" for Industry/University innovation
- Funding streams are often short term and opportunistic in nature.
- Over £90M of EPSRC money being spent at Universities on the 5 Strategic Technologies identified by this group.

Technology Group Strategic Technologies

Total Value: £ 5,804,538

Internal Combustion Engine

Total Grants: 30 Total Value: £21,920,000

Energy Storage & Energy Management

Total Grants: 19 Total Value: £18,553,505

Lightweight Vehicle & Powertrain Structures

Total Grants: 26Total Value: £ 10,620,058

Power Electronics & Electric Machines

Total Grants: 16

ITS

Total Grants: 68 Total Value: £ 34,176,613



3. Propose the target

- Need a discussion on metrics for this possibly based on EPSRC work

- 4. Describe the gap between the current level and the proposed target
- 5. Analysis of the current situation
 - Understand the reasons why the current situation is the way it is?
 - What drives academia?
 - Universities have quite focused objective measurement criteria (funding achieved, papers written etc) but it may not be the optimum to deliver for industry.
 - What drives industry?
- 6. Root cause analysis and confirmation
 - Is there enough 'Critical Mass' in the UK based OEMs and supply chain in terms of demand for University research? How much does industry spend with Universities?
- 7. Strategy proposal and control items for the objective
 - Given an understanding of the root causes, what can be done to achieve the objective/target.
 - To what extent to the recommendations of the Hauser/Dyson reviews address the root causes?
 - Large enough to have substance, long term continuous research.
 - Invest in the best equipment & people to operate it. To be able to use back office research PhD staff requires long term continuous
 - research & not short term automotive.
 - Concentrate on a few of world leading capability which industry staff would like to have on their CV.
 - Bring the professors together in a few locations to give critical mass.