

# HEAT/SHIFT Conference Expo SUPPORTING LOW-CARBON AUTOMOTIVE:

Go-to-market time for EV UK

Cambridge, 2 December 2010

<http://www.cir-strategy.com/events/>



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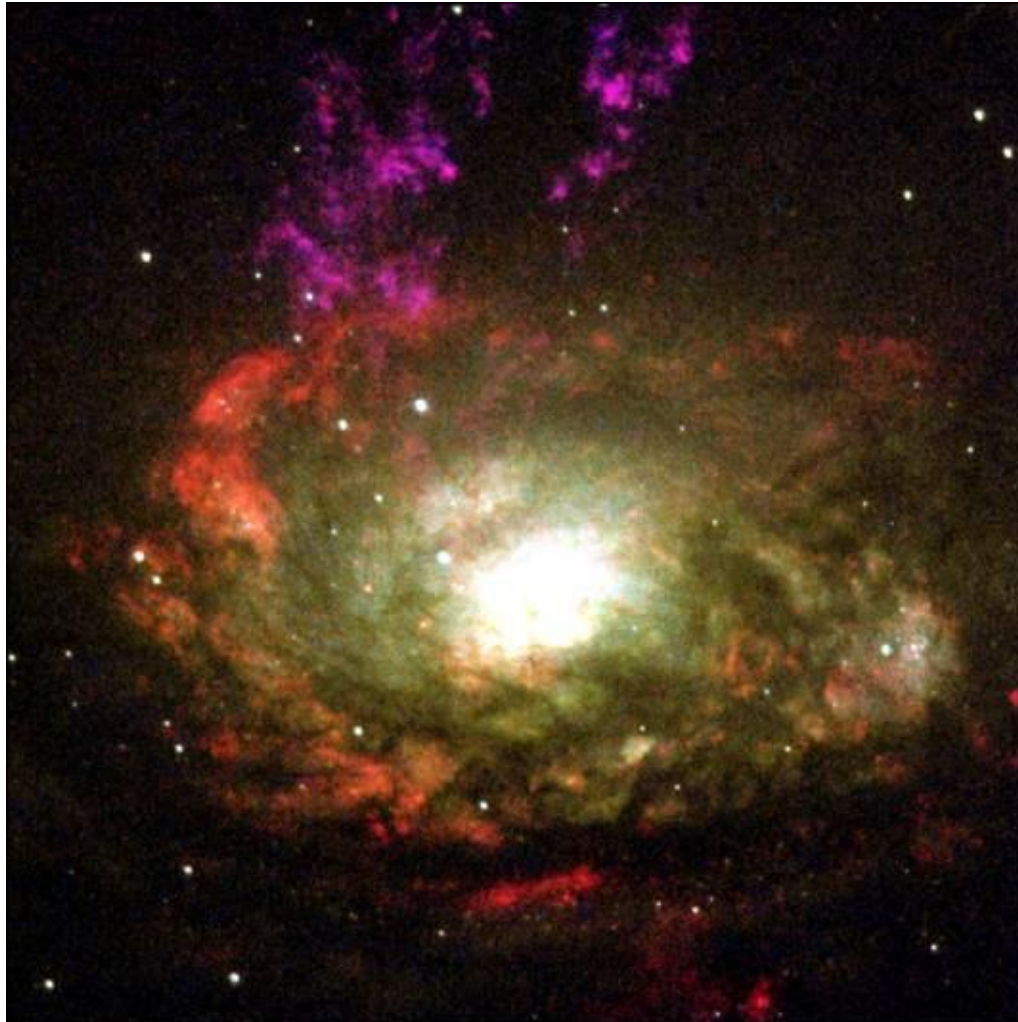
# HEC Business Support

- Innovation Support
- HEC Consultancy
- Brokerage
- Signposting
- Mentoring
- Networking
- Supply Chain Support
- Technology Promotion



# Cluster Development

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# What makes a CLUSTER...

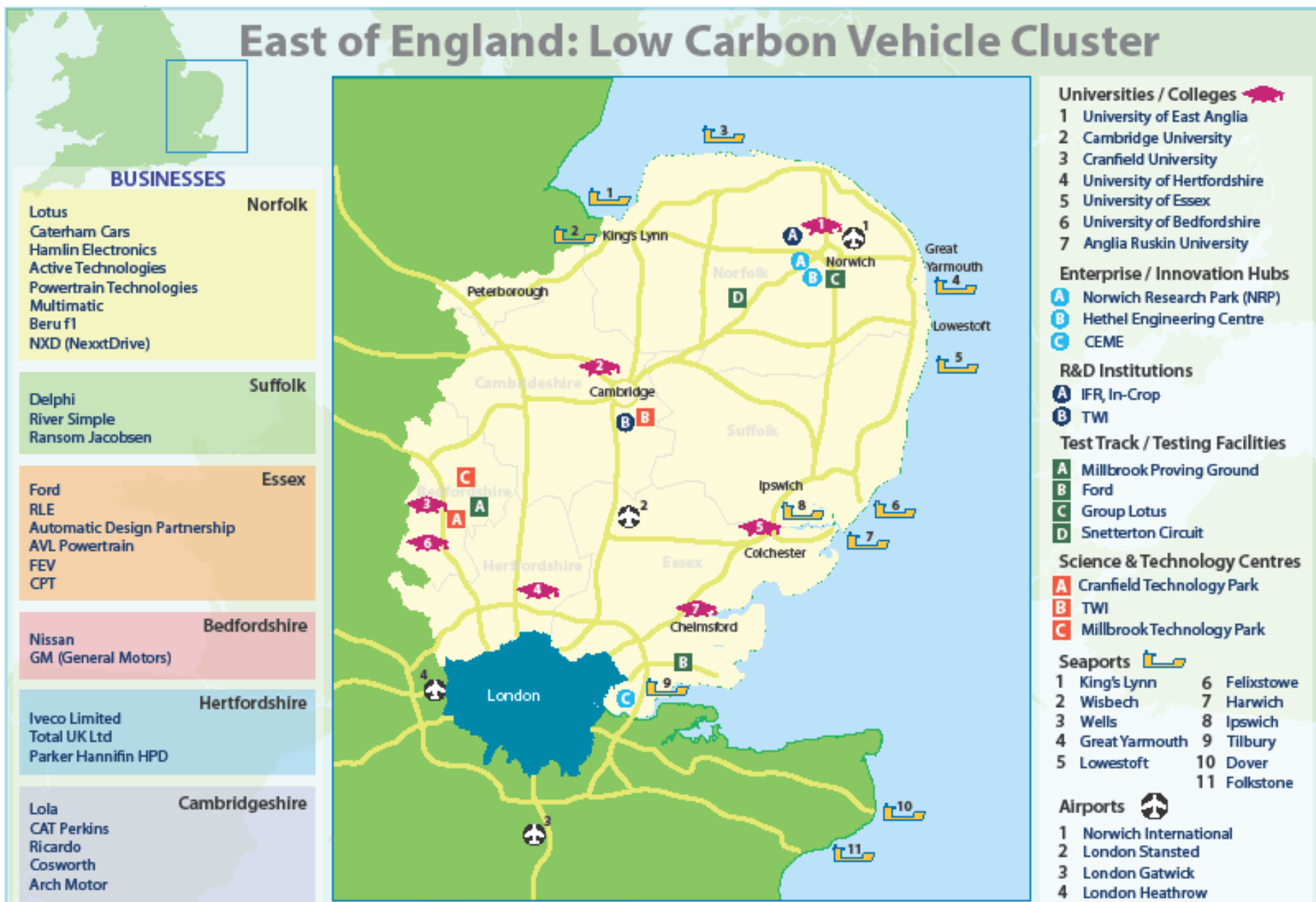
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- **OEMs:** Big Businesses:  
Lotus, Nissan, GM, Ford, Caterpillar, Case Holland....
- **Facilitators:** Enterprise / Innovation Hubs:  
HEC, CEME, Centre for Sustainable Engineering, Orbis, (NWES facilities)
- **Tech. Parks:** NRP, Cranfield Technology Park, Millbrook, CEME,
- **SMEs:** Small Businesses:  
Network of small businesses and tiers of suppliers
- **R&D Institutes:** Universities, Research Establishments:  
UEA, Cranfield, Cambridge, Hertfordshire, TWI, IfM,
- **Tools:** Project Management, Open / Structured Innovation
- **Funding:** Access to Finance, TSB, ERDF, Private (eg VC), HEC Launch pad / Hot desks
- **Manning:** Private sector experts, HEC team

Example cluster.....



# East of England: Low Carbon Vehicle Cluster



# Getting the Technology to Market

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- Business Led Innovation
- Addressing Market failure
- Joint Venture Partnerships
- Public / Private Financing



The Pilot Innovation Network...and Projects

# Pilot Innovation Projects (PIPs)

Pilot Innovation Projects													
Title:	Program Leader (if not HEC)	Project Brief	Key Partners	Funding	Public Funding	Estimated Impact	Jobs Created	Jobs Sustained	Activity	HEC time spent on Project	Closed	Open	Outcome
ERWE (Eastern Wind Energy)	Peter Wortley	Development of an Offshore Wind Turbine Component Supply chain in the Eastern Region.	Private PPI Cooper Kaydon Active technologies Gaurdline Marine Mason group Romax RLE PE Concepts	£ 11,000.00 £ 11,000.00 £ 11,000.00 £ 11,000.00 £ 11,000.00 £ 11,000.00	HEC EEEDA NCC GTBC First East	£10,000,000	1	9	Regular board meetings: presentation to vaternal and SSE	Dorian Hindmarsh 370		Open	
Tidal Energy	Mike Robinson	Development of Tidal Energy technology	PPI		HEC				Awaiting planning approval for demo	4		Open	
Solar Refrigeration	Karl Venter	Solar Electricity not from PV	Information Systems Active technologies	£ 50,000.00	HEC BRE	£100,000.00		3	Awaiting agreement with BRE ventures.	6		Open	
Clean Fuel Power Generation	Mitch Gaze	Gaseous base Syn-Gas for diesel cycle power generation from non recyclable waste streams	M Gaze Ltd Olive Engineering	£ 10,000.00	HEC EEegr			2	Pilot gasification plant built, running trials on waste fuel suitability on hold until further notice due to planning restrictions	5	Closed		project on hold due to planning restriction on site
DME fuel Generation	Glyn Owen	Creation of Dimethyl Ether for fuel, utilising high temperature plasma gasification processes	Olive Engineering Sapient Engineering Active technologies Mgaze Ltd Plasgas	£ 20,000.00	HEC EEEDA EEegr UEA	£9,000.00		2	Combine a Pilot plant for gasification to a high temperature Plasma catalyser to produce DME from non recyclable waste streams. New Partner, Plas gas	111		Open	
EV Race Car	Ansar Ali	Creation of an Electric Racing car for a single make series	Caterham Cars Active technologies ABSL systems Dove FIA MSA nextdrive	£ 20,000.00  £ 10,000.00	HEC UoH	£400,000.00	1	6	Develop new vehicle platform for EV racing. Guide and develop rules, regulations and infrastructure for alternatively power race cars.	20	Closed		Caterham have other commitments. PIP is being re developed with remaining Partners
HUB motor technology (EV Hybrid Demonstrator)	Philip Winkle	Development of a new Hub EV motor assembly	PW Ltd Bowels and Walker GM Active technologies Thurlow Nunn	£ 22,000.00	HEC EEEDA	£25,000.00	1	3	New hub development prototype under construction, new technologist brought on board Aug 2010	24		Open	
Range Extension Engine	Jeff Alan	New small, ultra efficient IC engine to provide range enhancing capabilities to EV vehicles	Phase 4 Research FIS Active technologies Scion Sprays		HEC Anglia Ruskin	£10,000.00		3	Engine modelling and research into Piston Lubricity currently carried out	5		Open	
DME Diesel Engine	Dave Thomas	Technology development in the conversion of a diesel cycle engine to run on DME	Olive Engineering Sapient Engineering Active technologies Delphi	£ 10,000.00	HEC UEA Anglia Ruskin		2	4	Business Plan being researched to scope business potential at the UEA. 2 MBA students supporting.	10		Open	
ITC measurements solutions	Steve Melech	New tool for optimising process measurement in engine manufacturing	MeiElectronics Ltd QM systems National Instruments	£ 50,000.00	HEC	£1,500,000.00		2	Engagement with potential development partners	10		Open	
Unique Transmission applications	Rod Keech	development of new transmissions for EV and Hybrid applications	Nextdrive	£ 5,000.00	HEC		4		prototype development of transmission	12		Open	
Off High Way hybrid multi purpose vehicle	Jim Router	3 seat multi use hybrid/EV	Router Automotive Parry Designs Ransomes Intl ABSL systems nextdrive	£ 100,000.00	HEC TSB			6	Prototype vehicle platform being manufactured, completion October 2010	20		Open	NEW PIP
Municipal grass cutting machinery for councils and large cutters	Tim Lansdale	Replacement technology for Hydrostatic drives	Ransomes Intl nextdrive ABSL systems	£ 20,000.00	HEC	£2,000,000.00		4	first stage meeting held beginning of August	4		Open	NEW PIP
EV Quad Bike	Colin Jones	off road narrow ev quad bike	Dove Design Chris Craft Westcotec	£ 50,000.00	hec	£100,000.00		4	bringing existing project to next level	1		Open	NEW PIP
Low Carbon remote Building structure monitoring	Ben Harker	remote monitoring of civil structures, to reduce inspection visits	Harker Systems Westcotec	£ 12,000.00 £6,000	HEC EEEDA	£500,000.00 £20,000.00	1	1	prototype development of product, new finance injected, EEEDA and Private	20		Open	
Low Carbon Media Lighting systems	David Hazel	LED lighting for Media applications reducing energy consumption	Hazel Designs	£ 5,000.00	HEC Epic	£200,000.00	1	2	prototype development of product, linking to LED manufacture in Bury	20		Open	
Online design services (ICT)	Ben Robinson	Online Interactive development tool and prototyping service to support concepts from any individual	Design It Make It Ltd	£5,000.00	HEC	£50,000.00		1	demonstrator web site	10		Open	

# New Pips

Low-Carbon multi purpose vehicles

Range Extension capabilities for EV's

Hybrid conversions to existing fleet vehicles



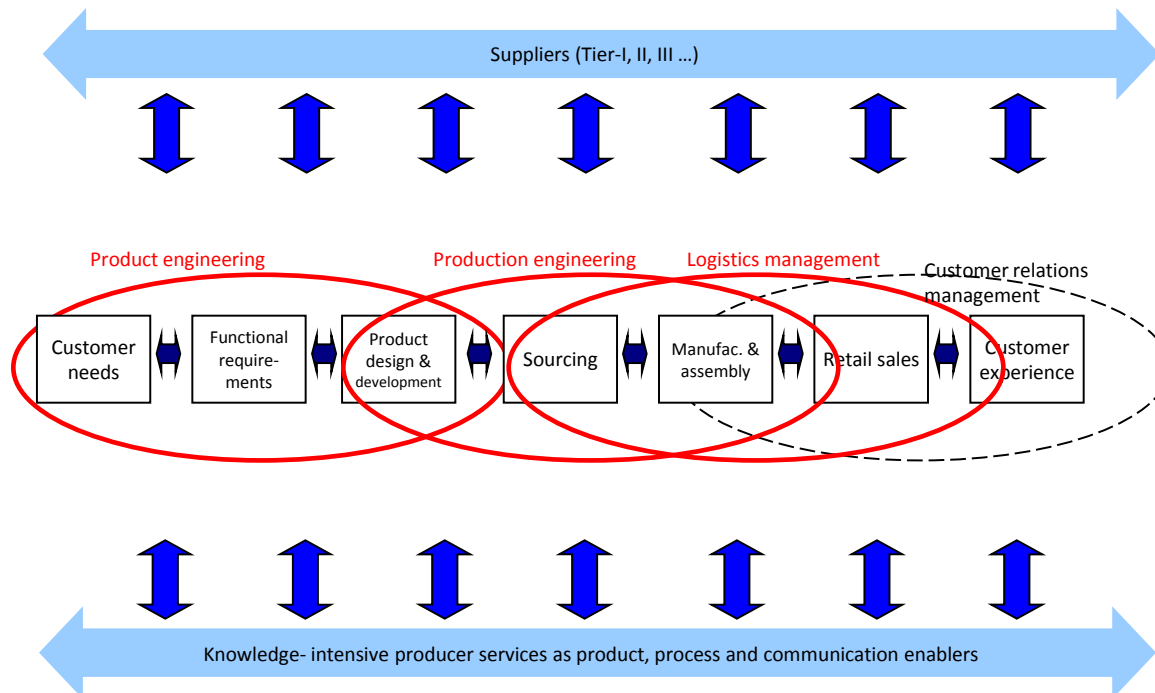


# PRODESC – „Producer Services for European Sustainability and Competitiveness”

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# Producer services?

- Knowledge-intensive producer services for sustainable mobility –
- Services in/around product and production engineering as well as logistics management
- Examples: product-design, R&D, engineering and IT/software-services, specialized logistics and more.



# PROSESC Project – Aims

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- Raising awareness on the significance of producer services
- Assisting regional authorities to identify, develop and share proactive strategies to support producer services and the enterprises that provide them
- Stimulating the creation of innovation environments for sustainable transport

# PRODESC Project –Partners

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- Stuttgart Region Economic Development Corporation (DE)
- University of Hertfordshire (UK)
- Government Office of Climate Change (SI)
- General Directorate for R+D+i. Ministry for Innovation and Industry. Government of Galicia (ES)
- Pannon Novum West-transdanubian Regional Innovation Non-profit Ltd. (HU)
- Province of Turin (IT)
- Norfolk County Council (UK)
- Regional Development Agency - West Region (RO)

# PROSESC Project – Activities

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- Study visits, the first in Norfolk, November 2011:
  - Workshop sessions with:
    - Group Lotus PLC
    - Vauxhall GM („Vauxhall Ampera“)
    - ABSL - specialist, military battery manufacturer.
    - RLE - specialists in automotive engineering development.
    - Gigatronik - vehicle electronics, Stuttgart / Germany
    - River Simple - specialist Hydrogen city car development
    - Scion-Sprays - low cost engine management system for small engines
    - EValu8 partnership - infrastructure for e-mobility
  - Lotus factory tour
  - EV-vehicles: demonstration and viewing



# PRODESC Project – Activities

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- Future study visits:
  - Slovenia, May 2011
  - Győr, October 2011
  - Turin, March 2012
  - Galicia, May 2012
  - Stuttgart, November 2012
- Exchange of good practices between partner regions
- Policy feedback on sustainable mobility to European Commission

# Summary;

## Now is the Time for Technology

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- In EV terms we are at the beginning of a technology race with no clear winners
- OEM's have been slow and reluctant to address LCV issues
- SME's develop the new technology which is fed into OEMs
- SME's account for 90% of the supply chain to OEMs \*
- Must be careful not to be swamped by options but drive for the better outcomes.

\*Source: EU SMEs and subcontracting report / October 2009, conducted by EIM Business & Policy Research (the Netherlands) and Ikei Research and Consultancy (Spain)]

# HETHEL ENGINEERING CENTRE

*'...engineering sustainable solutions for a sustainable future....'*

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