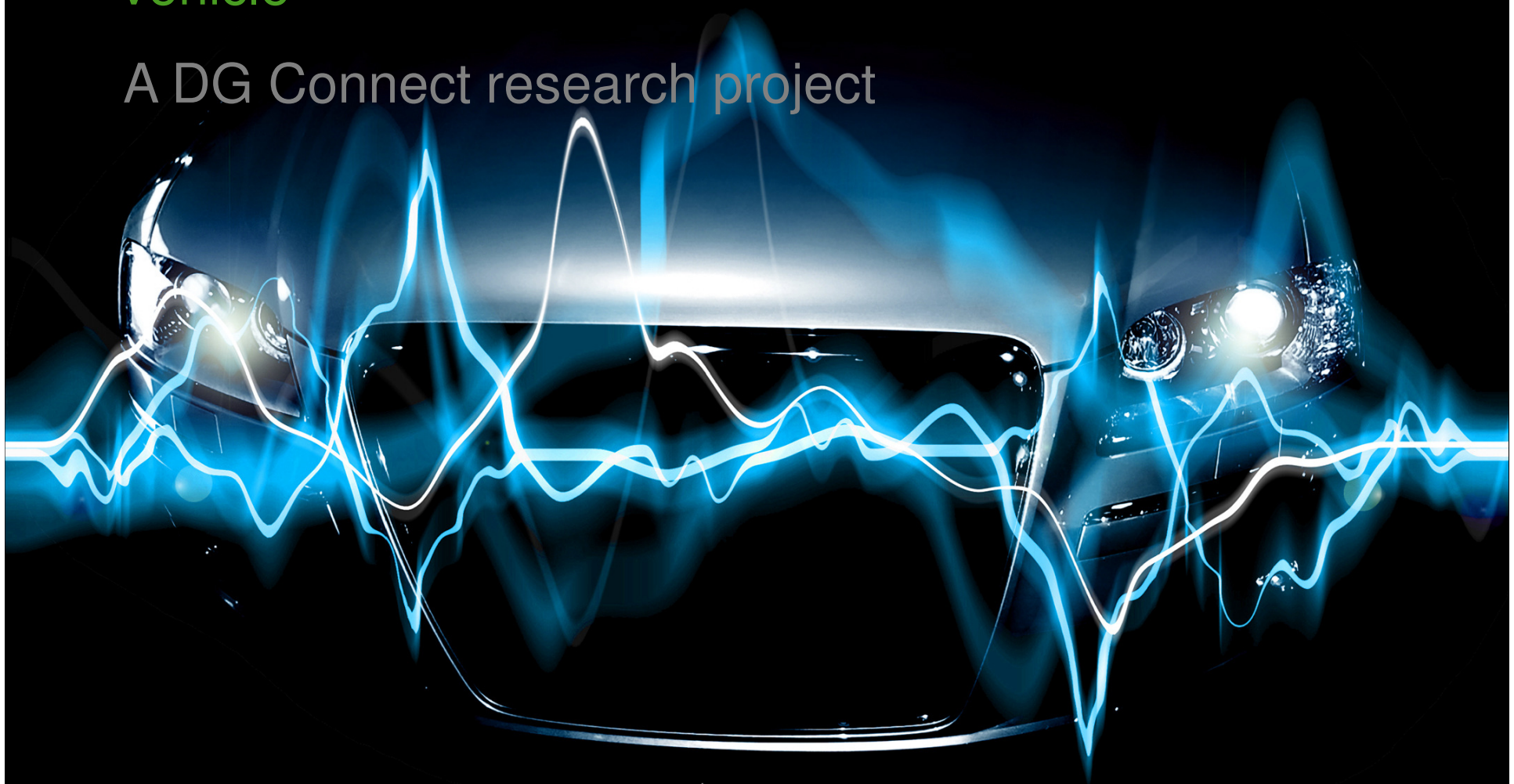


The impact of ICT R&D on the large scale deployment of the electric vehicle

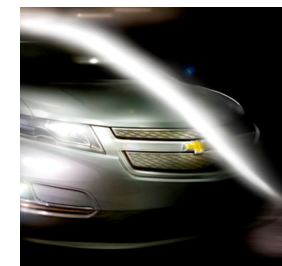
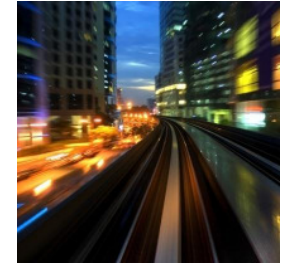


A DG Connect research project



Matthew Morris – EGCI Clustering Event, 11th July 2012

- Introduction to AEA
- Overview of the DG Connect Study
- A selection of draft results
 - Technology opportunities
 - Future value chain
 - Future market
 - Patenting activity
 - Environmental impacts of electric vehicles
- Further stakeholder consultation



A global sustainability consultancy

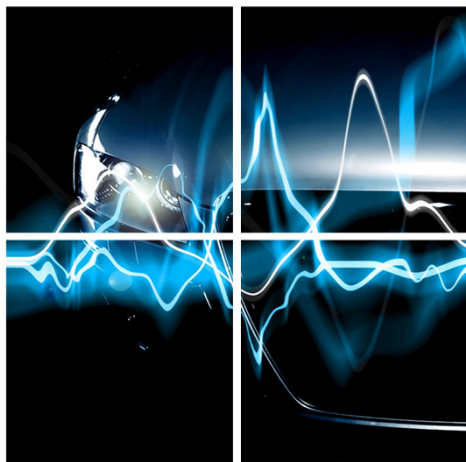
Based in Europe and North America, advising policymakers, business leaders and NGOs in all aspects of sustainability

Sustainable Transport Practice

- A key advisor to the European Commission on policies to reduce the climate change impacts of the transport sector
- Studies on future cost, performance, socio-economic and environmental benefits of electric vehicles
- Involved in EV R&D through the UK Technology Strategy Board
- Clients include:



Overview of the DG Connect study



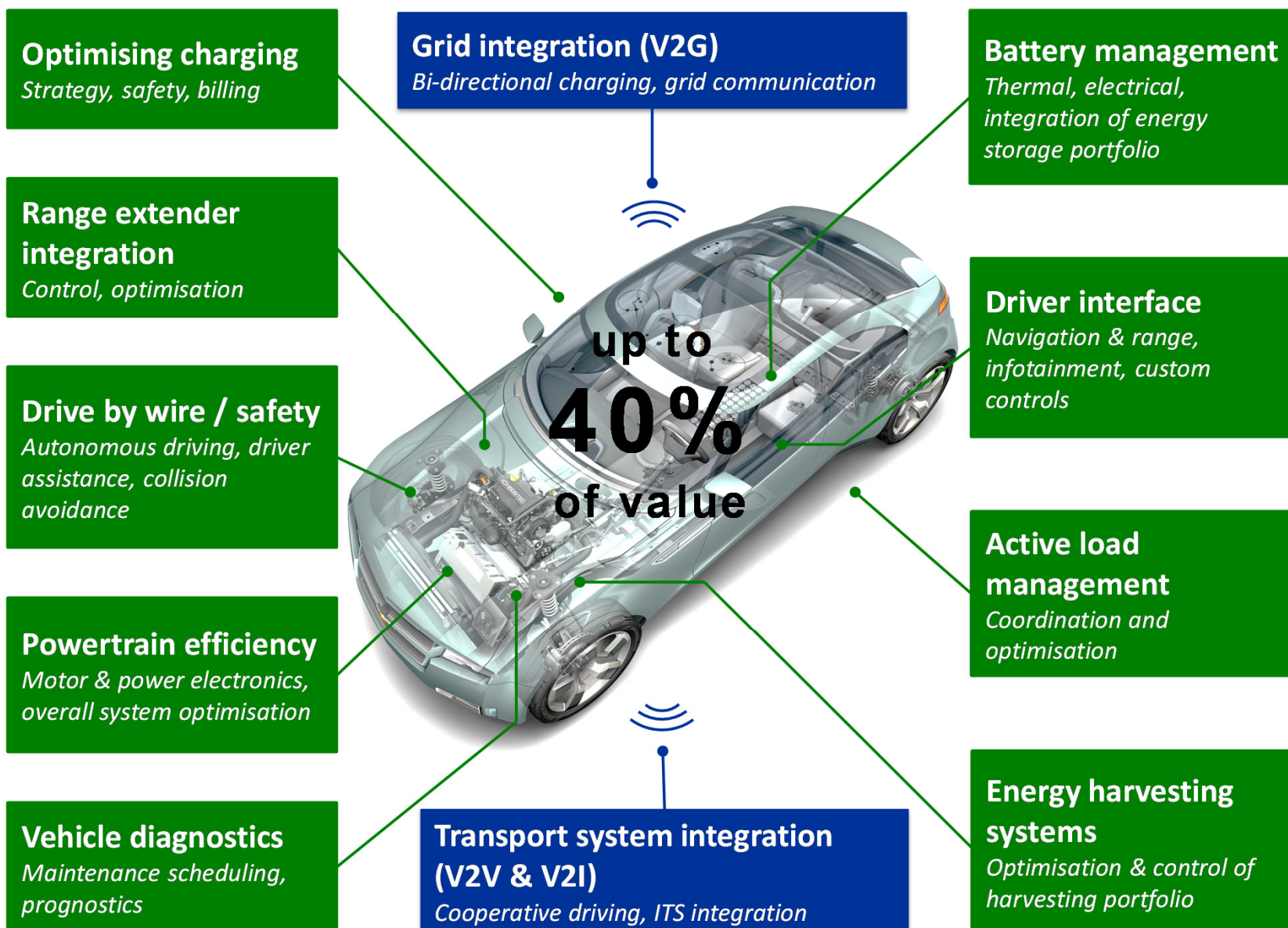
The impact of ICT R&D on the large scale deployment of the electric vehicle

A 12-month study to highlight future priorities in R&D funding, completing in late 2012

Includes the following work packages:

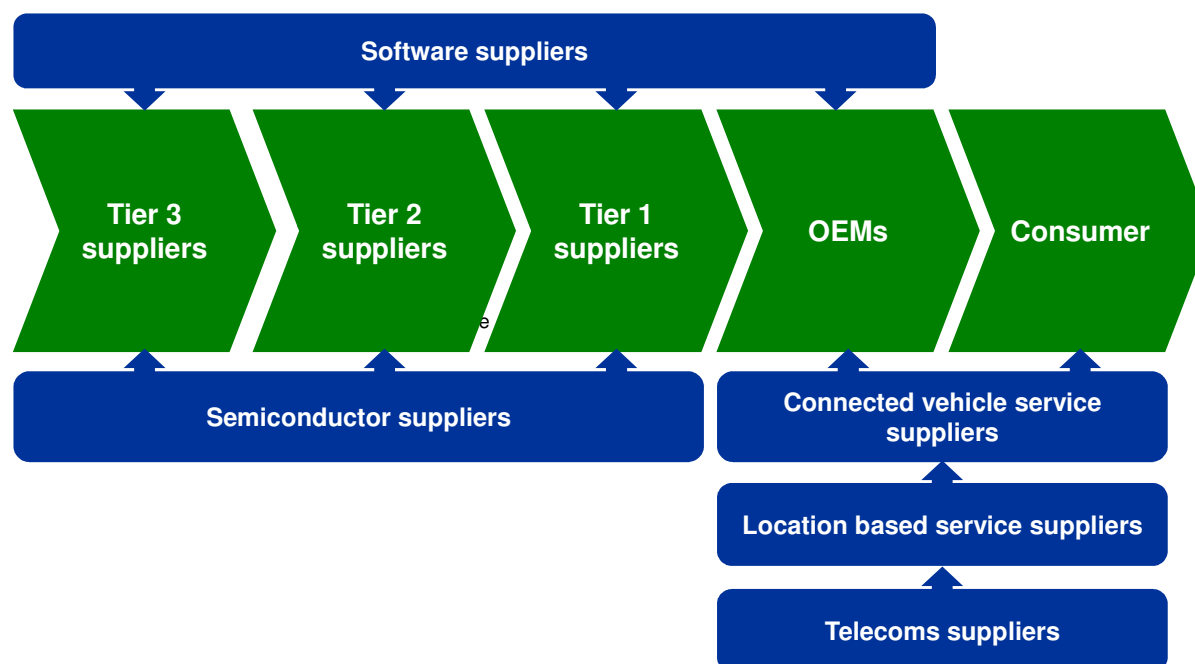
- A. Analysis of the **current state of play** in Europe's EV industry
- B. The **future potential** for development and commercialisation of ICT for the electric vehicle in Europe vs other regions
- C. A review of **barriers & hurdles, and roadmaps** to overcome them
- D. The **environmental and health impacts** of electric vehicles
- E. Electric vehicle's **contribution towards European socio-economic objectives**
- F. Conclusions and recommendations for **future R&D strategies** in ICT for the electric vehicle

Draft Results: technology opportunities



Draft Results: the value chain

- Shift in technological focus
- New value chains enabled by ICT
- Potential value chain shake-up



Value-add shifts in EVs

Large increase

Energy storage systems – up to 60% of value

Power electronics and electric motors

Connected vehicle hardware and services

Energy harvesting and energy management

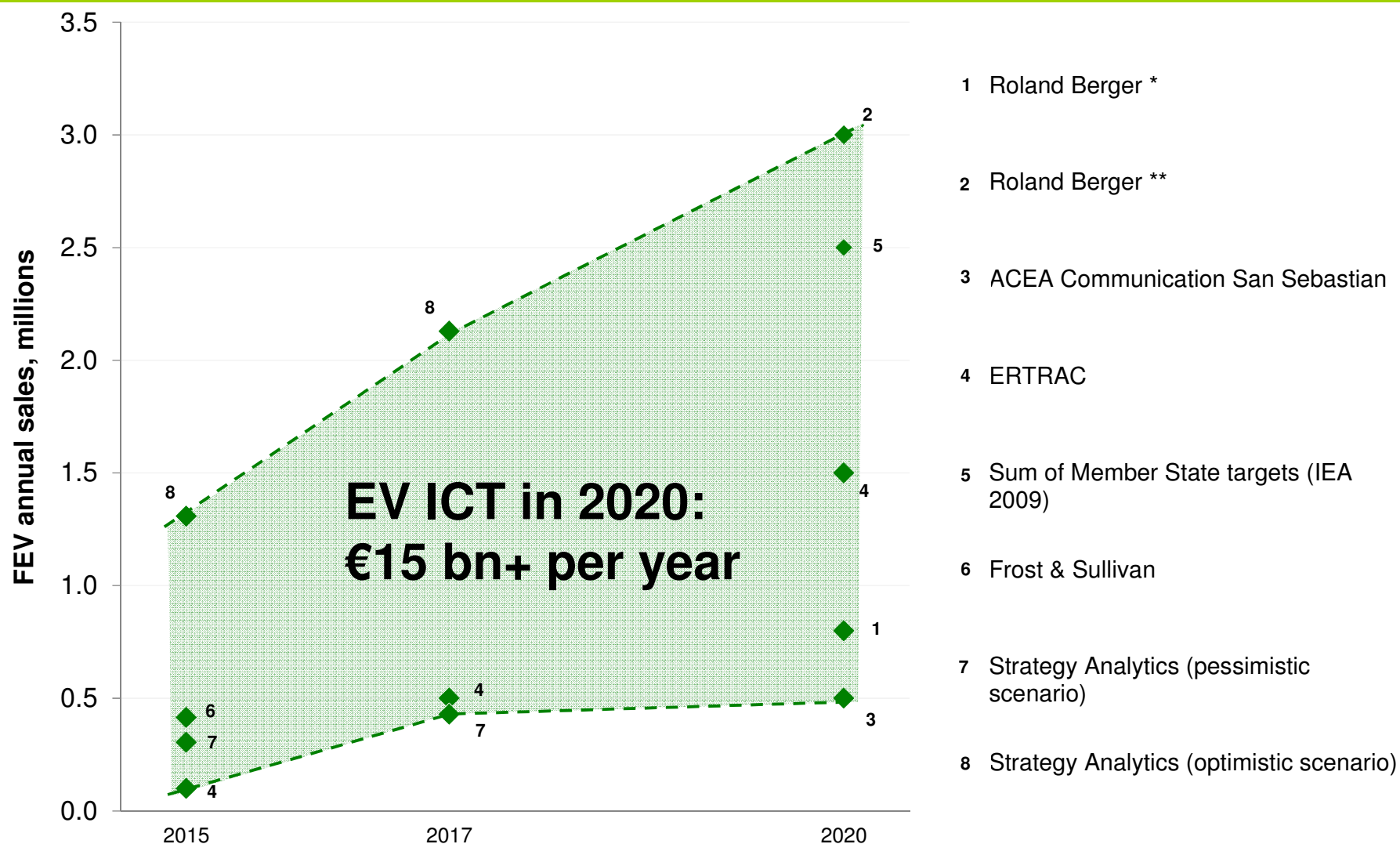
Internal combustion engines

Aftermarket components

Decrease

ICEV powertrain – (gearbox, transmission etc)

Draft Results: the future market

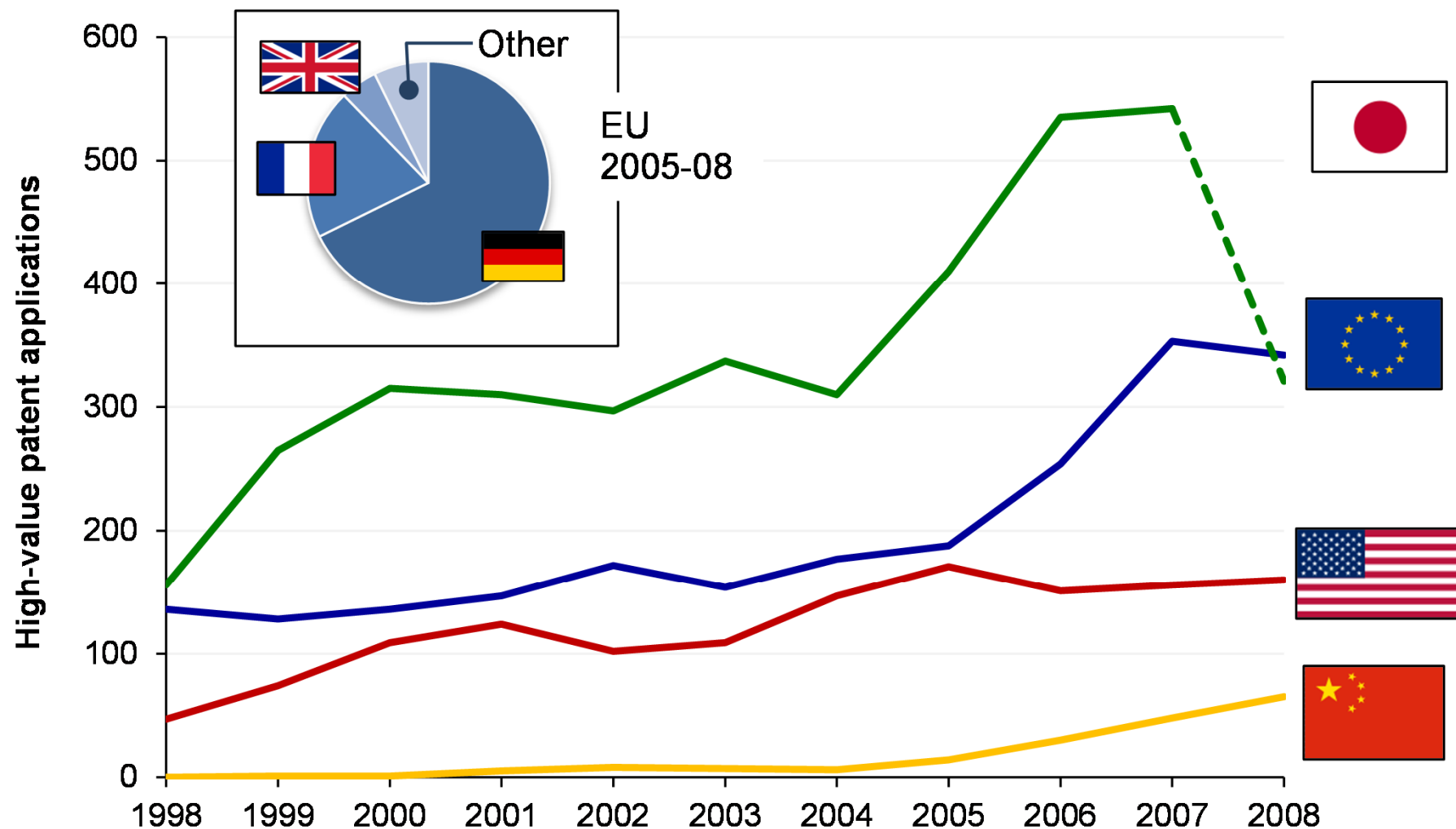


*Potential EV customers based on car buyers who have access to infrastructure and a compatible mobility profile

** "The future drives electric" scenario - higher oil prices, accelerated battery cost reduction, stronger government support and a broader FEV product range in the next five to ten years

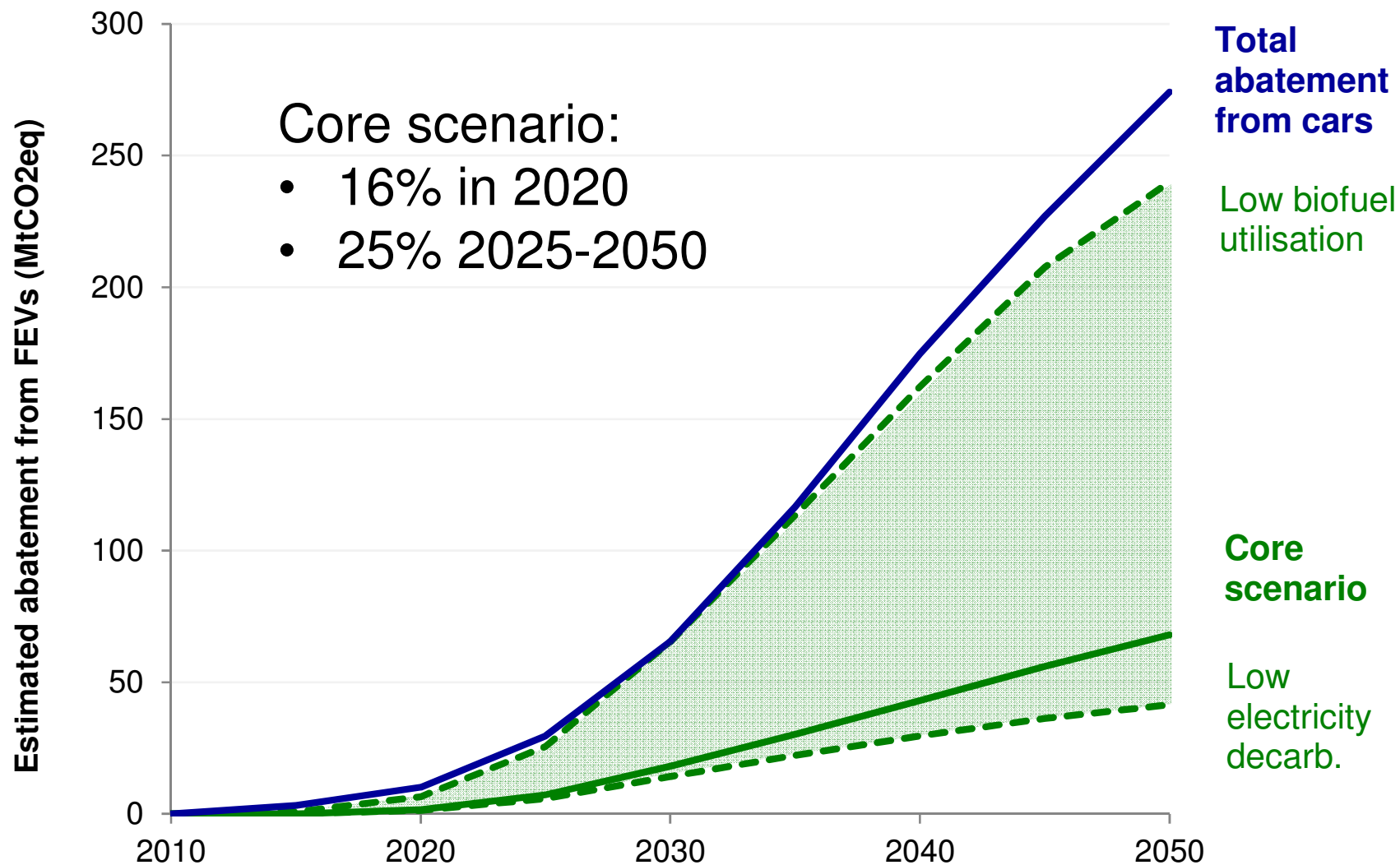
Draft Results: patenting activity

‘High-value’ patenting activity in EV-ICT technology by region:



Draft Results: GHG savings

FEV contribution to total GHG abatement under 3 scenarios



We would like further input from industry experts

- Previous interviews have provided valuable input
- A second round of expert interviews planned in July/August; a final stakeholder event is planned later in the year
- ~1 hour discussion covering:
 - Technology priorities to maximise deployment & competitiveness
 - Implementation / types of project to deliver maximum benefit
- Experts in ICT for EV are invited to make contact

Matthew Morris

Project co-ordinator

T: +44 870 190 2844

E: matthew.morris@aeat.co.uk

Duncan Kay

Senior consultant

T: +44 870 190 6357

E: duncan.kay@aeat.co.uk



AEA

Matthew Morris
Consultant, Sustainable Transport

AEA
14th Floor
Marble Arch Tower
55 Bryanston Street
London, W1H 7AA

Tel: +44 (0)870 190 2844
E: matthew.morris@aeat.co.uk
W: www.aeat.co.uk

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