UK-US BRIDGING TECHNOLOGY: HYDROGEN & FUEL CELL BRIEFING

US Senate/House Hydrogen & Fuel Cell Caucus

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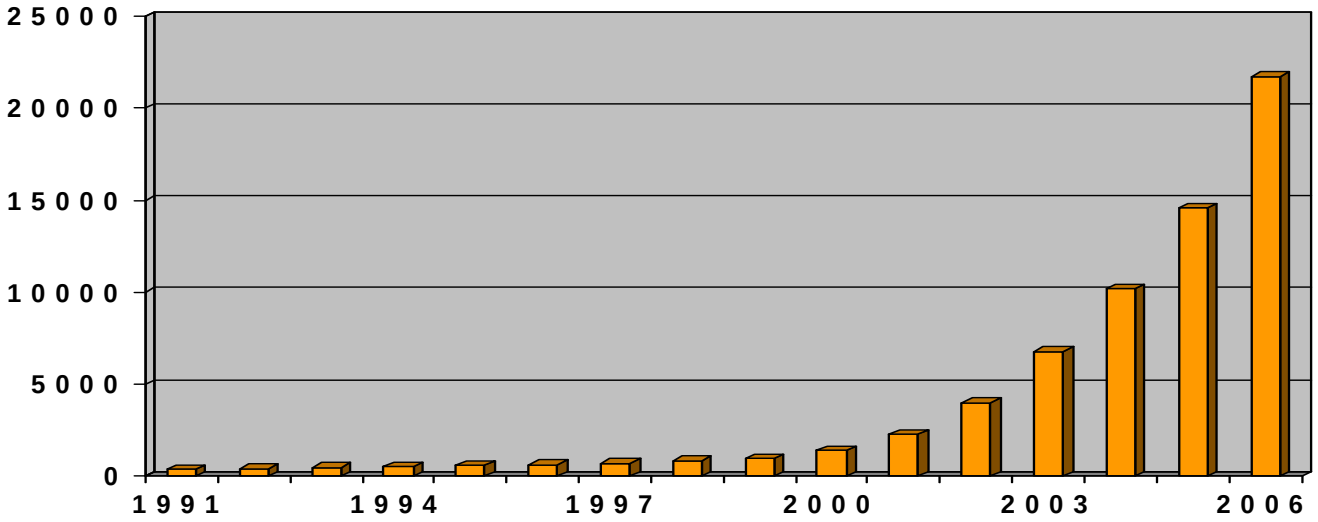
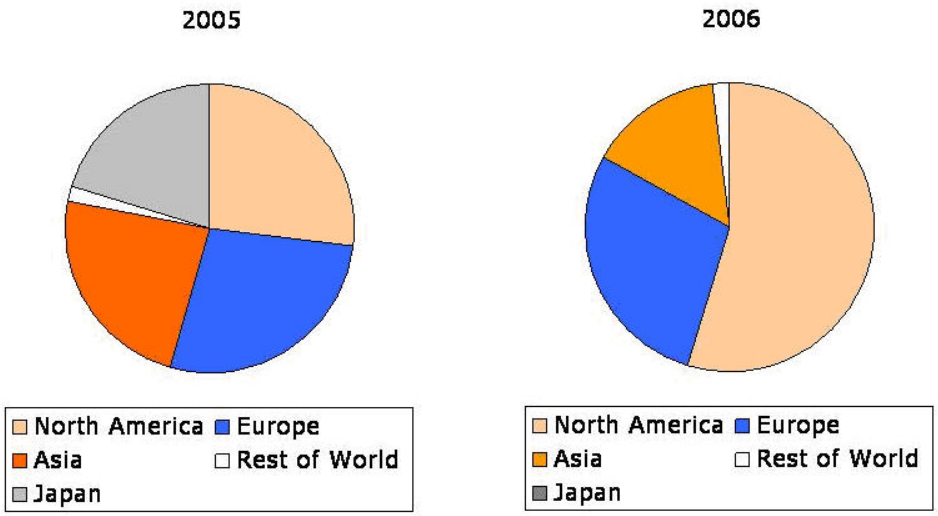
Global Market Growth



Cumulative fuel cell units installed between 1991 and 2006

Fuel Cell Distribution by Global Region



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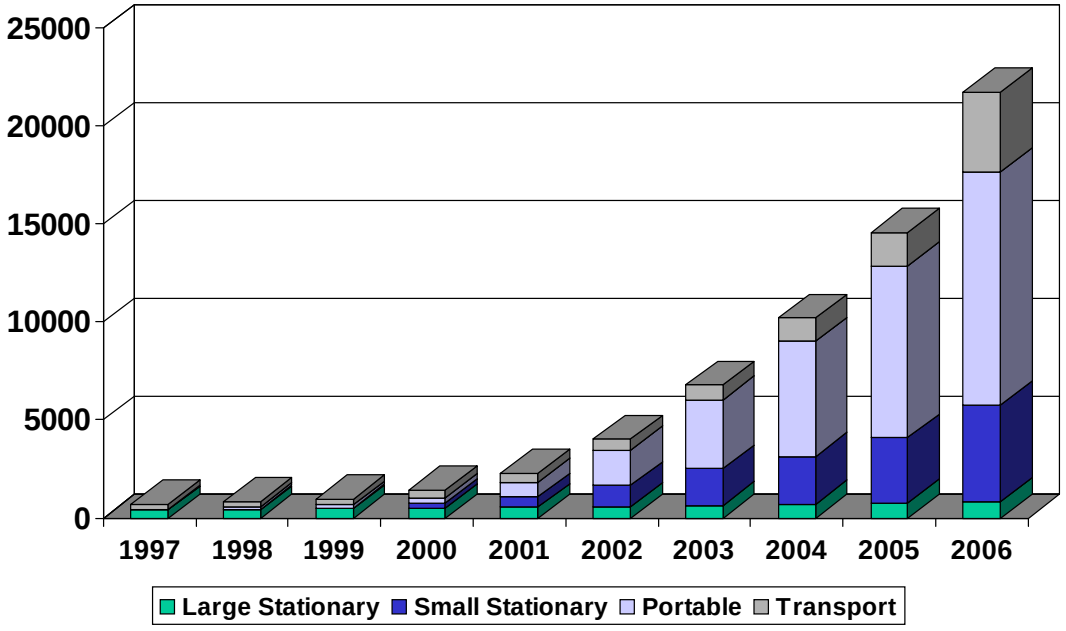
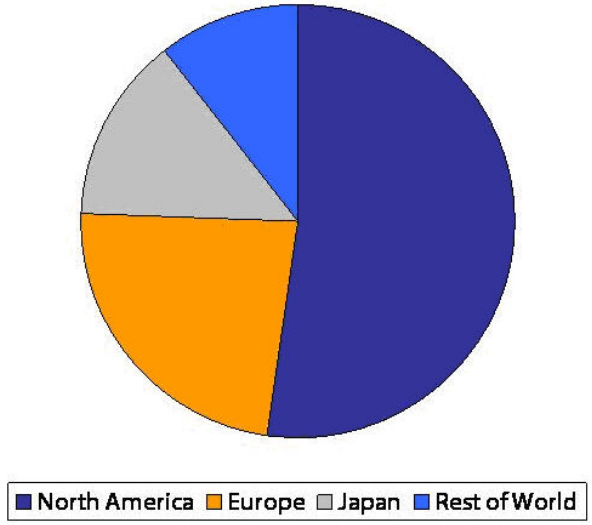
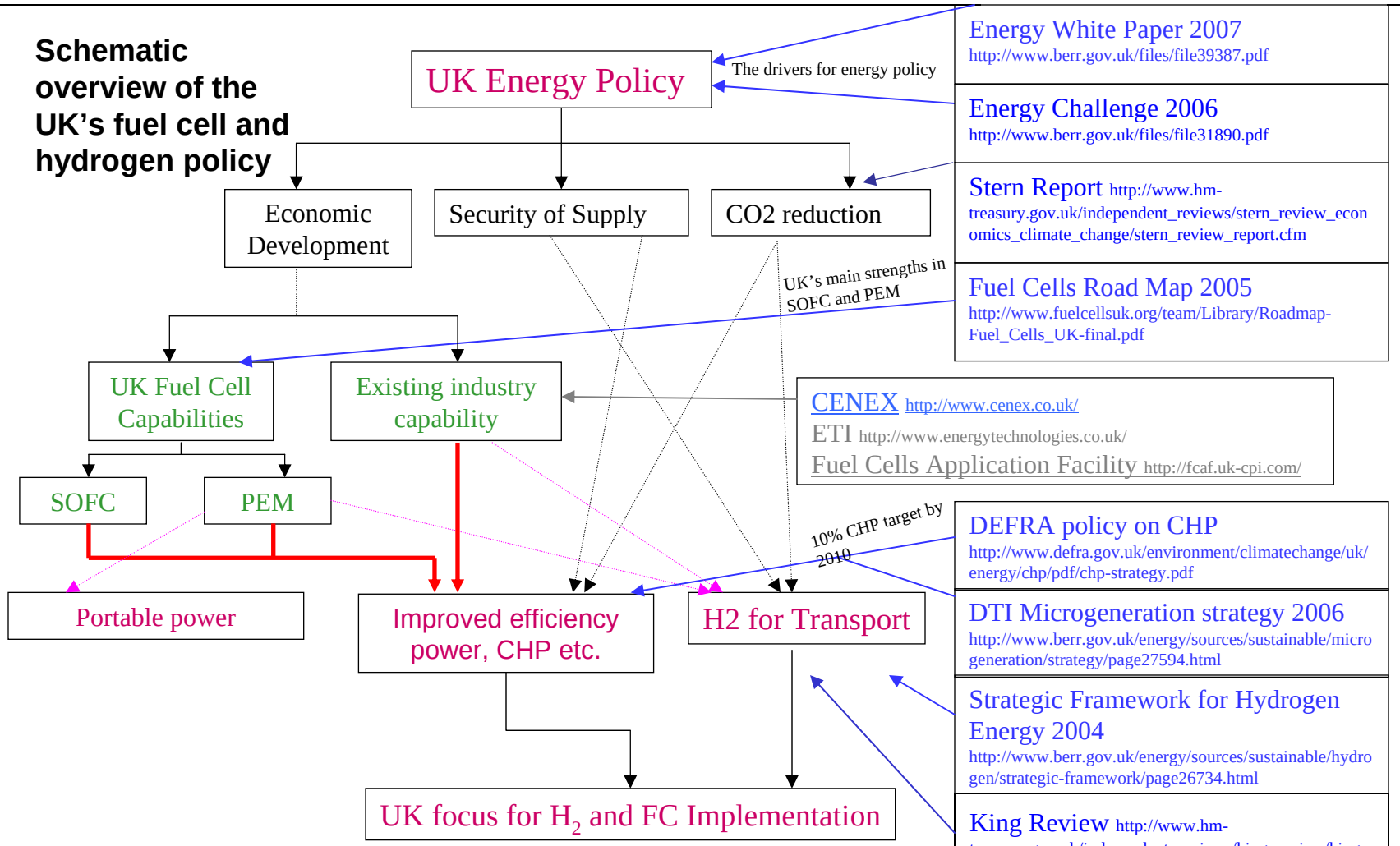
Growth of cumulative fuel cell units per application between 1997 and 2006



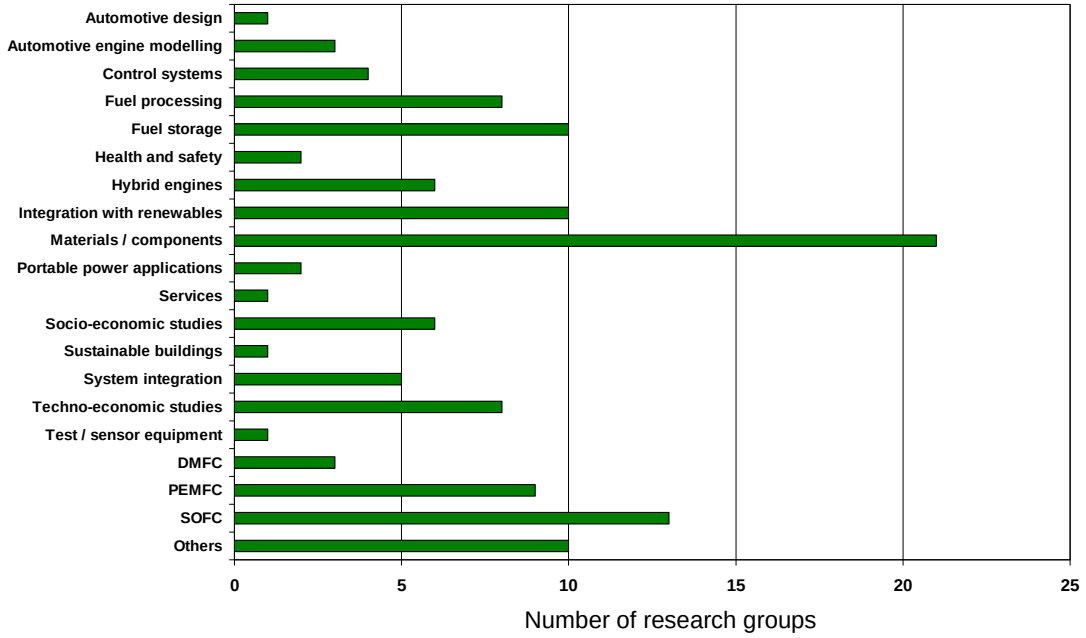
Regions of development of portable fuel cell units in 2006



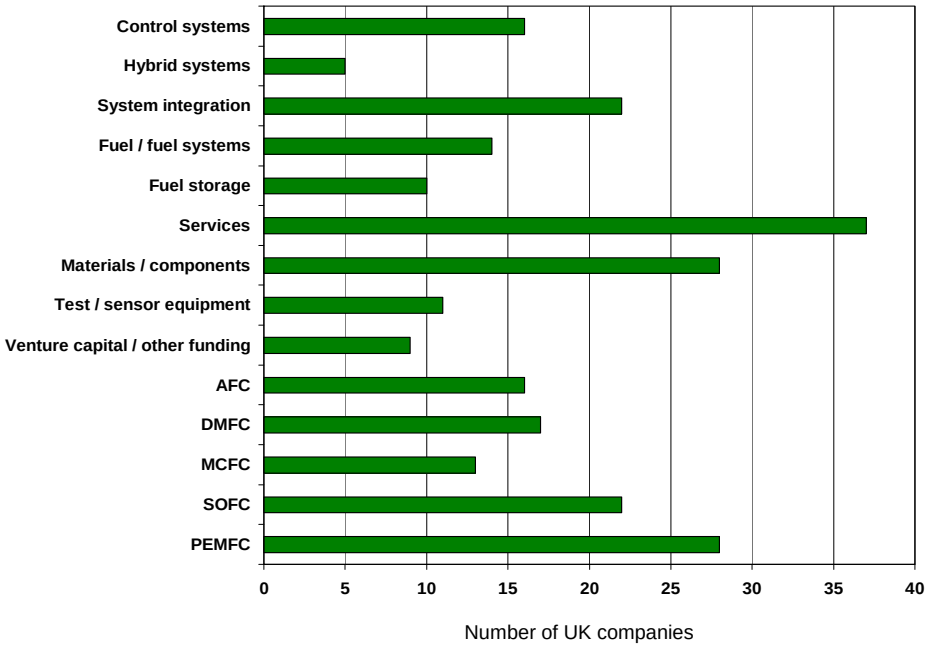
Schematic overview of the UK's fuel cell and hydrogen policy



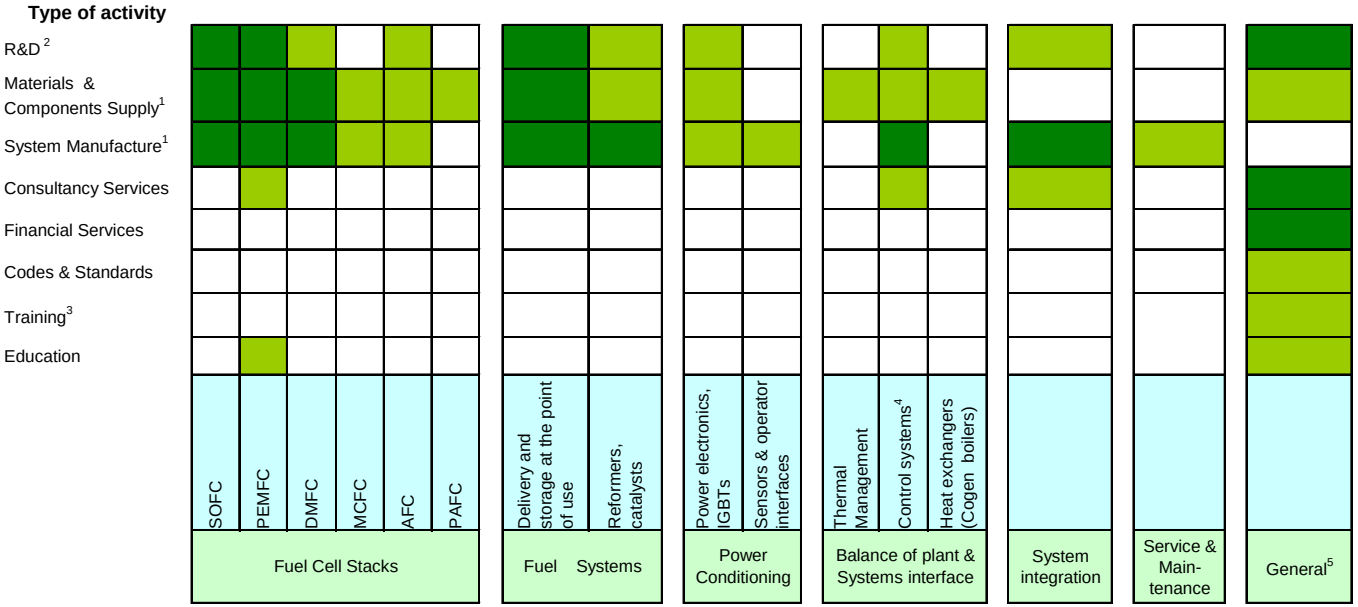
UK research organisations active across different parts of the fuel cell supply chain



UK companies active across different parts of the fuel cell supply chain



UK strengths along the fuel cell supply chain



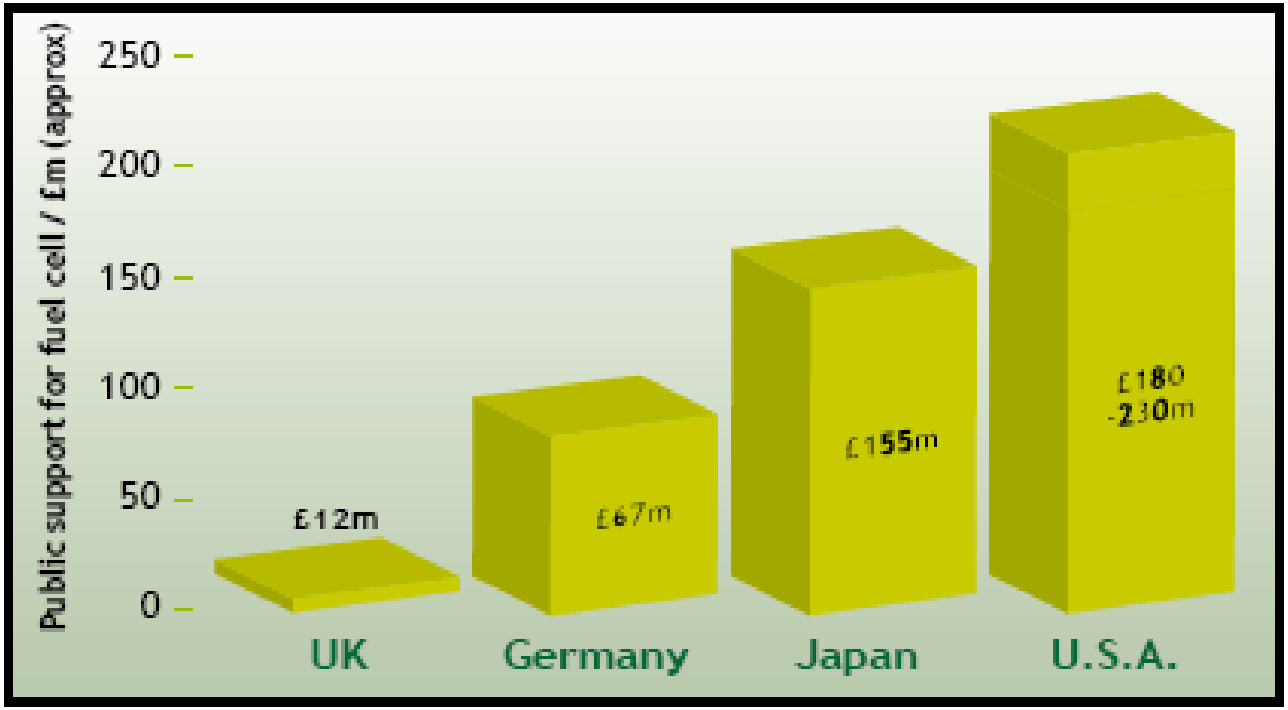
Key

Strong activity (act at a national or international level)

Limited activity (act at a local or national level)

1 Includes developers that do not have large-scale manufacturing
2 Includes contract & academic R&D
3 Training for field engineers, fitters, etc.
4 Includes actuators, sensors & electronics
5 Encompasses organisations active across many parts of the supply chain (e.g. Consultancy for all fuel cell types)

Annual levels of public support for fuel cells across different countries



Strengths -Government commitment to tackling climate change and energy security, and associated policy instruments -Internationally active fuel cell companies (mostly in PEMFC and SOFC – see below) -World leading academic activity (see below) -Transport specific drivers, such as new vehicle emission limits -Established automotive activity, with potential to embrace new industrial opportunities -Plans to deploy up to 70 hydrogen fuelled vehicles in London -Existing hydrogen infrastructure, which could form the basis of refuelling infrastructure -Stationary power specific drivers, such as support for micro- and distributed generation -The deregulated energy market and imminent requirement for investment in new generating capacity -Favourable tax regime	**Weaknesses** -Relatively low levels of Government support (although improving) -Absence of hydrogen refuelling infrastructure -Perceived high cost of manufacture -Lack of long-term support strategy
Opportunities -short term opportunities for R&D collaboration, building on UK industrial and academic credentials (see below) -longer term opportunities to partner with existing industrial capabilities (e.g. for manufacturing) -longer term opportunities to fill gaps not met by UK capabilities (e.g. fuel cell powered cars)	**Threats** -Failure to establish hydrogen refuelling infrastructure, making the UK less attractive than other locations, particularly for transport applications -Low-cost manufacturing economies, requiring the UK to be able to compete in other ways to attract manufacturing

Thank You!

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