5th Smart Grids & Cleanpower Conference
5 June, Cambridge
www.cir-strategy.com/events

Department of Energy & Climate Change

DECC Innovation Programme
The story so far…
5 June 2013

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DECC Innovation Programme – The story so far…

Department of Energy & Climate Change

- Outline of DECC support to innovation
  - Why we need innovation in energy.
  - The government landscape - Why is government support needed.
  - What we're doing so support innovation.
- The Entrepreneurs Programme
  - How it works
  - What makes a successful application
  - What sort of companies and technologies are in the scheme to date.
  - What we've learned for the upcoming next phase.
  - What we're learned from incubation.

DECC Mission is to power the country and protect the planet.

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- DECC exists to head off two risks:
  - a shortfall is secure, affordable energy supplies
  - catastrophic climate change

"the development of low-carbon energy is progressing too slowly to prevent devastating levels of global warming" - IEA report 2013

The benefits of innovation

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Energy innovation supports three objectives:

Achieving 2050 targets	Innovation is needed to adapt low carbon technologies to the UK's needs, and develop those which other countries are unlikely to lead on.
Reducing risk & costs	Technology innovation reduces the cost of commercial deployment, making it more cost effective for business to invest in our energy infrastructure and ensure security of supply.
Economic Growth	Investment in innovation can grow UK companies, and encourages others to locate their supply chains in the UK, bringing jobs and growth potential.

High upfront costs, long timescales and high levels of uncertainty means private investment alone is unlikely to be sufficient to meet these aims

Our criteria for innovation support…

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- Support will be provided where:
  - the innovation will significantly contribute to the achievement of DECC's energy and climate policy goals; and
  - there is clear evidence that the innovation need that would otherwise be unmet, i.e. where there are market failures or barriers that prevent/limit private sector investors; and
- other actors (UK or international) have not, or are unlikely to, provide sufficient support; and
- the potential benefits can be shown to be likely to exceed the costs.
- The focus of the portfolio will be primarily on the later innovation stages i.e. late stage development and partial and full scale demonstration (TRLs 5/6 to 8/9). The portfolio may however in exceptional circumstances fund innovation at the earlier stages, where other actors cannot or will not do so. It may also collaborate with other funders who are active at earlier TRLs, while seeking to maintain its own focus on the later TRLs.
- **Support is legal under EU law**

Bridging the valley of death

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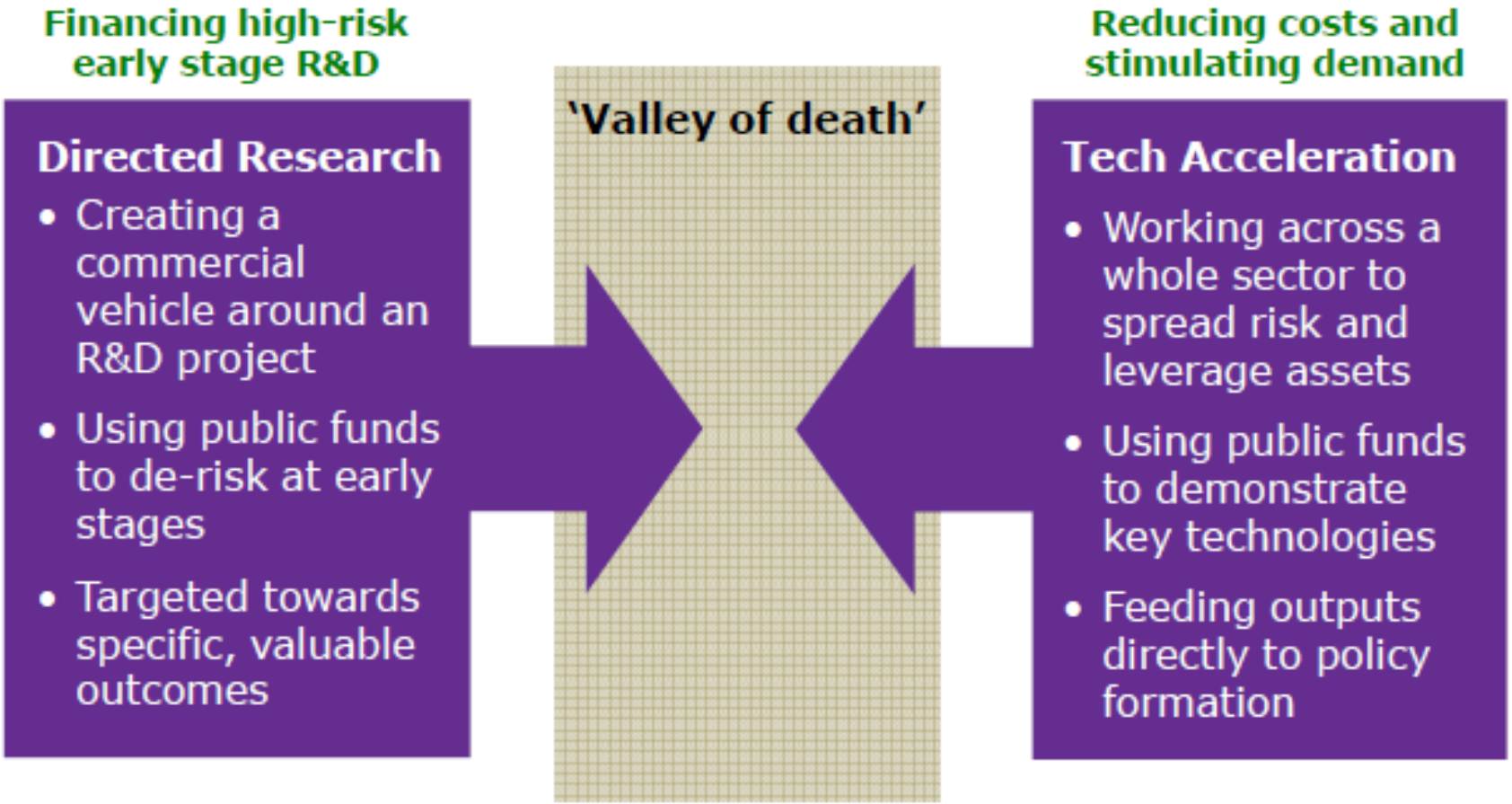

Source: Carbon Trust analysis; Mahler Ventures Ltd

How do we support innovation?

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1 **Technology 'push'**: direct funding

- For research & development
- For demonstration

2 **Market 'pull'**: indirect funding

- Market adjustments to support particular technologies (e.g. feed-in tariffs, the renewables obligation)
- Ensure electricity prices reflect carbon savings (e.g. emissions trading)

3 **Remove barriers** to technology development (e.g. resolve planning and grid issues in advance; or support for innovative companies)

Stages of development

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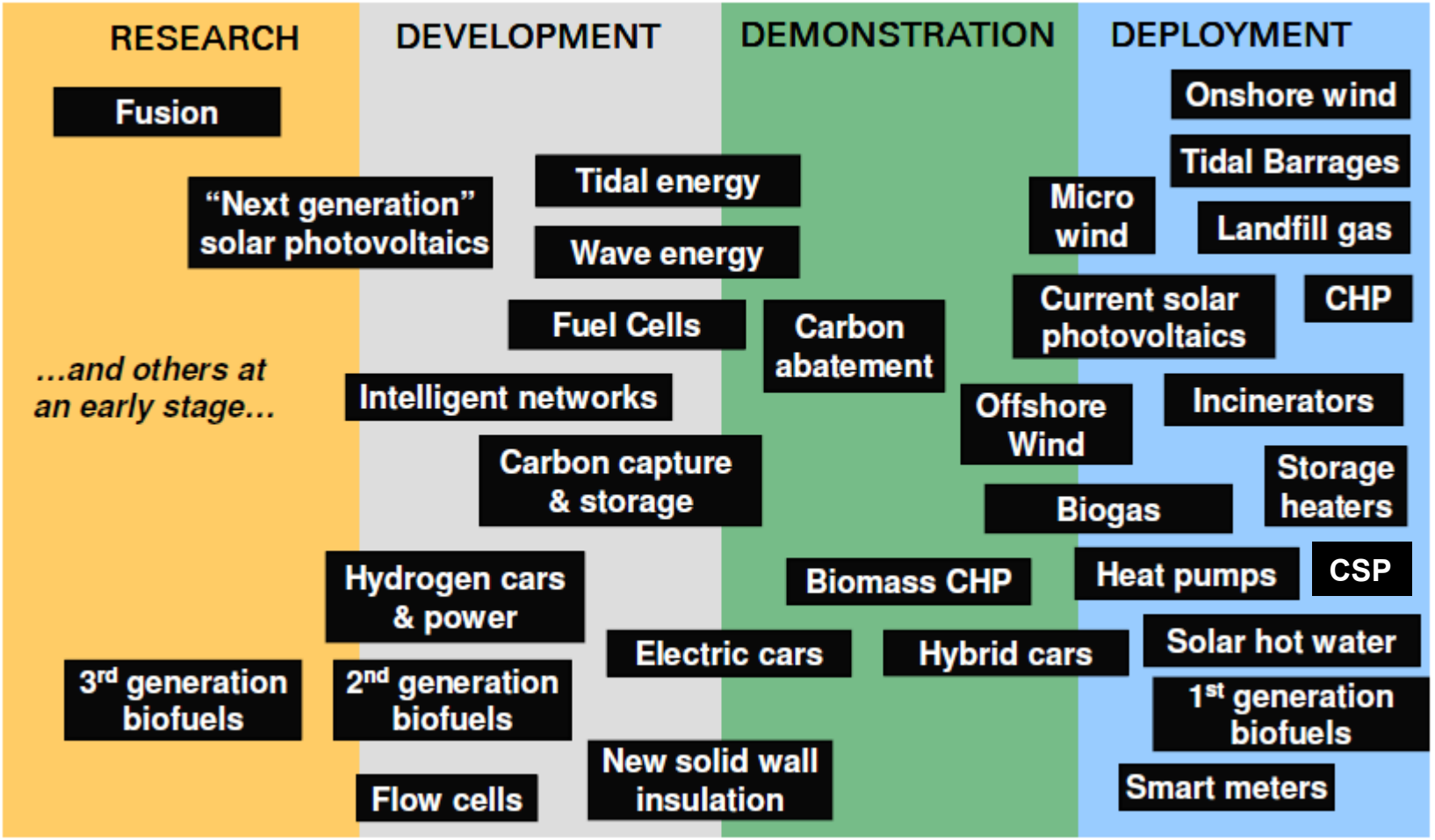
Huge range of technologies worldwide, at all stages of development:



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Need for Government Support

The Innovation Landscape

Prioritisation and Programme Planning

DECC's Current Low Carbon Innovation Programme

UK govt innovation funding, who does it, how much and benchmarking against other nations.

LCICG
Low Carbon Innovation Co-ordination Group

Maximise the impact of UK public sector funding for low carbon technologies.

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The Scottish Government

energy technologies institute

Department for Business Innovation & Skills

CARBON TRUST

Scottish Enterprise

EPSRC
Engineering and Physical Sciences Research Council

Technology Strategy Board
Driving Innovation

Llywodraeth Cymru
Welsh Government

THE CROWN ESTATE

ofgem

Northern Ireland Assembly

Department for Transport

UK TRADE & INVESTMENT

Department for Environment Food & Rural Affairs

Department for Communities and Local Government

Defence Infrastructure Organisation

http://www.lowcarboninnovation.co.uk/

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- Need for Government Support
- The UK Innovation Landscape
- **Prioritisation and Programme Planning**
- DECC's Current Low Carbon Innovation Programme

Technology prioritisation:
Technology Innovation Needs Assessments

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- The TINA project was launched in August 2010 with the aim of creating a robust knowledge base to guide government investment decisions.
- The project highlights the innovation needs of those technologies likely to be most important in delivering our energy and climate change targets.
- TINAs create a common understanding of innovation needs and the case for support, to facilitate coordinated planning between LCICG members and with developers.
- They allow cross-comparison and prioritisation between technologies.
- The TINA project facilitates government sending clear messages to developers about UK priorities and approach.

TINA Technology Areas

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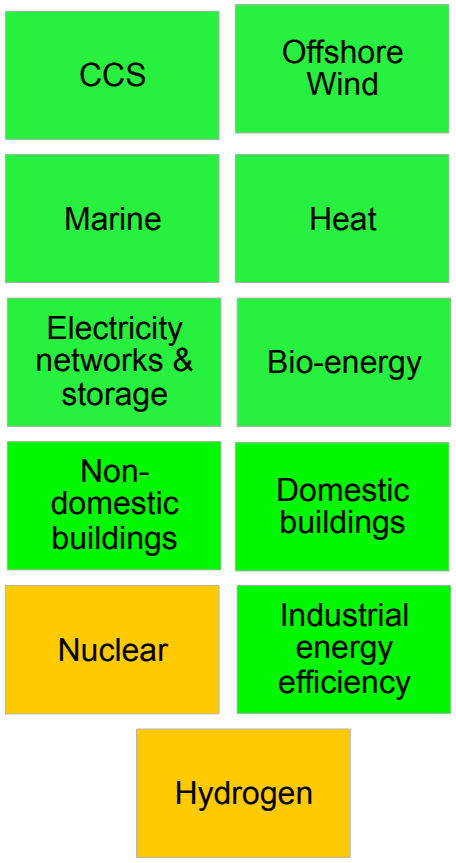
11 TINAs - 10 published, 1 (Hydrogen) due by May 2013… Hmm.. Late may



- Each TINA developed as a collaborative effort amongst LCICG members with input from all. DECC coordinated and funded the project for LCICG. Carbon Trust project-managed and led on the analysis.
- Each TINA drew on existing analysis where available, augmented with fresh analysis as necessary.
- TINAs use dedicated ETI ESME and the Committee on Climate Change's Markal runs to underpin the analysis.
- Key elements were tested with industry and academic experts on a bilateral basis and through at least one industry workshop per TINA.
- All TINAs follow as consistent a methodology as possible – to allow some cross comparison of conclusions and cross-technology prioritisation.

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Innovation Funding:
Outline Programme Areas

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- Offshore Wind – up to £30m
- Marine Energy – up to £20m
- Carbon Capture and Storage – up to £20m
- Fuel Cells - up to £5m
- Waste and Biomass Conversion – up to £10m
- Buildings and energy efficiency – up to £20m
- Electricity Storage – up to £20m
- (Renewable Hydrogen Production included above)
- Entrepreneurs Fund: – up to £35m
- Nuclear – up to £5m

Total budget outlined £160m over the 4-year Spending Review period

DECC Energy Entrepreneur Fund

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- Supporting technologies to market
- So far about 30 active projects with grants to value of £15million
- Wide range of technologies…
  - AD systems
  - Micro-Wind
  - Low energy lighting
  - Electricity storage
  - Grid technologies
  - Heat stores
  - Heating efficiency
  - CCS

What we're learning…

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- We need to keep streamlining administration…
- Small companies are hard work for us
- Often there is either a great market opportunity or a very cool technology. Only rarely is there both.

"the application process is much quicker than VCs or angels"

"DECC have been fantastic and the funding takes us to readiness for manufacture."

"very responsive and supportive and has the flexibility to provide the support needed to smaller companies to reduce project risk and to make the funding process and administration as simple as possible"

For the future…

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- Reviewing potential gaps in technology
- Imminent launch of future phases of Entrepreneurs Fund
- EEF Model used more widely?

“we are enthused to have met a real positive, forward thinker at DECC and wish you all the luck with the projects you are helping”

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Thank you