

# Low Carbon Innovation Delivery Review

## Summary Report

Department of Energy and Climate Change  
3 Whitehall Place  
London  
SW1A 2AW  
Telephone: 0300 068 4000  
Website: [www.decc.gov.uk](http://www.decc.gov.uk)

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## Foreword

Innovative technologies are essential for Government to deliver on its 2050 ambitions and to create the Coalition's vision of a prosperous, globally competitive low carbon economy. Not only will the technologies cut carbon but they will support a range of growing industries and champion the UK as a hub for brilliant new ideas, while managing natural assets sustainably.

The Low Carbon and Environmental Goods and Services sector (LCEGS) is forecast to grow from £23.5bn in 2009/10 to £28.9bn in 2016/17.<sup>1</sup> In 2009/10 Government alone invested over £269m in low carbon innovation technologies through a number of Departments, delivery bodies and other organisations. It's crucially important we invest our resources in the technologies which will have the greatest impact on our objectives. Setting a clear low carbon technology strategy is not just essential in supporting our low carbon ambitions but also for UK business to compete internationally and generate economic growth.

In February 2011 I asked my ministerial colleagues across Government to work with me to improve the way we collectively design and deliver our low carbon innovation programmes. There has been commentary from the National Audit Office, the Committee on Climate Change and the Public Accounts Committee on how the low carbon innovation delivery landscape has functioned in the past. This has focused on how the management of programmes should work, particularly around strengthening planning and coordination; improving delivery and evaluation; and developing greater transparency and support for innovators. There is plenty of opportunity to improve the way we deliver low carbon innovation so it meets our climate goals while also catalysing more private investment and supporting the UK's growth objectives.

Going forward, we will build on the new and simplified innovation structures this Government has developed and use our position as a world leader in research to develop technologies in areas where we have a competitive advantage, such as in marine, offshore wind and carbon capture and storage.

**Gregory Barker, Minister of State**  
**Department of Energy and Climate Change**

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<sup>1</sup> <http://www.bis.gov.uk/assets/biscore/business-sectors/docs/l/11-992-low-carbon-and-environmental-goods-and-services-2009-10.pdf>.

## Executive Summary

A cross-government Review of the Low Carbon Innovation Delivery Landscape was launched in 2011, sponsored by Gregory Barker, Minister of State, Department of Energy and Climate Change (DECC).

This report provides an overview of the objectives and purpose of the Low Carbon Innovation Delivery Review and its outcomes. It looks to address the innovation delivery issues highlighted by the National Audit Office (NAO), in their report, *Government funding for developing Renewable Energy Technologies, June 2010*,<sup>2</sup> and introduce a more disciplined approach to planning and managing direct support.

- **To strengthen and enhance Government's vision and strategic objectives for low carbon innovation**, the Low Carbon Innovation Group (LCIG) will be re-launched, ensuring it has full policy coverage of technologies, and includes all departments and bodies with key low carbon innovation interests. The LCIG will also develop and adopt a toolbox of strategic outcomes and metrics.
- **To ensure effective prioritisation, planning, delivery and appraisal**, the LCIG partners will further develop and draw on its shared Technology Innovation Needs Assessment (TINA) evidence base to develop technology plans and ensure prioritisation is consistent.
- We will also create greater **transparency and innovator access** by building on and strengthening the funding support navigator, so it covers a full range of low carbon innovation technologies and is accessible via relevant channels. A Low Carbon Innovation Group document will also be published setting out our collective objectives and plans.

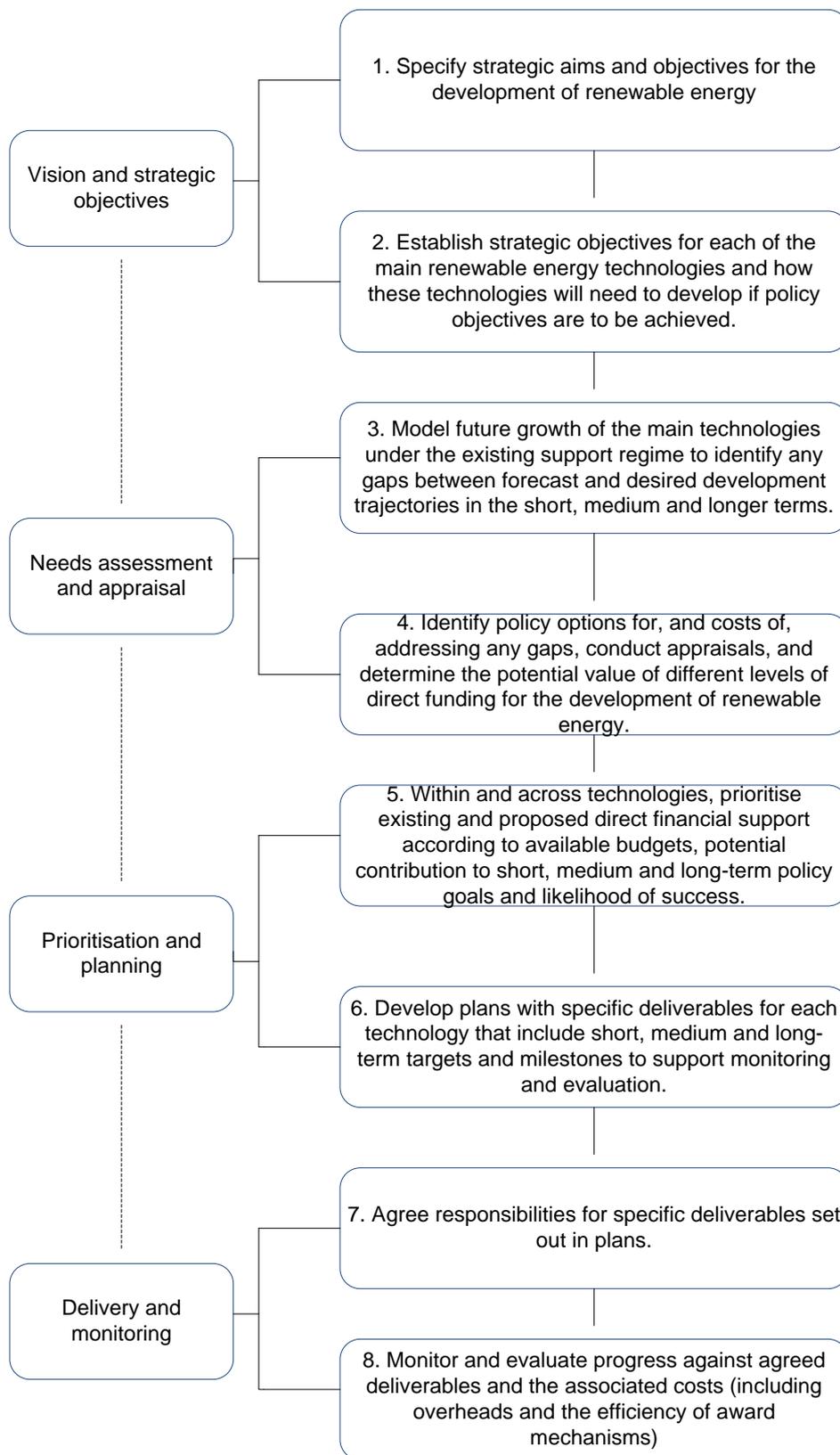
The Review was overseen by a Cross Departmental Steering Board. Representation from other Government Departments included the Department of Energy and Climate Change, Department for Business, Innovation and Skills (BIS); the Department for Environment, Food and Rural Affairs (Defra); the Department for Communities and Local Government (DCLG); the Department for Transport (DfT); and Her Majesty's Treasury (HMT). The Board provided direction and oversight to the Review. In addition a number of key stakeholders provided input.

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<sup>2</sup> [http://www.nao.org.uk/publications/1011/renewable\\_energy.aspx](http://www.nao.org.uk/publications/1011/renewable_energy.aspx)

## **Addressing the issues highlighted by the National Audit Office**

**Figure 1: NAO recommended steps required to achieve a disciplined approach to planning and managing direct support for low carbon innovation technologies**



***Establishing a vision and strategic objectives***

### *Issue*

The mechanism by which government coordinates its low carbon technology innovation funding activities is the Low Carbon Innovation Group (LCIG). It formed in 2008 with membership comprising the Carbon Trust (CT), the Energy Technologies Institute (ETI) and the Technology Strategy Board (TSB). It was expanded in 2009 at DECC's request to include itself, BIS and the Research Councils UK. The LCIG began to report to DECC and BIS Ministers in December 2010.

The NAO's report "Government funding for developing renewable energy technology" acknowledged that the expansion of the LCIG had "led to improvements in the degree of coordination" of bodies that support renewable energy innovation. Both the NAO and subsequent Public Accounts Committee reports recommended strengthening LCIG leadership.

### *Action*

The LCIG will be formalised with a secretariat function provided by DECC. A number of other Government departments which are key to delivering carbon targets will join LCIG's membership and engage when appropriate. LCIG will work to deliver a clear strategy for UK low carbon innovation which clearly articulates how their individual organisational objectives relate to one another and what their collective offer is, with particular focus on their vision for innovation in low carbon as well as renewable technologies. A low carbon technology prospectus and additional publications will be developed to communicate the LCIG strategy.

## ***Effective prioritisation, planning, delivery and appraisal***

### *Issue*

The NAO's report claimed government "did not have quantified energy generation or emission reduction targets" set against its schemes. The report also claimed there were "variations" in objectives and performance measures for different schemes managed by low carbon funding organisations.

A significant proportion of low carbon innovation funding is targeted at technologies which may not make a significant contribution to UK emission targets within 20 or more years. Assessing and then undertaking contribution analysis for innovation specific to technologies is a significant challenge as other technology learning transfers would take place in tandem.

### *Action*

Since the NAO's report the LCIG have piloted a Technology Innovation Needs Assessment (TINA) process. TINA aims to provide a robust evidence base on the innovation needs of those technologies likely to be important in delivering our energy and climate change targets and/or economic benefits for the UK, including identifying gaps in our understanding. The LCIG will work to enhance the TINA process so it can be used to support low carbon technology prioritisation more widely across the landscape.

To assess the potential effectiveness of different schemes a toolbox of common metrics will be developed. The toolbox will be used by LCIG members, for relevant programmes, to support both the appraisal of programmes and the evaluation of their performance. The proposed metrics will be outcome-based, focusing around the areas of strategy, technology and green growth; and also process-based metrics which will help evaluate how effectively schemes are managed and delivered.

The appraisal and development of objectives for different schemes will be further enhanced by maximising the use and impact of technology development groups. These groups will bring together experts from different sectors to assess the potential of different technologies and identify options for public intervention to progress the technologies. The outcomes from these groups will feed into the development of the wider technology appraisal work and support value for money assessments prior to scheme launch.

Additionally in the run-up to the next spending review (SR) round, LCIG partners will work to identify future low carbon innovation public funding needs to support the coordination of appropriate HMT funding bids. This will improve the chances that priority innovation challenges across the low carbon landscape receive adequate support (*up to next SR*) and reduce duplication and gaps.

### ***Creating greater transparency and access for innovators***

#### *Issue*

Recent reports from the NAO and PAC have highlighted the need to clarify roles on low carbon innovation and improve the coordination of access channels, in particular to provide clarity about which organisations provide innovation support in which specific areas.

#### *Action*

To improve communication with innovators, we will develop a Low Carbon Online Funding Navigator for innovators to identify funding support opportunities for a wide range of technologies. This will build on the existing navigator for Energy, Generation and Supply technologies and help to increase knowledge sharing and transparency within the sector.

To aid innovators intending to apply for funding support, web based publications will be developed outlining how government department work together to provide low carbon innovation support and how programmes are assessed to improve transparency. These publications will manage innovator expectations ahead of applying for funding.

To ensure the landscape is running effectively we will survey industry views on the low carbon innovation landscape to further improve its effectiveness and transparency.

## Summary of outcomes and implementation timetable

### *Strengthened Planning and Coordination*

Outcome	Timing	Delivery route
1. Publication of a low carbon innovation prospectus to provide clarity to industry on government low carbon innovation strategy to ensure private RD&D support is aligned to public support.	Spring 2012	Low Carbon Innovation Group coordinates
2. Coordinated approach to future spending review rounds by departments and other organisations for low carbon technologies to ensure future spending plans support the successful implementation of government's innovation strategy.	Run up to SR	Low Carbon Innovation Group coordinates
3. Work together to develop and adopt a common set of performance management metrics to be used as a toolbox for the appraisal and evaluation of schemes to identify value for money and lessons learnt, and support the development of future schemes.	Summer 2012	Low Carbon Innovation Group coordinates
4. Re-launch a strengthened and more dynamic Low Carbon Innovation Group while ensuring it has coverage of all technologies. This will ensure closer working across government departments and their delivery agencies to ensure public support is focused on key technology areas and value for money is achieved.	Ongoing up to autumn 2012	Low Carbon Innovation Group coordinates
5. The Low Carbon Innovation Group members will work in partnership to develop, agree and use a high level technology assessment process to be drawn on by all departments and organisations to ensure public support is directed to key technology areas and value for money is achieved in funding decisions.	Spring 2012	Low Carbon Innovation Group coordinates

### ***Improving Delivery and Evaluation***

To ensure schemes are delivered to a high quality and deliver on clear objectives, while ensuring value for money we will:

<b>Outcome</b>	<b>Timing</b>	<b>Delivery route</b>
<b>6.</b> Develop and maintain an audit of what went right, could have been improved and where departments and organisations could have got better value for money to support our improvement.	Early 2012	Organisations supporting low carbon innovation
<b>7.</b> Adopt best practice principles to assist the appraisal, management and evaluation of low carbon innovation programmes.	Spring 2012	DECC and BIS Economists
<b>8.</b> Maximise the use and impact of expert technology development groups to support, appraise and target schemes to ensure they have maximum impact on achieving government targets and give strong value for money.	Summer 2012	Low Carbon Innovation Group coordinates

### ***Improved transparency and innovator accessibility***

Improve access channels for funding and transparency relating to funding opportunities.

<b>Outcome</b>	<b>Timing</b>	<b>Delivery route</b>
<b>9.</b> Develop a Low Carbon Online Funding Navigator for innovators to identify funding support opportunities for a wide range of technologies. This will build on the existing navigator for Energy, Generation and Supply technologies and help increase the pool of technology ideas government and other funding organisations become aware of while supporting transparency.	Early 2012	DECC and UKERC
<b>10.</b> Web based publications outlining how government works together to provide low carbon innovation support and how programmes are assessed to improve transparency and manage innovator expectations ahead of applying for funding.	Early 2012	Low Carbon Innovation Group coordinates
<b>11.</b> Survey industry views on the low carbon innovation landscape to further improve its	Autumn 2012	DECC

effectiveness and transparency.		
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## **Benefits and Success**

The outcomes of this report are focused on enhancing the delivery of Government's low carbon and wider innovation objectives.

We will measure benefits and successes derived from implementation of the outcomes in this report as follows.

### ***Benefits***

- Government working closely together to develop and support low carbon innovation programmes that have clear links to departments' strategic objectives.
- A low carbon innovation delivery landscape which is able to demonstrate value for money and delivers quality and targeted support for innovative technologies that will best support departments in achieving their targets and commitments.
- A delivery landscape identified by the sector as visible, transparent and accessible to innovators.

### ***Success measures***

- Toolbox of appraisal and evaluation metrics are used across all relevant low carbon government supported programmes and relevant data is collected, compiled and shared by Departments to support future programme design.
- Future "customer" survey results show the funding landscape is both transparent and working effectively.
- Publication of a shared government strategy, clearly articulating the low carbon innovation supported by government and the roles and responsibilities of organisations operating in the landscape.

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