



DEBATE PACK

Number 2015/0128, 15 December 2015

Climate change and flooding - updated

This pack has been produced ahead of the Opposition Day debate on **Climate Change and Flooding** which will take place in the Commons Chamber on Tuesday 15 December 2015. **It has been updated to reflect the Opposition motion published on 15 December:**

That this House applauds the courage and tirelessness of the UK's emergency services, Armed Forces and volunteers who are working day and night to protect people from the damaging floods; condemns the reckless cuts to flood defence funding made by the Government, which have left communities more vulnerable to extreme weather; notes that 600 people were evacuated from their homes in Hawick due to flooding, and hopes the Scottish Government will urgently invest additional funds to enhance flood protection schemes in Scotland; further notes the increasing frequency and intensity of storms in recent years and their consistency with the warnings of Britain's leading climate scientists regarding the impact of climate change; supports the outcome of the UN COP21 conference in Paris, but recognises that international cooperation and ambition to reduce greenhouse gases and invest in clean energy technologies must be increased if global temperature rises are to be limited and the goal of climate safety kept within reach; expresses concern at the Government's decisions to cut investment in carbon capture and storage technology, privatise the Green Investment Bank without protecting its green mandate, reduce funding for energy efficiency and solar energy and block the growth of wind energy, which all jeopardise the future of Britain's important low-carbon industries; and calls on the Government to institute a thorough climate risk assessment that considers the implications of the Paris Summit for future flood risk.

The House of Commons Library prepares a briefing in hard copy and/or online for most non-legislative debates in the Chamber and Westminster Hall other than half-hour debates. Debate Packs are produced quickly after the announcement of parliamentary business. They are intended to provide a summary or overview of the issue being debated and identify relevant briefings and useful documents, including press and parliamentary material. More detailed briefing can be prepared for Members on request to the Library.

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1. Summary

Storm Desmond and recent flooding events have brought the issue of flooding to Parliament's attention. Flooding across the North West of England, southern Scotland, North Wales and Northern Ireland follows other major flooding events in recent years, including the winter floods in 2013/14 and summer flooding in 2012. Impacts of these major flooding events have included fatalities, homes and businesses being flooded and evacuated, roads and rails being closed, power stations being flooded resulting in loss of power for communities and hospitals, schools being temporarily closed. On 9 December, Chancellor George Osborne [announced](#) a £51 million fund for those affected by flooding in Cumbria and Lancashire, confirming that this takes total Government support pledged to over £60 million. A National Flood Resilience Review was announced on 13 December and a report will be published in summer 2016.

Scientists are improving their understanding of how individual weather events may or may not be partly attributed to climate change, but there is a general understanding that climate change is likely to be linked to increased winter rain in the UK. During her [statement](#) to Parliament the Secretary of State for Environment Food and Rural Affairs, agreed that the extreme weather patterns seen during storm are consistent with climate change trends.

The Government has protected the next 6 years of £2.3 billion capital funding in flood defences (up to 2021) and has confirmed that flood maintenance spending will be protected in real terms over this Parliament. In 2014/15, the Government spent £171 million on flood maintenance.

Agreement was reached at the [Paris Climate Conference](#) on 12 December 2015 on a successor to the Kyoto Protocol that will apply to all countries, and come into force by 2020. There has been widespread relief that this had been achieved, whilst also recognising that it is a first step towards limiting anthropogenic climate change to safe levels.

An unexpected outcome of the conference is that the ambition of the emissions goal has been increased beyond what was previously agreed to keeping temperatures "well below 2 °C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5 °C above pre-industrial levels". The agreement also sets an aim for emissions to

peak “as soon as possible” and for emissions from human activity and absorption by carbon sinks to balance by the second half of the century.

2. Flooding events

2.1 Storm Desmond (December 2015)

Storm Desmond led to localised flooding in the north west of England, southern Scotland, north Wales and parts of Northern Ireland. Cumbria was the worst-hit county: more than a month's rain fell in one day on Saturday (5th December) and main rivers all across Cumbria exceeded the highest levels ever recorded. The Environment Agency estimated that 5,200 homes were affected by flooding in Cumbria and Lancaster (as at 8 December); and more than 11,500 homes were protected by existing flood defences.

The [BBC reported](#) two fatalities (one in Cumbria and one in Northern Ireland) related to the flooding.

Other impacts of the flooding included:

- Road closures and closure of the West Coast Mainline rail route to Scotland and the Cumbrian coast rail line between Carlisle and Workington;
- About 40 schools in Cumbria were closed and appointments and routine business across NHS hospitals were cancelled;
- Lancaster University closed and cancelled teaching until Christmas after losing power across the campus; and
- Loss of power supply to many homes and businesses due to unforeseen flood damage at a substation in Lancaster.

Government response and support schemes announced

In a [statement on the impact of Storm Desmond and flooding in the north of England](#) on 7 December, the Secretary of State for Environment Food and Rural Affairs, Liz Truss, stated that "the Government mobilised a full national emergency response". This included 200 military personnel and supporting assets (including a Chinook helicopter); 50 high-volume pumps; and the Environment Agency moving people, temporary defences and pumps to the north-west.

The main support schemes announced by the Government in response to the flooding from Storm Desmond include:

- Communities Secretary Greg Clark confirmed that support for local authorities would be available through the **Bellwin Scheme** in a press release on 8 December. Authorities are eligible for costs under Bellwin when they have spent more than 0.2% of their calculated annual revenue budgets on works and 100% of costs will be met by Government. Eligible authorities now include: councils; police authorities; fire and rescue authorities; and National Park authorities.

- Flood affected communities will not face Council Tax or business rate bills for the homes and businesses they have been displaced from.
- The Rural Payments Agency will not carry out inspections in the flooded areas and will make use of any flexibility in cross compliance and animal movement rules for affected farmers.
- Natural England are temporarily lifting all the requirements that normally apply to Environmental Stewardship agreements and protected sites for affected farmers.
- On 9 December, Chancellor George Osborne [announced](#) a **£51 million fund** for those affected by flooding in Cumbria and Lancashire. The Government press release (9 December) provides further detail on the support available and confirms that this takes total Government support pledged to over £60 million. Details of the support provided from these funds include:
 - The **Community Recovery Scheme**: The fund will be worth nearly £40 million and will be administered by local authorities. It will provide local authorities with over **£500 for each household affected**; and provide **grants of up to £5000 to help households protect their homes from future flood damage**.
 - **£10 million will be invested through the Environment Agency** to repair the damaged flood defences.
 - Farming Recovery Fund: Support payments worth up to **£20,000 will be available to farmers** across Cumbria and North Lancashire who have been affected by flooding to help restore damaged agricultural land
 - The government will apply the Barnett formula to this funding so that **Devolved Administrations will receive £7.5 million**. It is up to them how this money is spent.
- The Government has [pledged](#) to match funds raised by the Cumbria Foundation's Flood Appeal up to a total of £2 million.

In addition, the following national and local Cumbrian review plans were [announced](#) by the Secretary of State for Environment on 13 December:

- a **National Flood Resilience Review** will take place to better protect the country from future flooding and increasingly extreme weather events. The review will be published in summer 2016, will be led by the Chancellor of the Duchy of Lancaster Oliver Letwin and include Defra, DECC, DCLG, HMT, the Chief Executive of the Environment Agency and the Government's Chief Scientist.
- A **new Cumbrian Floods Partnership group** has also been formed to "consider what improvements to flood defences in the region may be needed, look at upstream options for slowing key rivers to reduce the intensity of water flows at peak times and build

stronger links between local residents, community groups and flood defence planning.”¹ The Group will publish a **Cumbria Action Plan** in summer 2016.

Further information and commentary

Further information and commentary on these most recent flooding events is set out in the Library Briefing on [Storm Desmond – a flooding update](#) (9 December 2015).

Further background information on the Bellwin Scheme is available in the [Library Briefing Paper on the Bellwin Scheme](#) (January 2015). This should be read in conjunction with the [Government response to its Consultation on the Bellwin Scheme](#), published in November 2015.

2.2 Previous flooding events (2010 onwards)

Winter floods 2013/14

From December 2013 to February 2014 the United Kingdom experienced a number of severe storms – the Met Office reported it as the wettest winter in England and Wales since at least 1766.

Initially most of the weather impacts related to the strong winds, first across the north of the UK and then affecting exposed areas further south. However, as rainfall totals accumulated the focus of concern shifted from strong winds to flooding, including large river catchments such as the Severn and Thames. Finally, in early January, strong winds, combining with high spring tides and river flows, resulted in high water levels and large waves affecting exposed coastal communities in the south and west, causing coastal flooding.²

Overall the December and January storms resulted in around seven fatalities and 1,700 properties flooded across England.

Floods in 2012

From April 2012 to July 2012, the UK experienced a period of exceptionally wet weather, breaking previous rainfall records and resulting in several significant flood events. The weather affected all of England, Wales and eastern Scotland. This brought the drought (2010-12) in England and Wales to an end.³

In November 2012, a series of low pressure systems led to flooding across South West England, the Midlands, Wales, Cumbria and Scotland. There was one fatality in Somerset. In total, several thousand properties across the UK were flooded. In South West England these were judged to be the worst floods since autumn 2000.⁴

¹ Defra Press release, [A country more flood resilient](#), 13 December 2015

² Met Office, [Winter storms, December 2013 to January 2014](#)

³ Met Office, [Record rainfall – April to July 2012](#)

⁴ Met Office, [Exceptionally wet weather – November 2012](#)

Floods in 2010

Strong winds and heavy rainfall in November 2010 resulted in severe flooding to parts of Cornwall. More than 100 properties were flooded, roads were closed and the mainline railway was closed. A number of schools across Cornwall were closed.

3. Links between extreme rainfall and climate change in the UK

The [UK Climate Projection](#) briefing report from 2010 [concluded](#) that recent trends in precipitation in the UK have shown that mean rainfall, although highly variable, seems to have decreased in summer and increased in winter, but with little change in the last 50 years. In addition, all regions in the UK have seen increases in the proportion of heavy winter rainfall events over the last 45 years. However, it is not possible to attribute these trends to a particular cause.

The Met Office [reported](#) the following records in rainfall during Storm Desmond:

- Honister Pass recorded 341.4mm of rainfall in 24-hours on 5 December 2015. The previous record of 316.4mm was set in November 2009 at Seathwaite, also in Cumbria.
- A new 48-hour record was also set, when 405mm was recorded at Thirlmere in Cumbria in just 38 hrs.

Scientists are improving their understanding of how individual weather events may or may not be partly attributed to climate change, but there is a general understanding that climate change is likely to be linked to increased winter rain in the UK.

Following Storm Desmond, Professor Dame Julia Slingo, Met Office Chief Scientist [stated](#):

Just as with the stormy winter of two years ago, all the evidence from fundamental physics, and our understanding of our weather systems, suggests there may be a link between climate change and record-breaking winter rainfall. Last month, we published [a paper](#) showing that for the same weather pattern, an extended period of extreme UK winter rainfall is now seven times more likely than in a world without human emissions of greenhouse gases.⁵

In case of Storm Desmond, scientists have for the first time used three different approaches—analysing temperature trends, a global climate model and the results from multiple simulations of a regional climate model—in a rapid assessment of the potential link between the storm and man-made greenhouse gases in the atmosphere. [This work](#), which has not yet been peer reviewed, concluded that global warming increased the likelihood of the heavy precipitation associated with a storm like Desmond. They found that:

The increase is small but robust. It should be noted that a positive attribution for an extreme rainfall event like Desmond is still somewhat rare.

The researchers also concluded that:

⁵ Met Office, [Did climate change have an impact on Storm Desmond?](#), 7 December 2015

By comparing recent extreme events with the historical record and climate model simulations, the team found that an event like this is now roughly 40% more likely due to climate change than it was in the past, with an uncertainty range of 5% to 80%.

During her [statement](#) to Parliament the Secretary of State for Environment Food and Rural Affairs, Liz Truss, agreed that the extreme weather patterns seen during storm are consistent with climate change trends.⁶ She also confirmed that climate change is factored into all the modelling work that the Environmental Agency does, but:

in the light of this extreme weather we must look at that modelling and ensure that it is fit for purpose for future decisions.⁷

⁶ HC Deb 7 December 2015 [c713](#)

⁷ Ibid.

4. UK Climate Risk Assessment

The Climate Change Act 2008 requires the UK Government to conduct a [Climate Change Risk Assessment](#) (CCRA), which is a five-yearly government assessment of the main impacts of climate change on the UK, and in light of the risks identified, develop a [National Adaptation Programme](#) (NAP).

The CCRA set out the potential risks to the UK of increased flooding as a result of climate change:

Climate change may result in more flooding, due to higher river flows (caused in particular by an increase in the quantity and intensity of winter rainfall) and rising sea levels. The frequency of river flooding may double or quadruple by the 2080s. Rising sea levels may accelerate coastal erosion and the deterioration of coastal flood defences. Changes in rainfall patterns may also increase the risk of surface water flooding, although suitable information is not currently available for analysing this in detail.

Following this the [Government](#) published, in July 2013, the [National Adaptation Programme](#). This contains a register of actions which includes all the actions agreed in the programme. It also aligns risks identified in the Climate Change Risk Assessment to actions being undertaken or to be undertaken and the timescales according to each theme. This concluded:

Most of the highest order risks for the built environment highlighted in the CCRA are associated with the impacts of flooding, which is expected to become more common throughout the twenty-first century. The cost of expected annual damage to residential properties alone from tidal and river flooding in England and Wales is projected to increase from £640 million at present to over £1.1 billion by the 2020s under the CCRA mid-range climate change scenario.

[The Economics of the National Adaptation Programme](#) was published at the same time.

The House of Commons Environmental Audit Committee examined the progress being made on adaptation. The Committee argued that the NAP placed the UK "ahead of most countries". ([Climate Change Adaptation](#), HC453 2014-15). However, it stated that the Government had not "identified proactive adaptation policies or driven action in a coordinated way", and recommended a set of measures and targets against which progress could be measured. The Committee also suggested that responsibility for the "actions needed to deliver the required climate resilience" should be assigned to specific organisations and groups.

The Committee on Climate Change Adaptation sub-Committee in the [Committee on Climate Change report *Progress in Preparing for Climate Change: 2015 Report to Parliament, June 2015*](#) has also stated that the

next NAP, scheduled to be published in 2017, should reflect regional differences in climate change impacts, and local organisations and interests should continue to play a role in delivery. The Government has stated in its [response](#) that it “fully intend[s] to set clear adaptation priorities in the second NAP report”, and that it would “explore a two tier approach to adaptation actions”. The first tier would focus on the highest impact and most needed policies and actions with clear timeframes, targets, monitoring and evaluation, and the second tier would “capture a summary of much broader activity across Government and beyond that supports [its] adaptation objectives”.

Progress towards the publication of the [Climate Change Risk Assessment 2017](#) includes the following milestones:

- 21 February 2014 – call for evidence published
- 30 April 2014 – call for evidence closes
- December 2015 – draft evidence report submitted to Defra
- July 2016 – final evidence report submitted to Government
- January 2017 – Government Climate Change Risk Assessment published

5. Central Government funding for flood risk management

Flood risk management is funded from several sources, including: Central Government (mainly from Defra); levies on local authorities; partnership funding; drainage charges and special levies paid to internal drainage boards and the Environment Agency. Local authorities can also use their general funding provided by the Department for Communities and Local Government through the Settlement Funding Assessment to fund flood risk management work.

In 2013, the Government committed £2.3 billion of future capital funding for a six-year investment programme up to 2021. The allocation of revenue funding is announced for a one-year period only, in line with Government policy.

The Environment Agency updated their [Long Term Investment Scenarios](#) in 2014 which sets out an economic assessment of future flood risk management up to 2065. It used the latest available data to identify an approach to investing in flood and coastal erosion risk management over the long term that would achieve the greatest reduction in flood damage for any given amount invested. The report states that:

Current and proposed levels of investment closely align with a long-term investment profile that maximises benefits in terms of reducing flood damage.

5.1 Budget allocation for 2015/16

The latest information on flood defence funding can be found in Defra's [Central Government Funding for Flood and Coastal Erosion Risk Management in England](#) (1 December).

Central Government budgets for flood and coastal risk management for 2015/16 are set out below:⁸

Figure 2 – Budgets for FCERM 2015/16 (£m)

	Core Defra Retained		DCLG	EA		Total	Total real terms (15/16 prices)
	Resource	Resource – LSSG to LLFAs	Resource – SFA to LLFAs	Resource	Capital		
2015/16	3.2	10.0	20.7	266.4	395.0	695.3	695.3

⁸ Note that these figures do not include the additional funding announced following the Storm Desmond flooding.

In the [Autumn Statement](#), the Chancellor confirmed “protection of flood defence funding, including the £2.3 billion 6 year capital investment programme” and protection of flood defence maintenance funding over the course of this Parliament:

The government will continue to prioritise investment in flood defences. The government’s £2.3 billion capital programme will invest in over 1,500 schemes to give 300,000 homes greater security from flooding by 2021. Flood defence maintenance funding will also be protected, and DEFRA will work with the Environment Agency to generate 10% efficiencies by 2019-20 with all savings reinvested to better protect another 4,000 homes.

5.2 Comments on Government funding

Defra

In the debate on flooding on 7 December, the Secretary of State confirmed that the Government “constantly reviews investment in flood defences”. She re-iterated Government spending figures on flood defences.

On flood defence spending, over the last Parliament we spent £1.7 billion in capital spending—a real-terms increase on the £1.5 billion spent between 2005 and 2010. Our next six-year programme is £2.3 billion, which again represents a real-terms increase. It is the first time a Government have laid out a six-year programme so that we do not have lumpy bits of flood spending, but commit to a long-term programme that helps to protect the country better. Including the impact of climate change, that is forecast to reduce flood risk by 5% over the next six years.

The hon. Lady asked about the maintenance budget. We spent £171 million last year on flood maintenance.

Committee on Climate Change Adaptation sub-Committee

The Committee on Climate Change Adaptation sub-Committee in the [Committee on Climate Change report *Progress in Preparing for Climate Change: 2015 Report to Parliament, June 2015*](#) identified flood risk as one of the four key areas of climate risk (the others being water scarcity, heat stress and impacts on natural capital and agriculture).

The report included the following on flood risk:

An increased risk of flooding, including from rivers, the sea, and sewers, was the largest risk identified in the CCRA. The Government invested £2.55 billion to manage flood and coastal erosion risks in England over the last four-year spending period (April 2011 to March 2015). As a result, around 180,000 households now benefit from new or refurbished defences, exceeding the 145,000 target. Investment in flood and coastal defence assets will need to steadily increase in the future to counter the impacts of climate change. Concerted efforts will also be needed by local authorities and partner organisations to improve the management of catchments, the coast, and urban areas in ways

that alleviate the potential for flooding. Even in the best case scenario, with sustained increases in spending at optimal levels over many years, 45,000 more homes and other properties are expected to fall in to the highest flood risk category by mid-century (i.e. at a 1-in-30 annual chance of flooding or greater).

National Audit Office

The National Audit Office published a report on [Strategic flood risk management](#) on 5 November 2014. It concluded as follows on value for money:

The Department and Agency have limited resources to spend on maintaining and enhancing the standard of flood protection in England. The Agency has responded to these constraints by improving cost-effectiveness, and adopting methods for prioritising service delivery which provide a healthy return on investment. On these criteria, the Agency is achieving value for money.

However, current spending is insufficient to meet many of the maintenance needs the Agency has identified for its assets. In the areas where maintenance has been deprioritised – typically, where there are a low number of homes – this will increase the danger of asset conditions degrading, so increasing flood risk. The Agency may be faced with decisions on whether to replace affected assets earlier than would otherwise be the case, or to let them lapse. It is reasonable, based on recent experience, to predict a role for community and political pressure in how these decisions play out. (As a rule, our experience is that ad-hoc emergency spending is less good value than sustained maintenance). The impact of climate change will also continue to increase pressure on defences. We conclude that the achievement of value for money in the long term remains subject to significant uncertainty.

Environment, Food and Rural Affairs Committee

The Environment, Food and Rural Affairs Select Committee published a [Report on the Winter floods 2013-14](#) in June 2014, which focused on maintenance responsibilities and funding. Its recommendations included:

Funding for maintenance is at a bare minimum and needs to increase in line with funding for new capital schemes and the increasing flood risk caused by more frequent extreme weather events.

We recommend that Defra increase revenue funding to ensure that there is sufficient investment in maintenance work, including conveyance and dredging. We urge Defra to immediately draw up fully funded plans to address the backlog of appropriate and necessary maintenance work and to accommodate the increased requirement caused by the growth in numbers of capital assets.⁹

⁹ Paragraphs 53 and 54

Further information and scrutiny

Further information is set out in the [Library Briefing Paper on Flood defence spending in England](#).

The Environment, Food and Rural Affairs Select Committee published a [Report on the Winter floods 2013-14](#) in June 2014 and the [Government Response](#) was published in October 2014.¹⁰

The Environment, Food and Rural Affairs Committee published a Report on [Managing Flood Risk](#) in July 2013 and the Government Response was published in October 2013.

The [Government Response](#) to the NAO Report on Strategic flood risk management.

¹⁰ House of Commons Environment, Food and Rural Affairs Select Committee Report Winter Floods 2013-14 HC240 2014-15 and Government Response HC701 2014-15

6. Paris Climate Conference

Agreement was reached at the [Paris Climate Conference](#) on 12 December 2015 on a successor to the Kyoto Protocol that will apply to all countries, and come into force by 2020. There has been widespread relief that this had been achieved, whilst also recognising that it is a first step towards limiting anthropogenic climate change to safe levels.

An unexpected outcome of the conference is that the ambition of the emissions goal has been increased beyond what was previously agreed to keeping temperatures “well below 2 °C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels”. The agreement also sets an aim for emissions to peak “as soon as possible” and for emissions from human activity and absorption by carbon sinks to balance sometime in the second half of the century.

There are [two documents](#): a 12 page Paris Agreement and a 32 page decision document adopting the Paris Agreement, which set out the decision to give effect to the agreement. Agreement was also reached on

- **Reviewing nationally determined contributions (NDCs)** – developed countries were keen to include a mechanism for a review of the commitment to reducing greenhouse gas emissions made by individual countries. This is because current contributions are not sufficient to meet the 2°C target and will need to be “ratcheted” up to do so. Developed countries wanted any mechanism to increase ambition to apply to all countries. Agreement was reached that NDCs will be reviewed in 2018, updated every five years, from 2020. The decision document sets out that by 2020 countries should publish NDCs up to 2030.
- **Climate finance** – the target for \$100bn a year of climate finance by 2020 will continue beyond to 2025. One of the debates during the conference was to what level wealthier countries that are considered developing under the UNFCCC, including countries such as China, South Korea and Malaysia, should contribute to this finance. Agreement was reached that developing countries will be “encouraged to provide or continue to provide such support voluntarily”.
- **Loss and damage** – developed countries were concerned about the inclusion of the concept of loss and damage to countries caused by climate change in the agreement and any implications of financial liability for historic emissions. The agreement recognizes “the importance of averting, minimising and addressing loss and damage” but the decisions document sets out that this does not provide a basis for any liability or compensation.
- **Transparency and reporting** – developed countries were keen to ensure a reporting mechanism was included in the agreement.

The agreement provides for an enhanced transparency mechanism for action and support. It includes the provision that all countries should regularly provide national inventory of emissions and sinks, together with information necessary to track progress in implementing and achieving NDCs. The decision document states that the information should be provided at least every two years.

- The agreement will enter into force once at least 55 parties, covering at least 55% of global emissions have ratified it. The hope is that this will happen soon after April 2016 when the agreement opens for ratification.

The Government [welcomed](#) the agreement stating that it marks a clear turning point towards a sustainable and low carbon future. The long term goal agreed:

Sends a strong signal to investors, businesses, and policy-makers about the shift to a low carbon economy and provides confidence that will help drive the scale of investment needed. As a global leader in low carbon goods and services the UK is in a unique position to benefit from this.¹¹

Further information and background is available on the [Library Note on the Paris Climate Conference](#).

¹¹ DECC, [A historic new global climate agreement has been struck at the United Nations conference on climate change in Paris](#), 12 December 2015

7. Low Carbon Policies Changes

There have been a number of policy changes since the election in May 2015. The Government has stated that it is focused on reducing the cost of energy for consumers and security of supply.

7.1 Renewables

The Government announced a number of changes on policies affecting renewables since the elections. On July 22 Energy and Climate Change Secretary [Amber Rudd](#) set out why renewable energy subsidies were being reviewed:

My priorities are clear. We need to keep bills as low as possible for hardworking families and businesses while reducing our emissions in the most cost-effective way.

“Our support has driven down the cost of renewable energy significantly. As costs continue to fall it becomes easier for parts of the renewables industry to survive without subsidies. We’re taking action to protect consumers, whilst protecting existing investment”.

On 18 June there was an announcement by the Government of its intention to close the [Renewables Obligation for onshore wind](#) one year early, in 2016. This will apply to all developments over 5MW in size. Following this on 8 July, the Summer Budget included an announcement on the removal of the [Climate Change Levy Exemption](#) that applied to renewable electricity supplies. On July 22, DECC announced a [package of measures](#) to “control the cost of renewable energy”, including controlling subsidies for biomass and solar PV under the Renewables Obligation and changing accreditation rules under the Feed-in Tariff. On July 2013 DECC announced that funding for the [Green Deal Finance Company funding](#) would end, removing the financial support for Green Deal measures.

On 27 August the Government published its [consultation on its Review of Feed-in Tariffs](#), for projects smaller than 5MW, which included wide ranging changes. Included in the proposals is the option of removing payments for generation tariff (which is the larger portion of the scheme) if there is a surge of applications before the proposed changes come into force in January 2016, and retaining the payment for energy exported only. If this is not implemented tariff changes proposed include cuts to solar PV of between 76 and 87%, which were widely reported in the press.

7.2 Green Investment Bank

The Green Investment Bank was set up by the Government to support green infrastructure investment. There has been ongoing debate about how the GIB’s ability to raise capital should be expanded. The Government announced on 25 June 2015 in a Written Statement that

the Bank would be moved into private ownership with further details to follow in due course. Reactions to the announcement were mixed, with many concerned that a change to private ownership would adversely impact its focus on green investment.

In October 2015 the Government set out in a Written Statement that it would have to remove all public sector controls to allow the GIB to raise capital without this affecting public sector net debt. It subsequently introduced an amendment to the [Enterprise Bill](#) in the Lords which would be removing Part 1 relating to the GIB from [The Enterprise and Regulatory Reform Act 2013](#), including its green purposes.

Further details can be found in the [Library Note on the Green Investment Bank](#).

7.3 Carbon Capture and Storage

Though not mentioned on the Autumn Statement speech or accompanying documents. However, [DECC announced to the stock exchange](#) in a two line statement that it would be removing the funding for CSS demonstration plants.

Today, following the Chancellor's Autumn Statement, HM Government confirms that the £1 billion ring-fenced capital budget for the Carbon Capture and Storage (CCS) Competition is no longer available.

This decision means that the CCS Competition cannot proceed on its current basis. We will engage closely with the bidders on the implications of this decision for them.

The White Rose CSS project in Yorkshire was already unlikely to go ahead, and the result of the announcement is that the proposed Peterhead Project is also effectively ended.

7.4 Energy efficiency

On 23 July 2015, the Government [announced](#) that the Green Deal - set up to provide finance to households to fund energy-saving home improvements - would close to new applicants and would receive no further Government funding. The Green Deal Finance Company, whose role is to lend money to the companies carrying out such works, has also seen its Government funding stopped. This followed a Treasury announcement in its Productivity Plan [Fixing the Foundations](#), on 10 July, that the introduction of the Zero Carbon Homes standard in 2016 would be dropped.

A package of measures to reduce the projected cost of green policies on the average annual household energy bill by £30 from 2017 was announced in the Autumn Statement. The bulk of these savings will come from [reform of the Energy Company Obligation](#) scheme. This will be replaced from April 2017 with a new cheaper domestic energy efficiency supplier obligation which will run for 5 years. The new scheme

will upgrade the energy efficiency of over 200,000 homes per year, saving those homes up to £300 off their annual energy bill.

7.5 Impacts of Policy Changes

The potential impact of all these changes on investor confidence was reflected in the UK dropping out of the top ten most attractive countries to invest in renewables (from eighth to eleventh) according to the [EY Renewable Energy Country Attractiveness Index](#), which has been running for thirteen years ago. The report concluded that “a wave of policies reducing or removing various forms of support for renewable energy projects has confused investors and consumers”. The changes have also led to the Energy and Climate Change Committee launching an inquiry, which is ongoing, into [Investor Confidence in the UK Energy Sector](#). This will “be looking at what steps Government must take to restore confidence in the UK’s energy sector and improve DECC’s policy making processes”.

The changes have also led the Government’s commitment to reducing emissions and tackling climate change being called into question. Ministers have been consistent on [reiterating](#) that this is not the case, stating that unchecked climate change is one of the greatest long-term economic risks this country faces.

7.6 New Direction for UK Energy Policy

In [speech](#) on 6 November the Secretary of State set for her [vision](#) for “an energy system that puts consumers first, delivers more competition, reduces the burden on bill-payers and ensures enough electricity generation to power the nation”. This included:

- Consultation on ending unabated coal-fired power stations by 2025
- New gas-fired power stations a priority
- Commitment to offshore wind support completes commitment to secure, low-carbon, affordable electricity supplies
- Move towards a smarter energy system

The Government also intends to focus on innovation for clean and cheap technologies and on market led choices, to keep costs as low as possible.

8. News articles

World makes 'huge step forward' with Paris climate change agreement

Times [subscription required]

13 December 2015 Harriet Line, David Rankin

<http://www.thetimes.co.uk/tto/environment/article4639670.ece>

Storm Desmond rainfall partly due to climate change, scientists conclude

Guardian

11 December 2015 John Vidal

<http://www.theguardian.com/environment/2015/dec/11/storm-desmond-rainfall-flooding-partly-due-to-climate-change-scientists-conclude>

Storm Desmond: £50m flood fund pledged for victims

BBC Online

9 December 2015

<http://www.bbc.co.uk/news/uk-35052705>

Spending on flood defences has been cut by £116m this year

Times [subscription required]

8 December 2015 David Brown and Callum Jones

<http://www.thetimes.co.uk/tto/news/uk/article4635109.ece>

Cameron to review flood defence spending

FT.com [subscription required]

7 December 2015 Mure Dickie in Carlisle, Kate Allen and Jim Pickard

<http://www.ft.com/cms/s/0/4d8527c4-9d08-11e5-b45d-4812f209f861.html#axzz3twEbfcMh>

Stop-start approach to flood defence funding

FT.com [subscription required]

7 December 2015 Gail Plimmer

<http://www.ft.com/cms/s/0/57b91e9c-9cf1-11e5-8ce1-f6219b685d74.html#axzz3twEbfcMh>

Spending Review: 15% budget cut at Defra, £2.3bn flood defence spend protected

Water Briefing

26 November 2015

<http://waterbriefing.org/home/finance-and-risk/item/11635-spending-review-15-budget-cut-at-defra-%C2%A323bn-flood-defence-spend-protected>

UK cancels pioneering £1bn carbon capture and storage competition

Guardian

25 November 2015 Damian Carrington

<http://www.theguardian.com/environment/2015/nov/25/uk-cancels-pioneering-1bn-carbon-capture-and-storage-competition>

Top UN scientist attacks UK cuts to renewable energy subsidy

FT.com

19 October 2015 Pilita Clark

<http://www.ft.com/cms/s/0/96ec7b9c-7648-11e5-933d-efcdc3c11c89.html#axzz3twEbfcMh>

Green Investment Bank to be part-privatised

BBC Online

25 June 2015

<http://www.bbc.co.uk/news/business-33263710>

9. Press releases

DEFRA

A country more flood resilient

13 December 2015

Environment Secretary announces work to identify additional flood protection measures in Cumbria

Work to identify additional flood protection measures for Cumbrian communities affected by extreme weather events like the record rainfall seen last weekend was announced by Environment Secretary Elizabeth Truss today.

The new Cumbrian Floods Partnership group will consider what improvements to flood defences in the region may be needed, look at upstream options for slowing key rivers to reduce the intensity of water flows at peak times and build stronger links between local residents, community groups and flood defence planning.

The group, who will publish a Cumbria Action Plan next summer, will be chaired by Floods Minister Rory Stewart and made up of local authorities, the Environment Agency and community flood defence groups.

Elizabeth Truss said:

After seeing first-hand the impact of the flooding in the north of England it is clear that the growing threat from more extreme weather events means we must reassure ourselves, and those communities at risk, that our defences, our modelling and our future plans are robust.

The Environment Secretary also announced today a National Flood Resilience Review to better protect the country from future flooding and increasingly extreme weather events.

She outlined how her department would look afresh at how we calculate flood risk, in light of recent events, to be delivered by a new cross Government team. This will see Government updating 'worst case scenario' planning, considering the future impacts of climate change and carrying out a risk assessment of critical infrastructure, like electricity substations.

The review, also to be published next summer, will be led by the Chancellor of the Duchy of Lancaster Oliver Letwin and include the Government's Chief Scientist, Defra, DECC, DCLG, HMT and the Chief Executive of the Environment Agency.

Elizabeth Truss added:

We are already spending £2.3 billion over the next six years to better protect 300,000 homes from flooding, but we need to be sure we have

the very best possible plans in place for flood prevention and protection across the whole country.

We will take prompt action where we identify any gaps in our approach and where our defences and modelling need strengthening.

Sir James Bevan, Chief Executive of the Environment Agency, said:

Our thoughts are with people who have experienced flooding this week. Our teams are on the ground providing support to these communities as part of a multi-agency response, checking and maintaining flood defences, pumping out flood water, clearing blockages in rivers, monitoring water levels and working with local flood wardens in the areas worst affected.

Whenever an exceptional event happens it's important to review what happened and how to prepare for the future. With a £60 million fund to help with recovery in Cumbria, in

addition to the £2.3 billion Government have committed to protect homes from floods across the country, we have the resources necessary to manage flood risk in England. The National Flood Resilience Review and the Cumbria Floods Partnership give Government, the Environment Agency and community groups the forums to review and ensure we are directing our resources to protect people most effectively.

Rory Stewart will also be taking on a special Floods Envoy role across Cumbria and Lancashire coordinating the flood recovery operation across local agencies over the coming months.

To aid recovery efforts in the affected regions, the Chancellor has already announced an additional [£51 million to support households and businesses affected](#) by last weekend's devastating floods in Cumbria and Lancashire. This takes the total support pledged by the Government to over £60 million.

This will be in addition to £2.3 billion of investment over the next six years to build 1,400 new flood defence schemes that will better protect 300,000 more homes.

DEFRA

North west England floods 2015: government response

Last updated: 11 December 2015, [see all updates](#)

Government information and advice about the support available following flooding in north west England.

Government departments, councils and the Environment Agency are working together to do everything they can to help communities recover from the extreme weather during December 2015.

Latest situation: 11 December 2015

This weekend rain is forecast to continue over the north west and communities are asked to remain vigilant and to check [flood warnings](#). Environment Agency staff are on the ground with other emergency response staff and military personnel to help people affected.

With flood alerts and warnings still in place for many areas of the north of England, government is working to ensure local emergency responders have everything they need.

You can [check your flood risk](#) and keep up to date by following [@EnvAgency](#) and [#floodaware](#) on Twitter.

Government support for homes, businesses, farmers and councils

An [additional £51 million](#) to support households and businesses affected by the floods has been announced by the Chancellor. This takes the total support pledged by the government to over £60 million.

[Support payments worth up to £20,000](#) will be available to farmers across Cumbria and North Lancashire who have been affected by flooding to help restore damaged agricultural land.

[Business rates and council tax relief](#) for affected communities has been announced by the Communities and Local Government Secretary.

We will be opening the [Bellwin scheme](#) for councils affected by floods, and that 100% of eligible costs will be met by the government.

Government action on flood defences

Flood defences protected 8,600 homes across the north of England and, provided vital time for homes and businesses to be evacuated as well as reducing the impact.

Over the next 6 years we will be investing £2.3 billion in flood defences which is a real terms increase on the £1.7 billion invested in the last Parliament. This in turn is a real terms increase on the £1.5 billion spent between 2005 and 2010.

In addition, flood maintenance spending will be protected in real terms over this Parliament.

Flood insurance

The insurance industry is responding with help for homeowners. The Association of British Insurers has published a film on how to protect your home if you live in a flood prone area, or make a claim if you're recovering from a flood. You can find more information on the [Association's website](#).

Climate Central

Climate Change Found to Increase Heavy Rains Like Those of UK's Storm Desmond

11 December 2015

Non-Technical Summary Statement:

A fierce Atlantic storm, Desmond, struck parts of northern England, southern Scotland and Ireland the weekend of December 4-6, 2015, with 13.44 inches (341.1 mm) of rain falling at Honister Pass, Cumbria within 24 hours — possibly setting a national record. The [U.K. Met Office issued a rare red "take action" warning](#) — the first since February 12, 2014 — for parts of Cumbria and the Scottish Borders as a result of this powerful storm. The excessive nature of this record rainfall event, which led to flooding of more than [5,000 homes and businesses](#) and left [over 60,000 people without power](#) has led many to question whether climate change played a role, especially since there have been several large floods over the last decades.

Recent advances in the science of extreme event attribution now make it possible for scientists to, using peer-reviewed methods, rapidly provide an objective, quantitative initial estimate of the relative contribution of global warming to specific classes of extreme weather events. As a result, these analyses provide estimates of the return-time period of the event both today and in the past — before there was a strong human influence on the climate system. The ratio of these is a measure of the extent to which climate change affected the likelihood of the event. Overall, extreme event attribution can provide valuable information to decision-makers faced with tough questions about changing risks and to underpin adaptation strategies at a more local level.

To assess the potential link between the U.K.'s record rainfall and man-made greenhouse gases in the atmosphere, Climate Central, the [Royal Netherlands Meteorological Institute \(KNMI\)](#) and the [University of Oxford](#) — as part of the [World Weather Attribution \(WWA\)](#) partnership which also includes [Red Cross Red Crescent Climate Centre](#) and [University of Melbourne](#) — conducted independent assessments using three peer-reviewed approaches. These approaches involve statistical analyses of the historical temperature record, the trend in a global coupled climate model, and the results of thousands of simulations of possible weather with a regional climate model. Applying multiple methods provides scientists with a means to assess confidence in the results.

Based on these three approaches - all of which are in agreement - the team found that global warming increased the likelihood of the heavy precipitation associated with a storm like Desmond. The increase is small but robust. It should be noted that a positive attribution for an extreme rainfall event like Desmond is still somewhat rare. Evidence of this can be found in a summary of the events analyzed as part of the annual [BAMS Special Issue on Explaining Extreme Events from a Climate Perspective](#). Whereas the vast majority of heat events studied found a

climate change signal, less than half of the papers looking at extreme rainfall events found a human influence.

By comparing recent extreme events with the historical record and climate model simulations, the team found that an event like this is now roughly 40% more likely due to climate change than it was in the past, with an uncertainty range of 5% to 80%. It is important to note that this analysis only considers externally driven changes in precipitation. It does not take into account other factors that influenced the flooding. While our analysis provides evidence that climate change has aggravated the flood hazard in this part of the world, risk is also determined by trends in exposure and vulnerability. As events like this become more common in the U.K., it will be important to discuss both changing risks associated global warming and the overall adequacy of flood defences.

https://www.youtube.com/watch?v=JvDjyqH3Rfw&feature=player_embedded

Figure 1: Data from NASA's Integrated Multi-satellite Retrievals for GPM (IMERG) were used to estimate rainfall for the period from November 30 to December 7, 2015. This analysis found that some rainfall near the Irish Sea measured over 392 mm (~15.4 inches) during this period. As much as 304 mm (~12 inches) of rain were reported to have fallen in only 24 hours.

Credits: [SSAI/NASA/Hal Pierce](#)

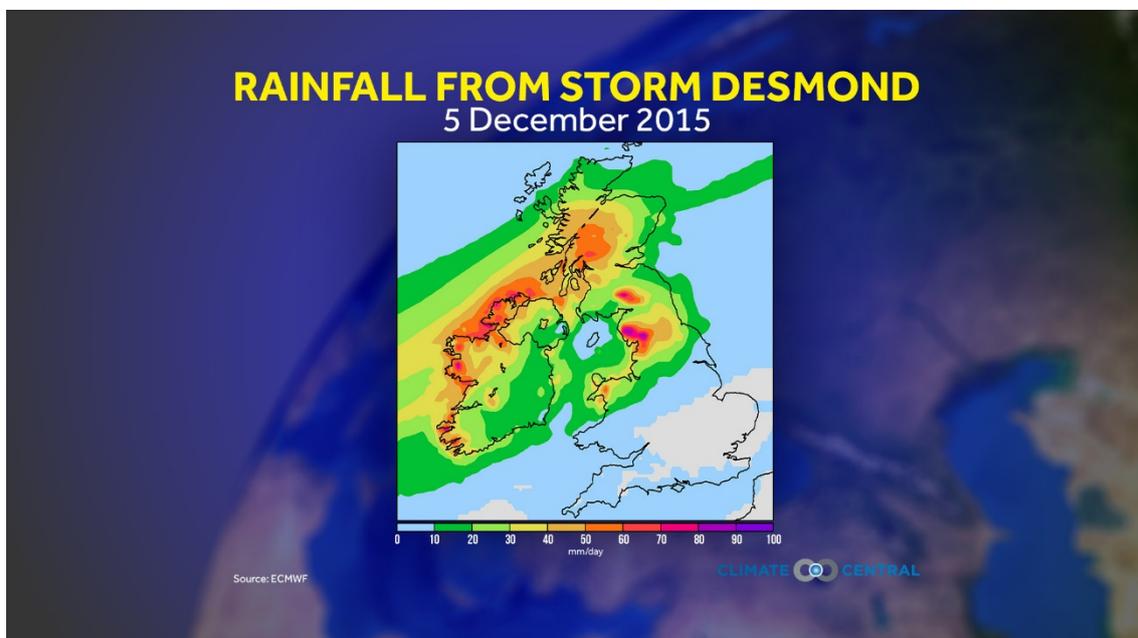


Figure 2: The above map shows 24-hour rainfall amounts from Storm Desmond on December 5th, 2015 in units of mm/day.

[high-res version >>](#)

Summary of Key Scientific Parameters

Variable	Precipitation
Event Definition	24 hour maximum precipitation
Domain	54°–57°N, 6°W–2°E Results were checked against local station data. Over the large area, the ECMWF analysis gives an average precipitation of 36.4 mm on 5 December (0–0 UTC).
Observational Data	ECMWF 24-hour precipitation forecast ECA&D
Models Used	<i>Global coupled model:</i> EC-Earth 2.3 model (16 runs, 1861–2015) 100km resolution <i>Regional model:</i> weather@home HadRM3P at 50km resolution over Europe, driven by HadAM3P & OSTIA SSTs
Results	Overall: 5% to 80% more frequent <i>Method #1 (KNMI): Observations: 30%-180%</i> <i>Method #2 (KNMI): Global Coupled Model: 10%-80%</i> <i>Method #3 (Oxford): Regional Large-ensemble: 5%-50%</i>

Woodland Trust**Trees & flooding: A progress report - Part 1****Diane Mills**

11 December 2015 Many of the same UK communities that flooded in 2014 are facing flooding all over again... so what's happened in the intervening months and are we making any progress? Over the course of two blogs I take a look at what has and hasn't moved on in the intervening period.

It's not even two years since the dramatic floods across the country led to us to discuss [how trees can reduce the risk of flooding](#). Then we called for greater support for the creation and management of trees and woodland which will ensure their full role in flood defence can be realised.

It may not be much consolation to those dealing with flooding in their homes right now, but there does seem to be a slowly dawning realisation in Government and its agencies that upstream measures to reduce flows before they reach our towns and villages are going to be needed.

At the start of the week BBC Radio's Today listeners could hear the Minister for the Environment, Food and Rural Affairs, Elizabeth Truss, say that the Government is looking at upstream measures, such as planting more trees, as part of its flood risk management response.

Last month, the Minister also spoke in Parliament about how 'as part of the 25-year environmental plan and the natural capital approach, we will be looking at things such as how we can use the planting of trees to help flood defences'.

She had just returned from a visit to the [Slowing the Flow at Pickering project](#) in north Yorkshire which has seen the planting of over 40,000 trees in two catchments and the creation of over 160 large woody debris dams.

Levy funding

The flood risk management establishment in some parts of the country is also starting to sit up and take notice – for example the North West Regional Flood and Coastal Committee (RFCC) is using its levy funding to support a Slowing the Flow project which will undertake habitat creation and restoration focussed on using natural processes to help reduce flooding.

While, the Severn and Wye RFCC has helped fund a natural flood risk management project in Stroud – [Stroud Rural SuDS](#) – which is working with local community flood groups, landowners, farmers and partner organisations to implement a range of measures that will reduce flood risk but also improve water quality and enhance the biodiversity of the streams, brooks and the wider River Frome catchment.

The Environment Agency is also getting more vocal about the potential for natural flood risk management measures to help reduce flood risk. Any day now, we have been told to expect an EA position statement on natural flood risk management that should ensure all its staff are left in no doubt that this is an approach that deserves careful consideration and support.

Although a good test of the Environment Agency's and the Government's commitment to embracing natural flood risk management will be the content of the forthcoming Flood Risk

Management Plans for England – currently sitting on the Floods Minister's desk, but due to be published on 22 December.

The Environment Agency has also established the [Working With Natural Processes \(WWNP\) research initiative](#) which is about to get underway – and which we are supporting. This research may prove to be the crucial factor in persuading any remaining sceptics of the value of the natural flood risk management; it will 'develop the evidence base, and subsequently, the technical guidance and tools needed by flood and coastal risk management authorities to help them understand, justify, develop and implement schemes which include WWNP to reduce flood risk'.

In other words, it should give confidence to those in the flood risk community who are currently wavering on this issue.

Countryside stewardship

Meanwhile, opportunity mapping has been undertaken by Forest Research to identify opportunities for woodland creation to flood risk (and reduce rural diffuse pollution) across England and Wales and these maps have been used to target Government grants for woodland creation via the newly launched Countryside Stewardship scheme.

An issue remains, however, that this mapping is still unavailable to anyone outside of Government which doesn't help 'other stakeholders to target woodland planting outside of the grant aid system' – one of the stated aims of the mapping.

It's early days for Countryside Stewardship and we have yet to see what impact it will have on planting in areas linked to flood risk. However, it seems likely that it will take a much concerted effort on behalf of Defra, and the Environment Agency in particular, to ensure that planting at the scale needed, and in the right places, takes place if we are to truly see the benefits of woods and trees for flood risk management.

The need for this effort is clearly not going to dissipate in the coming years. Climate change seems set to be felt most keenly by UK citizens via its impact on water – flooding and drought in particular. Which is why a need for improved water management that works with the environment is so desperately needed – you can read more on this in the [latest report from the Blueprint coalition: Water Matters](#).

Which brings me on to the final change in Government that we've seen since the last floods – the Minister has at least acknowledged that the increasing incidence of flooding in this country is linked to climate change. Now we need to see a ramping up of the Government's response, including natural measures, to meet this escalating threat.

BIS

New funding for flood-affected businesses

9 December 2015

New £5 million business support scheme to help flood-affected businesses get back on their feet.

Today the Chancellor announced [additional funding](#) to support those affected by last weekend's floods in Cumbria and Lancashire.

As part of that, BIS has committed £5 million for businesses, with funding equivalent to £2,500 per business provided to local authorities. It's estimated that 2,000 firms may have been impacted by the floods.

Minister for Small Business Anna Soubry said:

We are providing £5 million of quick support for businesses forced to close their doors due to the floods. Our priority is to help these hard working business owners get back on their feet, so they can open their shop doors and be back in business for Christmas.

Yesterday the Communities Secretary Greg Clark announced [council tax and business rate relief](#) for those flooded.

Please contact your local Growth Hub for more information on how to access the business support.

10. Cumbria

Growth Hub contacts for Cumbria: Telephone: 0844 257 8450 or email info@cumbriagrowthhub.co.uk

11. Lancashire

Growth Hub contacts for Lancashire: Telephone: 0800 488 0057 or visit www.boostbusinesslancashire.co.uk

12. North East

North East Growth Hub including Northumberland: Visit <http://negrowthhub.co.uk/>

DEFRA, Natural England, Rural Payments Agency

Farming flood damage support announced

9 December 2015

Support payments for farmers affected by the floods have been announced.

Support payments worth up to £20,000 will be available to farmers across Cumbria and North Lancashire who have been affected by flooding to help restore damaged agricultural land, Farming Minister George Eustice confirmed today (9 December 2015).

The payments are part of a £40million [Community Recovery Scheme announced by the Chancellor](#) today to help hard-working people in flood-hit areas following the record rainfall in parts of North West England, taking the total of government support pledged to over £60 million.

In addition the Rural Payments Agency will not carry out inspections in the flooded areas and will make use of any flexibility in cross compliance and animal movement rules for affected farmers.

Farming Minister George Eustice said:

We understand flooding can have serious consequences for farmers and we want to provide practical support to those affected by last weekend's unprecedented rainfall in Cumbria and North Lancashire.

The new Farming Recovery Fund will help to cover farmers' short-term uninsured recovery costs, such as repairing damaged soils, tracks and flood channels. We will pay out on all eligible applications and we hope it will offer some relief at this challenging time.

I am also pleased to confirm the RPA will be relaxing inspection requirements on farmers in the flood-hit areas so farmers can focus all their efforts on getting back up and running.

The Farming Recovery Fund will provide assistance with four key areas, including:

- Restoring productive grassland
- Recovering productive arable and horticultural land
- Restoring farm vehicle access and,
- Repairing agricultural drainage.

Farmers who want to apply for the Farming Recovery Fund should contact the Rural Services helpline on 03000 200 301.

Meanwhile, Natural England is also temporarily lifting requirements that normally apply to Environmental Stewardship agreements and protected sites, so that farmers and land managers in Cumbria and North Lancashire can focus on recovery.

NFU

Our survey says: Weather volatility threatens British food production

02 Dec 2015

As the Paris Climate Conference today hosts its 'Farmers' Day', a new survey from the NFU has highlighted the damage that severe weather events have inflicted upon agriculture during the past decade.

The survey has revealed that two-thirds of farmers have noticed an increase in extreme weather, consistent with the climate change impacts

predicted by scientists. The majority of NFU member surveyed have seen changes in rainfall patterns and more flooding, with 25% also observing an increase in storms, gales or high winds. However, some farmers actually reported less severe weather, with 10% saying that winters had generally had becoming milder.

[See our infographic of the survey results here.](#)

NFU Vice President Guy Smith said: "It is very worrying that nearly 60% of farm businesses have actually been affected by severe weather events in the last 10 years. This news comes as a stark reminder that agriculture is on the front line of climate change impacts.

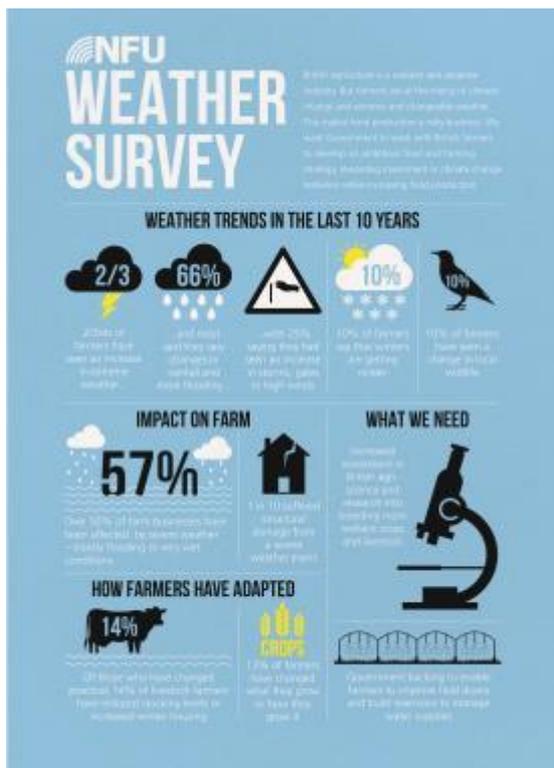
More...

- [Visit our #COP21 hub page for all the updates from the UN climate conference in Paris](#)
- [NFUonline key topic: Our climate change and weather pages](#)
- [The NFU at #COP21: Day One - Obama, Xi Jinping and Putin](#)
- [Read our industry's Greenhouse Gas Action Plan here](#)

"These statistics show the financial and emotional cost that changing weather patterns are having on our members and it reinforces the need for some of our key 2015 election manifesto asks to be met".

During the last election the NFU set the incoming government several challenges which included:

- Increased investment in UK-relevant agri-science including development and approval of biotechnology through to commercialisation.
- Fiscal incentives that enable farm businesses to manage volatility and promote capital investment.



Earlier this year, the NFU successfully argued that farmers' taxable profit averaging should be extended from two to five years to help our members manage the impact of volatility. But more needs to be done.

Mr Smith added: "From time immemorial farmers have always battled with the weather when it comes to producing food, but if climate change projections are correct then this battle is going to get more challenging. Investment in better buildings, better land drainage and better irrigation can make farms more resilient in the face of tempest, flood and drought. But the food chain must support profitable farming in order to enable such agricultural adaptation, backed by Government setting the right regulatory regime – such as allowing farmers access to water so they are prepared for times of drought.

"This survey shows that our members are altering what they do in response to the changes in the weather and longer-term climate that they are experiencing. However we're moving into uncharted climatic territory. This is why we want Government to work with British farmers to develop an ambitious food and farming strategy, rewarding investment in climate resilience so that we can fulfill our substantial production potential for an increasingly uncertain future."

Survey findings...

Farmers observing a change in weather patterns over the past 10 years:

- Almost 2/3rds have noticed an increase in severe events over the last 10 years
 - the majority of these seeing a change in rainfall and more flooding

- a quarter noticed an increase in storminess and wind speed
- 10% have seen winters becoming milder
- of those noticing a gradual change over the past 10 years, almost 10% have seen a change in local biodiversity.

Changes which farmers have made to their farm business practice in response:

- Of those who have noticed a gradual change
 - 14% of livestock farmers have altered practice either by reducing stocking levels and/or increasing winter housing
 - 11% have changed drilling/harvesting timings
 - 8% have changed crops grown or seeds used
- Over 40% have changed practice in response to a severe weather event but responses are similar to gradual change
 - 13% changing cropping or nutrient management practices
 - 9% upgrading buildings and infrastructure.

Actual impact on farm businesses:

- Over half of farm businesses have been affected by at least one severe event in the last decade
 - Over 2/3rds of these affected by flooding or very wet conditions
 - 10% suffered infrastructure damage.
- What do they need to be better prepared?*

- Other effective options include those actions to manage too much rain e.g. improving field drains, and too little (rainwater harvesting and tax breaks for reservoirs)
- the need for research into breeding more resilient crops and breeds.

Institution of Civil Engineers

ICE urges caution over cuts to infrastructure spending ahead of Budget

16 June, 2015

Simon Barney

Today we issue our pre-budget submission to HM Treasury ahead of July's budget, setting out our agenda for infrastructure for the next five

years. The submission highlights the threat of public spending cuts to many of the Government departments responsible for infrastructure delivery and maintenance.

In it, we urge the Government to honour the six year capital investment programmes that the previous coalition government made for both the strategic road network and flood risk management.

The submission also calls for Government to focus on maximising infrastructure's contribution to improved productivity and higher economic growth. Similarly, resilience needs to be built into the UK's infrastructure networks so that they are fit to face future challenges.

To achieve these objectives Government needs to collaborate with industry in a range of ways. These include creating a long term infrastructure decision-making framework and developing Infrastructure Network Performance Metrics.

ICE Director General, Nick Baveystock, said: "We are at a critical time – the dust has now settled and Government knows it must restore momentum, building on the solid foundations laid since 2010 and demonstrating its commitment to infrastructure as a catalyst for rebalanced growth, productivity and improved resilience.

"When public spending is tight, we know tough decisions must be made, but we hope Government acts with caution when it comes to spending cuts that could affect infrastructure delivery or impact on the progress made. The UK's resilience, in particular, should not hang in the balance.

"Resilience cannot be achieved through one-off cash injections to repair flood defences or patch up roads following extreme weather. It is a long term challenge which demands long term thinking. 5.2million properties are at risk of flooding in England alone, with annual flood damage costs in the region of £1.1billion. It has been estimated that maintaining existing levels of flood defence would require flood defence spend to increase to over £1billion per year by 2035.

"The upcoming Budget presents an opportunity for Government to make a clear statement about its commitment to building the UK's resilience, and ensuring we are fit to face future challenges. ICE stands ready to work with Government on this."

[The full submission can be viewed here.](#)

9. Parliamentary material

9.1 Statements

[Flooding](#)

Statement on the impact of Storm Desmond and flooding in the north of England.

HC Deb 07 December 2015 | Vol 603 cc708-722

<http://www.publications.parliament.uk/pa/cm201516/cmhansrd/cm151207/debtext/151207-0001.htm#15120711000002>

[Please see also questions following Statement, cc711-

<http://www.publications.parliament.uk/pa/cm201516/cmhansrd/cm151207/debtext/151207-0001.htm#15120711000544>]

The Secretary of State for Environment, Food and Rural Affairs

(Elizabeth Truss): With permission, Mr Speaker, I wish to make a statement on the impact of Storm Desmond and flooding in the north of England.

As the House knows, this weekend has brought some enormously difficult and extreme weather conditions, and I begin by expressing my deepest sympathy to those who have been affected in all parts of the UK. I also wish to commend the Environment Agency, the emergency responders and volunteers who have been working tirelessly throughout the weekend, often in horrific conditions. People have come from all over the country—from as far as south Wales, Lincolnshire and Somerset—to help. I am sure that the whole House will join me in paying tribute to them for their work, and to those who have shown such generous community spirit in offering food, transport and even beds to neighbours.

Over the course of Friday 4 December, it became clear that Storm Desmond would bring an exceptionally high volume of rainfall across the UK. The Environment Agency responded by mobilising its people and assets, moving temporary defences and pumps to north-west England. On Saturday morning, it became clearer which counties would be affected and that we would see very high levels of rainfall that evening.

The Government mobilised a full national emergency response. At midday on Saturday, I held a cross-departmental meeting to assess the projected impacts, which was shortly followed by the mobilisation of 200 military personnel and supporting assets, including making available a Chinook helicopter.

Local commanders were able to call on more than 50 high-volume pumps as well as specialist tactical advisers and rescue boats from around the UK, adding to more than 200 emergency responders

already on the ground. The Under-Secretary of State for Environment, Food and Rural Affairs, my hon. Friend the Member for Penrith and The Border (Rory Stewart), travelled to Cumbria on Saturday to ensure that the emergency responders on the ground got all they needed. He has remained in the north-west throughout.

On Saturday night, we saw an unprecedented amount of rainfall. More than a month's rain fell in one day. During Saturday night, main rivers all across Cumbria exceeded the highest levels ever recorded. There is a mark on the bridge in Carlisle showing the flood level in 1853. The 2005 flood was half a metre higher than that of 1853, which was the highest on record until then. This flood was half a metre higher again. It was 0.6 metres higher than previous records in Kendal, 0.7 metres higher in Keswick and 0.3 metres higher in Appleby.

Although more than 8,000 properties were protected by our flood defences, by Sunday morning, more than 3,500 properties had flooded across the country, the majority of which were in Cumbria. In Carlisle, more than 1,300 properties flooded. More than 600 properties flooded in both Kendal and Keswick, with more than 200 in Appleby. Flooding was also seen in Northumberland, with more than 60 properties flooded at Hexham. Some 55,000 properties lost power in Lancaster following the flooding of the electricity substation. Transport was severely disrupted with roads closed across the north-west and bridges damaged. The west coast main line was suspended.

Tragically, I also confirm that there were a number of weather-related fatalities, with a number of incidents caused or exacerbated by flooding or poor weather. I am sure that the House will want to join me in expressing our deepest sympathy to their families and friends. It is a tragic reminder of how dangerous these conditions can be.

On Sunday morning, I chaired a cross-Government Cabinet Office briefing room meeting to ensure that the emergency responders on the ground had all the resources that they needed and to address immediate issues, including the threat to the power supply in Lancaster and Carlisle. I spoke with gold commanders in the worst affected areas during the day to ensure they had sufficient national resources to deliver their emergency plans.

The Prime Minister chaired a further Cobra meeting this morning and is visiting the affected areas today. I am pleased to confirm to the House that progress is being made on recovering from some of the impacts. The number of homes affected by power outages has been reduced to fewer than 5,000 following the restoration of power at Lancaster substation. Electricity companies are working round the clock to restore power as soon as possible.

Transport remains disrupted across much of the area. Many roads remain closed and will need to be repaired. The west coast main line remains suspended to Scotland and service is unlikely to be restored until Wednesday at the earliest. The Government will continue to ensure

that all resources are made available to support recovery from this flooding. Cobra will continue to meet daily to oversee recovery efforts and I will be travelling to Cumbria and Lancashire after this statement to continue to ensure that we are doing all we can to help those affected.

I know that local communities will want to know what action Government will be taking to support the recovery phase. I am pleased to confirm to the House that my colleague the Secretary of State for Communities and Local Government will shortly be opening the Bellwin scheme for local authorities affected by floods, and that 100% of eligible costs will be met by the Government. We will announce further support schemes over the coming days.

Since 2009 we have invested £45 million in new defences in Cumbria, but we will need to reflect on lessons that we can learn from this extreme weather event. In the last Parliament there was a real-terms increase in the investment in flood defences and in this Parliament there will be another real-terms increase in spending. We are investing £2.3 billion in 1,500 schemes throughout the country that will better protect 300,000 homes. The spending review has also confirmed that we are protecting flood maintenance spending throughout this Parliament as well as capital spending.

I am sure the whole House will join me in expressing our sincere sympathy to those who have been affected by this weekend's extreme weather conditions. I can assure the House that the Government will continue to do everything we can to support those affected and I commend this statement to the House.

Written Statement: [PRIORITIES FOR UK ENERGY AND CLIMATE CHANGE POLICY](#)

Amber Rudd (Secretary of State for Energy and Climate change)

Today I am setting out my priorities for the UK's energy and climate change policy for the coming Parliament and publishing the DECC Autumn Update which sets out our key priorities and the recent progress the department has made against them.

Affordable, reliable clean energy is critical to our economy, our national security, and to family budgets. We need secure energy so people can get on with their lives and businesses can plan for the future. Affordable energy so the people that foot the bill get a good deal, and clean energy to safeguard our future economic security and ensure we can meet our climate change commitments.

I am confident the steps we have taken alongside National Grid and Ofgem will ensure the security of our electricity supply in the next few years. In the long-term, our vision is of markets characterised by rigorous competition to keep costs down. We want to see a competitive

electricity market, with government out of the way as much as possible, by 2025.

New nuclear and gas will be central to our energy secure future and we are encouraging investment in our shale gas exploration so we can add new sources of home-grown supply to our real diversity of imports. Today I am launching a consultation on a Strategy to Maximise the Economic Recovery of the North Sea.

We are world leaders in offshore wind and globally we can make a lasting technological contribution. Today I will announce that we will make funding available for three auctions in this Parliament with the first taking place by the end of 2016. This support will be strictly conditional on the delivery of the cost reductions we have seen already accelerating. If that happens we could support up to 10GW of additional offshore wind in the 2020s. We have already seen the cost of solar come down by 35% in the last 3 years.

One of the greatest and most cost-effective contributions we can make to emission reductions in electricity is by replacing coal fired power stations with gas. We will be launching a consultation in the spring on when to close all unabated coal-fired power stations. Our consultation will set out proposals to close coal by 2025 - and restrict its use from 2023.

If we take this step, we will be one of the first developed countries to deliver on a commitment to take coal off the system.

We have to demonstrate that the low carbon transition can be cost-effective and will deliver growth for the economy and affordable energy prices for consumers. We are on track for our current and next carbon budgets but the fourth carbon budget is going to be tough to achieve. We will need action right across the economy: in transport; waste and buildings. We will be setting out our plans next year for meeting the fourth and fifth Carbon Budgets.

To reduce bills and carbon we will also work to cut energy use itself. Over the last 5 years, more than 1.2 million households are seeing lower bills due to energy efficiency improvements. We are committed to ensuring a million more get the same benefits by the end of this Parliament, and that support is concentrated on those in greatest need.

A fully smart energy system could help us to reduce costs further by tens of billions of pounds over the decades ahead. Smart meters are a key building block and every home and small business in Britain will get them by the end of 2020. Alongside the National Infrastructure Commission, we will work with National Grid, Ofgem and others to consider how to reform the current system operator model to make it more flexible, responsive and independent.

As well as taking action at home, we must work with others internationally. Climate change is a global problem, not a local one. This is why I am determined that we help restore the EU Emissions Trading

System to full health and build stronger ties on energy within Europe, and why a global deal in Paris next month is so important. Paris must deliver that and help unleash the levels of private investment and local action needed.

DECC Autumn Update

Also today I am publishing the DECC Autumn Update which provides an overview of the Department's priorities and includes a number of progress reports, updates and recent publications of interest. This will be available on the GOV.UK website.

<https://www.gov.uk/government/collections/decc-update-autumn-2015>

In particular these include the Green Deal and Energy Company Obligation (ECO) Annual Report for 2015 and the Fourth DECC Annual Report on the Roll-Out of Smart Meters.

Green Deal and Energy Company Obligation (ECO) Annual Report

The Green Deal and Energy Company Obligation (ECO) Annual Report for 2015 covers the extent to which Green Deal plans and ECO have contributed to the carbon budgets. These schemes have helped install 1.6 million energy efficiency measures in 1.3 million homes since 2010.

Copies of the Report will be made available in the House Library. The report will be available on the GOV.UK website.

<https://www.gov.uk/government/publications/the-green-deal-and-eco-annual-report>

Fourth DECC Annual Report on the Roll-Out of Smart Meters

The report sets out progress made in 2015, and covers the work that government and industry are undertaking to ensure that the smart metering roll-out delivers the expected benefits to households and small businesses by the end of 2020.

The Programme is making good progress and consumers are already enjoying the control and convenience that smart metering brings, with over 1.7 million smart and advanced meters already operating in homes and businesses.

The annual report can be found at:

<https://www.gov.uk/government/policies/helping-households-to-cut-their-energy-bills/supporting-pages/smart-meters>.

18 November 2015 | HCWS312

Written statement: [UK GREEN INVESTMENT BANK](#)

Sajid Javid (Secretary of State for Business, Innovation and Skills)

My written statement of 25 June provided an update on work to move UK Green Investment Bank plc (GIB) into private ownership. It was always our intention that GIB should mobilise maximum private investment in the green economy. This reflects our policy aim of getting the market to work in tackling green policy challenges.

Bringing private ownership directly into GIB is part of this aim and a natural next step for the company now it has proved itself a successful commercial enterprise capable of operating with private sector capital rather than relying on public funding for its investments. It will allow the bank to access a much greater volume of capital than would be the case if GIB were to remain in Government ownership meaning it can grow its business, move into a wider range of sectors and have greatest possible impact in mobilising investment so that more green projects get financed more quickly than would otherwise be the case. The plans have the full support of the company and its independent Board, including Chair, Lord Smith of Kelvin.

As I said in my previous statement, a key objective in moving the company into the private sector is that it should be free to borrow and raise capital without this affecting public sector net debt. Giving GIB this freedom is essential if the company is to invest in accordance with its ambitious green business plan.

It is now clear that to achieve re-classification of GIB as a private sector enterprise, we need to remove the public sector controls imposed on the company by the Enterprise and Regulatory Reform Act 2013. Unless we remove these controls, there is a real risk GIB would remain classified to the public sector even after a sale so would remain subject to Government control over its capital raising. This unintended effect of the legislation has only become apparent in the course of our work to facilitate GIB's transition into the private sector.

In view of this, as a necessary part of the privatisation process, we now propose to use the Enterprise Bill, through an amendment shortly to be tabled at the Lords Committee stage, to repeal the relevant sections of the Enterprise and Regulatory Reform Act 2013 relating to GIB.

I recognise that in taking this step, people will wish to be assured GIB will nevertheless continue to invest in green sectors as Parliament envisaged. I wish to make clear that the Government also wants and expects a privately owned GIB to continue this clear focus on green sectors - mobilising more private capital and further accelerating the transition to a green economy.

It is clear from preliminary feedback that potential investors are interested in acquiring a stake in GIB precisely because of its unique green specialism and its green focused business plan. As part of any sale process, we would expect potential investors to confirm their

commitment to GIB's green values and to set out how they propose to ensure these are protected.

I will provide further updates about the transaction as soon as possible.

HC Deb 15 October 2015 | HCWS239

Written statement: [Green Investment Bank](#)

Sajid Javid (Secretary of State for Business, Innovation and Skills)

Over the last two years, the UK Green Investment Bank has seen success in unlocking private sector investment in key low-carbon and green sectors. The GIB has helped develop markets and shown that investment in green projects is good business. I want to see this success continue and to see the GIB continue to accelerate investment across the UK's green sectors.

To meet our low carbon and green objectives, we know that we need to continue to see significant investment. I want to see the GIB continue to play an important role in the transition to a green economy.

Attracting private investment to GIB will, I believe, enable the company to do this. It will allow the bank to grow its business, giving the expert teams we have established within GIB access to a much greater volume of capital than would be the case if GIB were to remain in 100% Government ownership. This will enable the company to have the greatest possible impact in mobilising investment and lead to more green projects getting financed more quickly than would otherwise be the case.

In the debate on the Budget in March, the then Secretary of State for Business updated Parliament about work to explore options for bringing in additional capital into the Green Investment Bank (GIB) as a way to ensure it is an enduring institution and has the operational freedom for investment across the green economy. We have therefore been exploring options for how best to get that capital and, with my Right Honourable Friends the Secretary of State for Energy & Climate Change and the Secretary of State for the Environment, Food & Rural Affairs, we have concluded that the best approach is to move GIB into private ownership subject to ensuring we achieve value for money. This should bring a number of important benefits, giving GIB greater freedom to operate across a wider range of green sectors in accordance with its green purposes, which are enshrined in legislation.

It has always been our intention that GIB should leverage the maximum amount of private capital into green sectors for the minimum amount of public money. Moving the company into private ownership is a

natural development for GIB that further delivers this aim. Our aim is that a transaction should result in GIB no longer being classified as a public sector body. This would mean GIB would be free to borrow capital so as to achieve its business ambitions without this having an effect on public sector net debt.

The detail and timing of any transaction will be set out in due course.

HC Deb 25 June 2015 | HCWS54

9.2 Debates

Westminster Hall debate: [Clean Energy Investment](#)

HC Deb 25 November 2015 | Vol 602 cc371-396WH

<http://www.publications.parliament.uk/pa/cm201516/cmhansrd/cm151125/halltext/151125h0001.htm#15112549000001>

Backbench Business debate: [Paris Climate Change Conference](#)

HC Deb 19 November 2015 | Vol 602 cc855-898

<http://www.publications.parliament.uk/pa/cm201516/cmhansrd/cm151119/debtext/151119-0002.htm#15111928000001>

[Global Climate Change](#)

Lords motion to take note of the case for action on global climate change and in particular its impact on the urban environment in the United Kingdom. Agreed to on question.

HL Deb 29 October 2015 | Vol 765 cc1283-1322

<http://www.publications.parliament.uk/pa/ld201516/ldhansrd/text/151029-0001.htm#15102957000845>

Westminster Hall debate: [Green Investment Bank](#)

HC Deb 29 October 2015 | Vol 601 c243WH

Westminster Hall debate: [Coastal Flood Risk](#)

HC Deb 7 July 2015 | c1WH-

<http://www.publications.parliament.uk/pa/cm201516/cmhansrd/cm150707/halltext/150707h0001.htm#15070733000001>

Climate Change

Opposition day debate 10 Jun 2015 | Vol 596 cc1259-1303

<http://www.publications.parliament.uk/pa/cm201516/cmhansrd/cm150610/debtext/150610-0003.htm#15061064000001>

9.3 PQs

Weather

Asked by: Cunningham, Mr Jim

To ask the Secretary of State for Environment, Food and Rural Affairs, what assessment her Department has made of its ability to (a) forecast and (b) mitigate the impact of extreme weather events on the UK; and if she will make a statement.

Answering member: Rory Stewart | Department: Department for Environment, Food and Rural Affairs

The Flood Forecasting Centre – jointly operated by the Environment Agency and Met Office – combines world class science, knowledge and experience on meteorology and hydrology to forecast flood risk. The daily assessment of risk enables extra time for emergency responders to prepare.

The Government has recently announced funding for a £97m supercomputer that will cement the UK's position as a world leader in weather and climate prediction. In addition to this, the Environment Agency operates a flood forecasting and warning service for over 3000 local communities at risk from both rivers and the sea. Advice is provided by phone and text to over 1.1m home and business owners when their property is at risk.

Further investment to improve timely and accurate information to the public is underway. A £6m programme of improvements to weather radar will be completed this year and live data on river levels from across England was made available on the Government's website earlier this year.

Climate change is factored into all the modelling work that the Environment Agency does, but in light of this extreme weather we must look at that modelling and ensure it is fit for purpose for future decisions.

HC Deb 10 December 2015 | PQ 18888

[Climate Change](#)

Asked by: Lucas, Caroline

To ask the Secretary of State for Environment, Food and Rural Affairs, what projection she has made of a global temperature increases by (a) 2050 and (b) 2100 caused by greenhouse gas emissions trajectories (i) under current trends and (ii) if all Intended Nationally Determined Contributions are delivered; what the implications of such temperature rises are in the UK for (A) coastal towns and cities, (B) extreme weather events and (C) food security; and if she will make a statement.

Answering member: Rory Stewart | Department: Department for Environment, Food and Rural Affairs

The Department of Energy and Climate Change and Defra have supported the AVOID Research Programme to project long-term climate change scenarios to understand how emissions reductions translate to global average surface temperature change. Based on a snapshot of the Intended Nationally Determined Contributions (INDCs) pledged by 1 October 2015, with an assumed continuation of comparable global emissions reduction to the end of the century, this analysis projects:

- (a) (i) by 2050, with continued rise in global greenhouse gas emissions, warming of between 2.3°C and 2.6 °C;
- (ii) by 2050, if all INDCs are delivered and continued, warming of 2°C;
- (b) (i) by 2100, with continued rise in global greenhouse gas emissions, warming of between 4.2°C and 5.2 °C;
- (ii) by 2100, if all Intended Nationally Determined Contributions are delivered and continued, warming of 3°C.

All of these estimates are temperature changes relative to pre-industrial global average surface temperature and best estimates of the climate's sensitivity to increasing greenhouse gas concentrations.

Under the Climate Change Act 2008, the Government has a statutory role to produce, on a five-yearly cycle, an assessment of the risks and opportunities for the UK arising from climate change. The first Climate Change Risk Assessment (CCRA) was published in 2012. It included consideration of impacts on our coastlines, on the frequency and severity of extreme weather, and on our food production. The CCRA used the 2009 UK Climate Change Projections to assess risks under different emissions scenarios up to the 2100s.

The National Adaptation Programme report which Defra published in July 2013 sets out how we are preparing for the impacts of climate change. This sets out more than 370 actions across key sectors involving government, business, councils, civil society and academia.

Work is underway on the second CCRA, which will include an up-to-date review of evidence on the effects of climate change. The CCRA Government Report and the associated evidence report will be published in January 2017. These will inform the next National Adaptation Programme due around 2018.

The Global Food Security programme recently launched a joint research council five-year £15 million research call on resilience of the food supply chain, in partnership with Defra and the Food Standards Agency.

HC Deb 09 December 2015 | PQ 18280

[Flood Control](#)

Asked by: Gardiner, Barry

To ask the Secretary of State for Environment, Food and Rural Affairs, with reference to paragraph 2.150 of the Spending Review and Autumn Statement 2015, how many of the additional homes to be protected from flooding are classified as at (a) very high, (b) high, (c) moderate, (d) low and (e) very low risk of flooding; and what estimate she has made of the number of such homes that will be in each such category after the completion of work to protect them from flooding.

Answering member: Rory Stewart | Department: Department for Environment, Food and Rural Affairs

The £2.3 billion 6-year capital investment programme will better protect over 300,000 homes and will move around 170,000 households from either 'very significant' or 'significant' flood probability category to the 'moderate' or 'low' probability category.

HC Deb 07 Dec 2015 | PQ 18598

[Flood Defences](#)

Asked by: Baroness McIntosh of Pickering

To ask Her Majesty's Government, in the light of recent flood warnings and alerts, what assessment they have made of the state of the United Kingdom's flood defences.

Answered by: Lord Gardiner of Kimble

My Lords, the Government are committed to long-term investment in new and existing flood defences. Some 96% of the UK's key flood defences are at or above target condition, with temporary measures in place for those undergoing repair. The department, the Environment

Agency and key responders are in a state of heightened readiness to respond rapidly to deploy pumps and temporary barriers, having learnt the lessons from the winter of 2013-14.

Baroness McIntosh of Pickering: I thank my noble friend the Minister for that Answer, and the key responders and emergency services such as the Environment Agency, local councils, flood wardens and others for all that they do. Will he take this opportunity to confirm that maintenance spending will match capital spending on flood defences and that he will leverage in as much private sector funding to improve flood defences as is possible?

Lord Gardiner of Kimble: My Lords, my noble friend is absolutely right in acknowledging the work that the vital services, the department, the Environment Agency, the Army and all sorts of voluntary groups do to deal with a dreadful situation when we have flooding of property and land. What the Government are doing by way of maintenance is important. Indeed, it was confirmed in the spending review that the maintenance budget would be safeguarded. It is also very important that we are spending more money on capital projects—£2.3 billion on more than 1,500 schemes. I am pleased to say that in the recovery programme for the maintenance of flood defences, 99.8% of flood defences damaged in the winter of 2013-14 now have permanent repairs. The remaining 0.2% have temporary repairs. Permanent repairs will be in place by March next year.

Earl Cathcart (Con): My Lords, given the spate of floods in recent years, what measures have the Government put in place to ensure that we are properly prepared for the next one?

Lord Gardiner of Kimble: My Lords, the best example of what my noble friend asked about is what happened over the weekend of 14-15 November this year, when very heavy rainfall was projected in the north of England. There was a considerable number of severe flood warnings and flood warnings. After the appropriate action was taken, 20,000 properties were protected by using permanent and temporary defences, such as pumps and barriers. I am sorry to say that 29 properties were flooded, but the work of people over that weekend prevented an enormous amount of damage.

Lord Foulkes of Cumnock (Lab): My Lords, both the Question and the Minister's Answer referred to the United Kingdom. What discussions have he and his colleagues in Defra had with their counterparts in the Scottish Government?

Lord Gardiner of Kimble: My Lords, clearly, because we are an extended family, we have continuing discussions, although Defra is responsible for England and the Scottish Government and the other Administrations are responsible for their areas. I have not personally had discussions, but discussions are taking place because, clearly, river courses cross boundaries. It is therefore important that we have a co-ordinated response because, for example, in the case of rain in the mountains of

Wales, we need to work with the Welsh authorities to prevent the flow of water coming into the Severn.

Lord Crickhowell (Con): My noble friend concentrated almost entirely on the maintenance activities of the actual flood defences. Does he not understand that it is almost equally important for the Environment Agency to work with the agricultural industry to prevent unnecessary flow off the land of the mud and silt that causes much of the damage, and for the local authorities and planning authorities to try to ensure that there is not unnecessary run-off from the hardstanding, concreting and all the other things that are a fundamental reason for much of the flooding?

Lord Gardiner of Kimble: My Lords, my noble friend is absolutely right that we need not only to protect property but to ensure that agricultural land and production of our food are safeguarded. That is why more than 98% of arable land in England is protected by flood-risk management assets. There has been no risk of flooding in those areas from seas and rivers.

My noble friend is absolutely right: we need to get our planning guidance right. That is why there has recently been a revision of planning guidance so that we avoid flash flooding as best we can. We are working closely with the NFU and our joint action plan on that is vital. My noble friend said that we need to reflect on how we farm near watercourses. We need to improve. Indeed, in relation to my noble friend who asked the Question, we are working on slowing the flow in Pickering, for instance. We have done great work in preventing flooding in Pickering by working with local farmers.

Baroness Bakewell of Hardington Mandeville (LD): My Lords, as the Minister has already said, the memory of the last disastrous flooding of the winter of 2013-14 is still with us. Is the Minister confident that, when Flood Re comes on board next April, it will both cope and be fit for purpose?

Lord Gardiner of Kimble: My Lords, it was my privilege to take the Flood Re regulations through this House. We had an interesting and useful debate on them. Flood Re is expected to cover the 1% to 2% of households at the highest risk of flooding. It will protect people in those properties to ensure that they can find affordable flood insurance. It will come in next spring and it will be a great advantage for people in those situations.

Lord De Mauley (Con): My Lords, can my noble friend update the House on the progress being made with partnership funding? This can allow schemes to proceed that would not otherwise be able to do so.

Lord Gardiner of Kimble: My noble friend is absolutely right. Partnership funding is in addition to the £2.3 billion of government spending on capital expenditure, which we wish to have in our six-year investment programme. We think there is about £600 million additional partnership

funding from private sources, local enterprise partnerships, public bodies and local levies. This will be very important. It will have a degree of flexibility, ensuring that we can work in areas that will be of the greatest benefit to the most people to protect their properties. It is a very important initiative.

Baroness Symons of Vernham Dean (Lab): My Lords, I declare an interest as my own village of Vernham Dean was badly affected by flooding last year, although I personally was not affected. Can the Minister assure the House that the Government have had discussions with the insurance companies to ensure that payments are made promptly when people are badly affected and have to leave their homes?

Lord Gardiner of Kimble: The noble Baroness makes a good point. I have not personally had those discussions but I will ask colleagues about it and write to the noble Baroness. My house was flooded and my insurance company—I had better not say which one—was very co-operative and worked extremely fast, so I think it is very important. As the noble Baroness said, it is about payment of bills. When someone is in the dreadful position of having their property flooded, we all need to rally round and the insurance companies need to pay.

HL Deb 03 December 2015 | Vol 767 cc1202-5

[Flood Control: Finance](#)

Asked by: McCarthy, Kerry

To ask the Secretary of State for Environment, Food and Rural Affairs, what funding the Government has allocated for flood defence maintenance in (a) 2015-16, (b) 2016-17, (c) 2017-18, (d) 2018-19 and (e) 2019-20.

Answering member: Rory Stewart | Department: Department for Environment, Food and Rural Affairs

The Government has confirmed through the Spending Review that, given the potentially devastating impact flooding can have on communities, Defra will protect investment in flood defences. We remain committed to spending £2.3 billion on over 1,500 schemes by 2021, better protecting 300,000 homes from flooding. Flood defence maintenance funding will also be protected, and a planned efficiency programme will generate 10% efficiencies by 2019-20, with all resultant savings reinvested in maintenance.

HC Deb 03 December 2015 | PQ 18118

[Carbon Sequestration](#)

Asked by: McCaig, Callum

To ask the Secretary of State for Energy and Climate Change, what assessment she has made of the potential effect on (a) the supply chain and (b) existing infrastructure of the Government's decision to cancel the carbon capture and storage competition.

Answering member: Andrea Leadsom | Department: Department for Energy and Climate Change

The provision of ring-fenced capital support for CCS was judged against other Government funding priorities as part of the Spending Review. We are engaging closely with the two bidders and wider industry on the implications of the decision. The Government's view remains that CCS has a potential role in the long term decarbonisation of the UK's power and industrial sectors.

HC Deb 10 December 2015 | PQ 18635

[Flood Control](#)

Asked by: Cunningham, Alex

To ask the Secretary of State for Environment, Food and Rural Affairs, what estimate she has made of the cost of maintaining flood defences in each year of this Parliament.

Answering member: Rory Stewart | Department: Department for Environment, Food and Rural Affairs

The Environment Agency spent directly £171 million maintaining flood defences in 2014/15. Many more flood defences are maintained by Local Authorities and Internal Drainage Boards.

HC Deb 16 November 2015 | PQ 16031

[Flood Defences](#)

Asked by: Mark Menzies

How many flood schemes are due to begin construction in 2015 under the Government's six-year flood defence programme.

Answered by: The Parliamentary Under-Secretary of State for Environment, Food and Rural Affairs (Rory Stewart) | Department: Environment, Food and Rural Affairs

The Government planned to launch 161 schemes in this financial year, providing extra protection for 70,000 households. As this is the Environment Agency's flood awareness week, let me take the opportunity to remind everybody living in risk areas for flooding that there is a very important personal responsibility to remain in touch with the Environment Agency, particularly through the winter months.

HC Deb 05 November 2015 | PQ 902030 | Vol 601 cc1102-3

10 Useful links and further reading

UN Framework Convention on Climate Change *Adoption of the Paris Agreement: draft decision* 12 December 2015

<http://unfccc.int/resource/docs/2015/cop21/eng/l09.pdf>

Royal Geographical Society *Extreme weather*

Is climate change increasing the frequency and severity of drought in the UK? Is climate change increasing the frequency and severity of extreme storm events? Is climate change increasing the volume and intensity of rainfall and flooding in the UK? Are warmer air temperatures causing glaciers to melt?

<https://www.rgs.org/OurWork/Schools/Teaching+resources/Climate+change+resources/Key+Stage+Five/Extreme+weather.htm>

Committee on Climate Change Climate Risk Assessment 2017

<https://www.theccc.org.uk/tackling-climate-change/preparing-for-climate-change/climate-change-risk-assessment-2017/>

2012 report

<https://www.gov.uk/government/publications/uk-climate-change-risk-assessment-government-report>

The National Adaptation Programme *Making the country resilient to a changing climate* July 2013

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/209866/pb13942-nap-20130701.pdf

Friends of the Earth *Floods, Climate Change and Flood Defence Investment* 8 December 2015

<https://www.foe.co.uk/sites/default/files/downloads/floods-climate-foe-briefing-december-2015-94324.pdf>

Met Office UK Climate Projections

<http://ukclimateprojections.metoffice.gov.uk/>

House of Commons Environmental Audit Committee current inquiry
The Future of the Green Investment Bank

<http://www.parliament.uk/business/committees/committees-a-z/commons-select/environmental-audit-committee/inquiries/parliament-2015/future-of-the-green-investment-bank/>

Report *Climate Change Adaptation* HC453 2014-15

<http://www.publications.parliament.uk/pa/cm201415/cmselect/cmenvaud/453/453.pdf>

Government Response HC590 2015-16

<http://www.publications.parliament.uk/pa/cm201516/cmselect/cmenvaud/590/590.pdf>

House of Commons Environment, Food and Rural Affairs Select
Committee report *Winter Floods 2013-14* HC240 2014-15

<http://www.publications.parliament.uk/pa/cm201415/cmselect/cmenvfru/240/240.pdf>

Government Response HC701 2014-15

<http://www.publications.parliament.uk/pa/cm201415/cmselect/cmenvfru/701/701.pdf>

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