LONDONASSEMBLY

Economy Committee

Weathering the Storm

The Impact of Climate Change on London's Economy

July 2015

Economy Committee Members

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Foreword

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We have long known that climate change will have a significant impact on our economic prosperity. Lord Stern issued a stark assessment in 2006 in his Review on the Economics of Climate Change, estimating that if left unchecked the costs could be equivalent to as much as one fifth of the world's economic output each year.

But we have found, in the course of this investigation, that we are still doing too little to understand and prepare for the potential costs to London's economy.

When I think about the impacts of climate change on London, my mind jumps to the Thames Barrier protecting us from sea level rises. But we have heard that our city will also be exposed to more frequent and severe problems with overheating and flooding from rainfall.

Not only does this directly impact business operations, but the insurance sector too faces rising costs, which may make commercial business cover prohibitively expensive if we do not adapt to reduce the scale of the impacts we face.

The committee has also heard that London's economic links with the rest of the world expose us to many less obvious risks.

Businesses import risks through their supply chains, and own risks affecting their overseas assets, particularly when they involve countries that are more vulnerable and less well placed to adapt. We have heard that this is already happening, with floods in Thailand affecting the global IT industry, for example.

With trillions of pounds of assets potentially at risk, these ripples on the surface of our economy could be early warnings of something much more disruptive to come.

These risks are complicated by uncertainty about the level of global warming we can expect to experience. If world leaders are unable to secure the reductions in greenhouse gas emissions that we need in the upcoming conference in Paris, global average temperatures may rise by four or even six degrees, putting severe strain on our ability to adapt and – in the words of the Intergovernmental Panel on Climate Change –

potentially compromising common human activities such as growing food.

On the other hand if the agreements are successful we may need to change our approach to investment in order to ensure we do not become vulnerable to a drop in the value of fossil fuels.

We have heard that all of these risks, and their relevance to businesses in London, are still poorly understood.

So I haven't been surprised to learn that businesses are not fully prepared for the changes to come. It has been encouraging to hear from business leaders that are showing the way, and I hope our report will encourage more to follow their example. Small businesses are the least likely to have addressed these issues, which is unsurprising when most are focussed on making it through the next six months, so we must find a way to engage and protect them.

It has also been positive to hear about the opportunity for London to lead the world in services that build resilience into our economies. This 'adaptation sector' is already estimated to have a turnover of £431 million, and needs to grow.

This report marks a significant moment in the Committee's work on this pressing issue. I hope it will inform policy makers, stimulate new thinking, and convince you that further work is needed to secure our future prosperity.

Jenny Jones

Executive Summary

London's status as a global city makes its economy increasingly vulnerable to climate change. Not only do we face higher risk of flooding, drought and heatwave events at home, but our city's interdependence with economies elsewhere in the world means we 'import' risk through the financial services sector and international supply chains. Yet, we have found that these risks, even as their likelihood and potential severity increase, are poorly understood in the capital. In turn, businesses are ill-prepared, and employees insufficiently skilled, to respond to the risks as they arise. Our city, and its economy, are not fully resilient in the face of climate change.

Water scarcity, extreme flooding, land loss and heatwaves are expected to become increasingly commonplace in the critical food-producing and industrialising regions which provide the basis for many of London's supply chains. However, little work has been done to establish the extent of this risk for London's economy. We recommend that the London Climate Change Partnership maps the major supply chain vulnerabilities of London's economy. They should also help businesses, in the most vulnerable sectors, develop the skills to evaluate and respond to the risks which they face.

Many businesses, including 54 per cent of FTSE 100 firms, have not built climate change adaptation into their business strategy or continuity planning. Furthermore, small and medium enterprises are particularly unlikely to have taken steps to prepare for the risk of climate change: evidence suggests 60 per cent have no plan in place to deal with extreme weather conditions. The adaptation strategies which SMEs have put in place, some as a result of work through Business Improvement Districts (BIDs), rarely take into account the wider vulnerabilities of global supply chains and investments.

To encourage adaptation planning, and sharing of best practice, we propose the launch of a Mayoral award for climate change adaptation. It is also of paramount importance that the London Climate Change Partnership, in collaboration with the Environment Agency, develops a monitoring and evaluation programme for London, to measure the extent of business adaptation to climate change.

The prosperity of London's financial services industry may be at risk, because its global investments are vulnerable to the impacts of climate change in other parts of the world. Compounding this, the extent to which major investors based in London have made investments in fossil fuels, is a concern. Any global carbon emissions agreement made, at the UN climate change conference later this year, could make proven fossil fuel reserves un-burnable, and cause the value of fossil fuel investments to fall.

Businesses often consider climate change risk just one of many, to be factored into investment decisions. Despite this, awareness of its potential severity is growing. Some London-based investors have aligned with the global movement to divest from fossil fuels, and The Bank of England is conducting an inquiry into climate change adaptation which will consider the possibility of fossil fuel reserves becoming stranded assets. We would like to see the Mayor join them, by committing to the principle of a transition away from investments in coal. Similarly, we hope that the London Pensions Fund Authority will explore the options for managed divestment of their funds. Funds could instead be invested into responsible funds, which deliver appropriate returns to the taxpayer.

Such investment could help the insurance industry maintain the critical role which it plays in supporting businesses vulnerable to wider climate change risks. The financial pressures for insurance companies, of continuing to provide commercial insurance in the face of climate change, may mean insurance cover becomes less viable for businesses. However, research suggests that encouraging investment in adaptation technologies, leads to increased protection from the risks, thus reducing the costs to the insurance industry, and maintaining the viability of commercial cover.

Investment can also be a force for good in helping SMEs and other businesses adapt to climate change. By encouraging, or requiring evidence of, continuity planning, from the companies in which they are investing, financial services companies can help raise awareness of the risks posed by future climate change. At the same time they could provide assistance to those companies which might otherwise struggle to respond. We recommend that the London Climate Change Partnership should explore the potential of this with key sectoral bodies.

Opportunities for economic diversification, through investment in the green economy, are growing but need further encouragement and support. London’s adaptation sector has an estimated turnover of £431 million, and employs around 4,000 people (2011/12 figures). And a Mayoral initiative to develop a hub for green entrepreneurship, in Old Oak Common, is beginning to take root. However there remains a lack of concerted investment in adaptation skills, research and business development. The Mayor, and London & Partners, could do more to promote London's internationally recognised strengths in the sector, and attract further overseas investment in London's adaptation technologies.

To ensure that London becomes resilient to the full range of risks which climate change presents, to the capital and its economic prosperity, we call upon the Mayor to integrate climate change adaptation into his Economic Development Strategy. This would commit him to drive forward a *resilient*, low carbon economy; develop London's adaptation skills base; encourage adaptation innovation; and attract and incentivise public and private investment in the adaptation sector. The strategy must take a risk based approach, developed through a systematic evaluation of the future risks which London's economy might face, and designed to respond flexibly to changing climate scenarios. Such a strategy would remain fit for purpose whatever the level of future global warming.

1. Introduction

> "Preparing for extreme weather and further climate change is about managing risks and increasing our resilience to them – it is therefore as much about the economy, quality of life and social equality, as about the environment. Early action today will not only manage current and future risks, but save Londoners money and create jobs."
> **The Mayor's Climate Change Adaptation Strategy, 2011**

1.1. As the Mayor has stated, "there is clear evidence that our climate is already changing… and that we run the risk of experiencing significant changes to our climate that will dramatically impact on our quality of life and the economy."[1] It follows that, alongside working to reduce climate change, we must also develop strategic responses to it to guarantee the continued resilience of our economic and social wellbeing.

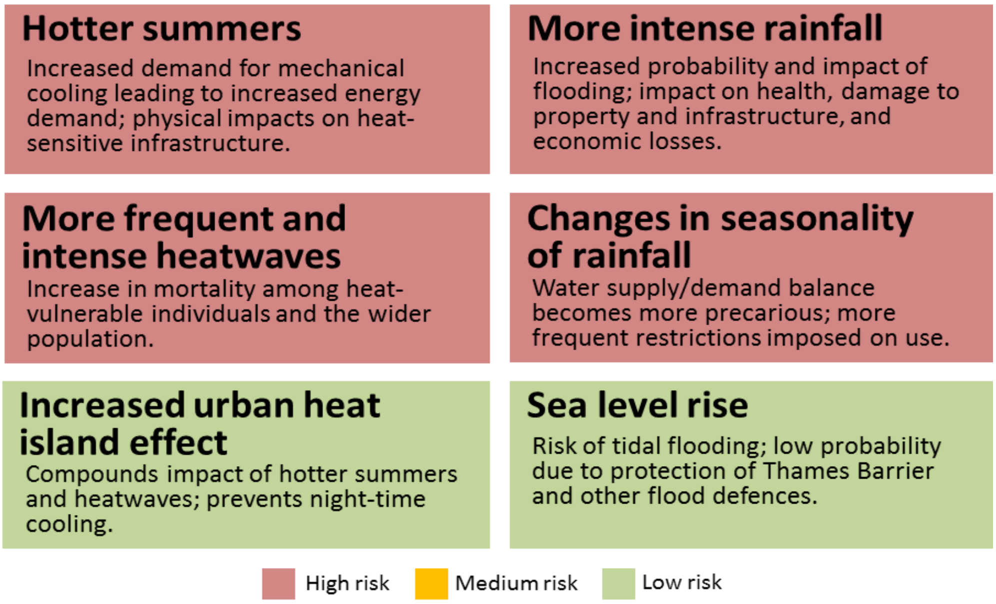
1.2. However, there remains considerable uncertainty about what level of global warming will occur in the coming decades, because of the difficulty of long-term projections and the uncertainty about both the outcomes of global negotiations on mitigation efforts and the implementation of agreed measures by governments.

1.3. The UK Government and most other governments globally are committed to the aim of limiting average global temperature rises to a maximum of 2°C above pre-industrial levels. Although the World Bank has estimated that even if all current pledges are met, the temperature could rise by up to 4°C by 2100.[2] This finding has been echoed by other analyses, including those released recently by the United Nations Environment Programme and PwC.[3]

1.4. Whatever the extent of the change, the physical impacts will not be uniform across the globe. For London, the Greater London Authority and Carbon Disclosure Project have recently identified the major impacts expected in the city, including more intense rainfall and more frequent heatwaves. These impacts are summarised in Figure 1 overleaf and have been explored in more depth by the London Assembly's Environment Committee.[4]

1.5. And it is not only physical risks at home which will impact significantly upon London. Our city is equally at risk from the indirect effect of impacts felt in distant parts of the world which are most vulnerable to climate change. Increasing water scarcity, extreme flooding, land loss and heatwaves are expected to become increasingly commonplace in the critical food-producing and industrialising regions which provide the basis for many of our supply chains. Most notably China, India and Indonesia. In turn, there will be a cascade effect of rising costs of materials and goods, and loss of trade and earnings, which will bring considerable costs to London's economy.[5]

London businesses will see an increase in physical climate change impacts



Summarised from: Carbon Disclosure Project, *Data provided for the CDP Cities 2013 report: Greater London Authority*, 2013

1.6. In recent years, there has been an increasing focus among researchers and policy-makers on the potential economic impact of the complex set of trends associated with climate change. In 2006, the UK Government published findings of a review on this topic led by the economist Lord Nicholas Stern, which concluded that the overall costs of climate change – if mitigation and adaptation measures are not taken – could be equivalent to losing at least five per cent of global annual Gross Domestic Product (GDP), and perhaps as high as 20 per cent.[6]

1.7. More recently, the Association of British Insurers estimate a significant tidal flood in London could have an economic impact on London 'equivalent to the scale of the recent recession'. However despite such headlines, we know little about the likely economic impacts of the full global complexity of climate change at city level. And so the focus of this investigation is on the hundreds of thousands of businesses that are based in London.

1.8. The amount of information available to support them is limited, for a number of reasons:

- There is a great deal of uncertainty about likely future impacts of climate change and the timescales seem beyond many business planning timeframes.
- There has been a lack of work at a city-wide or sectoral level to map differing climate change scenarios and the full range of impacts they will bring for the economy.
- At a business level, many, especially smaller businesses, lack the capacity and resources required to identify and address the risks they face.
- A number of firms are taking proactive steps in this area, but commercial sensitivities may make them reluctant to publicise their work, which limits the amount of shared learning that is possible.

1.9. This report presents a summary of what we have learned, and makes a series of recommendations for the Mayor and the London Enterprise Panel. These are designed to assist key decision makers to do more to support London's businesses in adapting to, and becoming resilient in the face of, climate change.

2. Risks for London businesses

> "Responding to climate change is perhaps the biggest global challenge of the 21st Century, and the transition to a low-carbon economy will require investors to take account of the reality of a carbon-constrained world. This shift is happening, but there are obstacles to overcome – stock markets are currently over-valuing companies that produce and use carbon..."
> **House of Commons Environmental Audit Committee, 2014**

2.1. The UK Climate Change Risk Assessment, published by the Department for Environment, Food and Rural Affairs in 2012 identified ten distinct risks for business arising from the effects of climate change. These included reduced returns for UK financial institutions' investments (due to the absence of mainstreaming climate risk and adaptation into decision-making processes) and a decrease in output for UK businesses (due to an increase in supply chain disruption as a result of extreme events).[7]

Supply chain vulnerability

2.2. One of the recurring themes of our investigation has been that London's position as a global city makes its economy, which is increasingly interdependent with economies elsewhere in the world, vulnerable to climate change impacts occurring overseas, as well as those in the UK. Daniel Dowling, Assistant Director of Climate Change and International Development at PwC, emphasised this to the Committee:

> London, as a globalised city, is potentially 'importing' a great deal of risk through its financial services sector and the international supply chains of large and small businesses. If we are looking to assess the total economic impact of extreme weather events and climate change on London's competitiveness, then we need to improve our understanding of the scale and distribution of these international risks. In addition to our growing appreciation of local physical risks here in London, we need to extend the scope of our analysis to include the risks to our business with interests abroad, where appropriate risk information is limited and the vulnerability of assets and operations is often higher.[8]

2.3. A key component of the London economy risk assessment is the international supply chains which many London businesses, and wider society, depend on. We have heard a number of examples where severe weather episodes in one part of the world disrupt economic activity elsewhere. The clothing, agriculture and electronics sectors are thought to be particularly vulnerable.[9] For instance, the 2011 floods in Thailand affected computer supplies worldwide as the affected area was the centre of global hard drive manufacturing.

A container ship unloading at Tilbury docks in Essex: London's economy depends on global supply chains that often originate in countries highly vulnerable to climate change. *Image: Ashley Dace*

2.4. The UK's international trade represents around 65 per cent of our Gross Domestic Product (GDP),[10] and London trades more than any region except the wider South East. The total value of commodities imported to London in 2014 was around £68 billion, while the value of exports, many of which are also to regions vulnerable to the impacts of climate change, was £29 billion.[11]

2.5. The Committee on Climate Change, an advisory body to the UK Government, reported recently that supply chain disruptions can lead to loss of revenue, reduced productivity and a fall in share price for businesses. It also identified a significant skills gap among supply chain professionals, many of whom have not been sufficiently trained to understand supply chain complexity. The biggest vulnerabilities tend to exist in the earliest stages of a supply chain – particularly in developing countries in South and South East Asia and in Sub-Saharan Africa – but these can be overlooked if businesses only consider the risks faced by their direct suppliers:

> The largest climate risks to supply chains appear to be in the earlier stages of product manufacture. These tiers of the supply chain are less likely to be understood and managed by UK businesses. Our analysis suggests a larger proportion of value in the earlier stages of production is generated in countries that are at a moderate or higher risk from climate change.[12]

2.6. The risks to London's economy from climate change are not limited to the local physical impacts of changing weather conditions. Yet both the Mayor's Economic Strategy and London Climate Change Adaptation Strategy focus on such impacts while failing to take into account the full complexity of interconnected global risk.

Recommendation 1:
When next revising the Climate Change Adaptation Strategy, **the Mayor** should include a chapter on the indirect risks of climate change for London's economy. This should consider the risks of a cascade of impacts, via supply chains, markets and investments based in vulnerable, remote regions. Particular attention should be paid to the security of those supply chains which underpin the functioning of London's economy and society. For example agriculture.

The London Climate Change Partnership, in support of this, and in line with its objective to map the interdependencies and critical pathways of London's supply chains, should work with sectoral trade associations and GLA's internal economics team, to clearly map the major vulnerabilities of London's economy. Additionally, those sectors which are found to be most vulnerable, particularly SMEs within those sectors, should be assisted to build the skills required to undertake their own supply chain mapping.

Investment Risks

2.7. London is a global centre for the financial services industry. A fifth of London's Gross Value Added (GVA, a measure of regional economic output) comes from the finance and insurance sector, which employs around 350,000 Londoners.[13]

2.8. We heard that the prosperity of London's financial services industry may be at risk because its investments are vulnerable to the impacts of climate change in other parts of the world. UK investors have £10 trillion of assets abroad (2011 figure), including in many countries with significant vulnerabilities to the effects of climate change, such as China. Figure 2 below lists the top 25 country destinations for UK investments, and the value of assets held there.

The UK has £10 trillion of assets overseas, including in countries vulnerable to climate change

Country	Value of UK assets (£bn)	Country	Value of UK assets (£bn)
United States	£2,784	**Hong Kong**	£112
Germany	£910	**Singapore**	£108
France	£867	**Sweden**	£96
Netherlands	£612	**Brazil**	£74
Japan	£439	**Denmark**	£73
Ireland	£409	**Finland**	£65
Switzerland	£336	**South Korea**	£56
Luxembourg	£296	**India**	£52
Spain	£282	**Norway**	£46
Italy	£262	**Russia**	£43
Australia	£196	**South Africa**	£42
Belgium	£180	**China**	£41
Canada	£167		

Source: PwC, *International threats and opportunities of climate change to the UK*, 2013

2.9. A further concern is the extent to which major investors based in London – including banks, insurers and pension funds – have made investments in carbon, specifically fossil fuels. This was highlighted in a recent report from the Carbon Tracker Initiative, which discussed the value of investments on the London Stock Exchange that are dependent on fossils fuels:

> The UK has less than 0.2 per cent of the world's coal, oil and gas reserves, and accounts for around 1.8 per cent of global consumption of fossil fuels. Yet the CO_2 potential of the reserves listed in London alone account for 18.7 per cent of the remaining global carbon budget. The financial carbon footprint of the UK is therefore 100 times its own reserves… With approximately one third of the total value of the FTSE 100 being represented by resource and mining companies, London's role as a global financial centre is at stake if these assets become unburnable en-route to a low carbon economy. [14]

2.10. This risk of a 'carbon bubble' is becoming increasingly live as we approach the UN Climate Change conference in Paris in late 2015. Any global carbon emissions agreement, limiting global temperature increase to 2 degrees, would make the majority of proven fossil fuel reserves un-burnable. The resulting drop in fossil fuel value would have a significant impact upon investment markets. As Professor Samuel Fankhauser of the Grantham Research Institute at the London School of Economics explained to the Committee:

> It is true if you just do the basic atmospheric physics that we can burn about one third of currently known reserves and then the atmosphere is full, which means two thirds have to be written off in one way or another. The good news, in a sense, is that this is now fairly well known by many people, including many investors.[15]

'The Source' exhibition at the London Stock Exchange: Investors based in London may be at risk from the 'carbon bubble' bursting if fossil fuel investments lose significant value. *Image: Kai Hsutai*

2.11. Despite this, companies have continued to invest in fossil fuel assets. A report from the Carbon Tracker Initiative and Grantham Research Institute showed that the stock market in London increased its exposure to carbon (particularly coal) by seven per cent between 2011 and 2013, and that fossil fuel companies were spending US$647 billion per year exploring new reserves.[16] One of the world's biggest oil and gas companies, Shell, recently wrote to its shareholders to reassure them of the value of its carbon assets:

> Indeed, changes in regulatory priorities could well be relatively sudden. However, because of the long-lived nature of the infrastructure and many assets in the energy system, any transformation will inevitably take decades. This is in addition to the growth in energy demand that will continue until mid-century, and possibly beyond. The world will continue to need oil and gas for many decades to come, supporting both demand, and oil and gas prices. As such, we do not believe that any of our proven reserves will become "stranded".[17]

2.12. However a divestment movement is gaining increasing global traction and we have seen investors, including the Guardian News Group, Bank of America, Church of England, and AXA Insurance, deciding to sell some or all of their investments in fossil fuel companies.[18] London's financial services sector could be affected negatively if such a movement gathers considerable support, particularly if it takes place suddenly. Conversely, divestment could bring wider benefits for climate change mitigation efforts, if investment is instead channelled into the green economy.

2.13. Simon Howard of the UK Sustainable Investment and Finance Association (UKSIF) highlighted the uncertainties of how this change in investment practices may occur:

> At this stage, if we consider the large investors, the things that are going to suffer are large listed companies, BP, British Gas, Exxon, the people who we might expect to benefit are at this stage small and unlisted and therefore not easy for regulated asset owners to invest in. Therefore one cannot simply say to a pensions fund, "Sell transport, sell oil, sell mining, and invest in wind turbines", because there is far too much money there, compared to that opportunity, and this opportunity is frequently in the venture capital/private equity space, and regulators treat assets held in those in a different way.[19]

2.14. The recent example set by the Norwegian Sovereign Wealth Fund is perhaps the most useful indicator of things to come. In January 2016, they will divest all holdings in companies for which mining or burning coal makes up more than 30% of their business. In total, this will result in divestment of $8 billion of the fund's investments, affecting 122 companies globally, including the UK utility SSE in which the fund holds $956m of shares. The Norwegian government has cited both global warming and financial risk incentives for the move.[20]

2.15. There is certainly a growing awareness of the potential of climate change to impact negatively upon global investment markets. The Bank of England is conducting an inquiry into climate change adaptation which will consider, among other things, the possibility of fossil fuel reserves becoming stranded assets. In parallel, the opportunities for economic diversification through investment in the green economy are growing.

2.16. The Assembly agreed, in March 2014, a motion to press the Mayor to publicly support the principle of divestment, and to commit the GLA to avoid investment in any funds connected with fossil fuel extraction.[21] The Assembly welcomed the Mayor's strong support for responsible investment as outlined in his response.[22] However he was unwilling to commit to a wholesale move away from fossil fuels, citing a continued need for natural gas as part of the UK's energy mix.

Recommendation 2:
The Mayor should commit to the principle of a transition away from investment in certain fossil fuels, namely coal, and towards reinvestment in responsible funds which deliver appropriate returns to the taxpayer.

Where possible, and in line with his priority to diversify London's economy, **the Mayor** should actively seek to build opportunities for investment in the green economy. For example by encouragement of public private partnerships to finance sustainable infrastructure projects under the London Infrastructure Plan 2050.

The London Pensions Fund Authority should draw up a plan for discussion of these two commitments at its board, looking at the options for managed divestment and responsible reinvestment of its funds from, at least, those companies for which a significant proportion of their business consists of fossil fuels.

Ability to insure climate change risks

2.17. The insurance industry has a vital role in the economy, helping to protect businesses against risk. As noted in the introduction to this report, climate change is expected to exacerbate a number of risks businesses face, and place financial pressures on insurance companies.

2.18. For instance, a recent report from the Met Office and the Association of British Insurers found that a 4°C rise in global average temperatures would lead to a 14 per cent increase in annual insured losses caused by floods in the UK.[23] As with investments, the risks for UK companies do not just come from domestic events: 30 per cent of premium income for members of the Association of British Insurers is earned overseas.[24]

2.19. A roundtable hosted in February 2015 by Climatewise,1 in association with the insurer Aviva and the University of Cambridge's Institute for Sustainability Leadership, suggested that the use, hitherto, of trend-based Catastrophe Models, to quantify the risk posed by natural hazard events, may have resulted in systematic underestimation of insured losses from climate change by up to 50 per cent. Avoiding such underestimation in future would necessitate a shift towards viewing risk based upon what might happen in future, rather than upon historical trends.[25]

2.20. An implication of the growing realisation of the potential extent of climate change losses may be that insurance cover becomes less available to businesses. For instance, in a recent survey of businesses by the consultancy Marsh, 63 per cent of respondents said they expected property assets with lower resilience, for example those vulnerable to flooding, would become uninsurable in the future.[26] The Committee heard about this prospect from Nick Beecroft of Lloyd's of London:

> The industry has no capacity to insure climate change. We cannot continually keep paying the costs of the same climate-driven events generating the same damage.[27]

2.21. Additionally, from Tom Burke, Chair of E3G:

> I suspect that we are going to find it increasingly difficult for businesses to get insurance if they are in high-risk areas for floods in particular, and also other weather-related events.[28]

2.22. A written submission from the British Property Federation highlighted the particular risks for smaller businesses seeking to obtain flood insurance:

> Small and medium-sized enterprises (SMEs) are more vulnerable than big businesses and their existence could be threatened if they are unable to afford their flood insurance premiums… SMEs are finding it increasingly difficult to obtain flood cover in high risk areas. This could have negative impacts on the UK economy as a whole but at a local level, on those communities who may lose access to local retailers and service providers.[29]

2.23. Climatewise concluded that government policy, particularly as it relates to investment in risk reduction measures, is key to enabling the insurance industry to continue to provide commercial insurance in the face of climate change. For example, in the UK, the creation of FloodRE flood

[1] a global collaboration of leading insurers focused on reducing the risks of climate change,

insurance was predicated on anticipated government investments in flood defences, which would reduce the risks from climate change and therefore make them more insurable. Furthermore, Climatewise questioned:

> …whether financial regulation should incentivise investment flows towards assets that contribute to risk reduction.[30]

2.24. The role of insurance regulation in supporting adaptation to climate change will be considered further in the Bank of England's work on adaptation to climate change. However, it is clear that encouraging investment in the adaptation economy will reduce risks from climate change and so, in turn, support the insurance industry to continue to provide commercial insurance in the face of climate change.

Skills gaps in the adaptation sector.

2.25. One of the barriers for firms in responding to climate change risks is a lack of necessary skills among the workforce. In a previous Economy Committee report, we identified a skills shortage in the building retrofit industry, particularly among property assessors.[31] At our meeting in October, Mark Jenkinson of Siemens highlighted a shortage of engineers needed to help build resilient infrastructure.[32] Dr Outi Korkeala of Ricardo-AEA explained that this was one of the findings of her recent research into the economics of adaptation for the European Commission:

> We modelled the employment implications of adaptation… we looked at the occupations, the skills needs up to 2050, and exactly those skills – for example statisticians, research and development, building and civil engineering, technicians – those are the skills that are needed in terms of adaptation and mainstreaming adaptation.[33]

2.26. A recent survey of businesses by the Institute of Environmental Management and Assessment found that a large majority of respondents did not feel their workforce was adequately trained in sustainability, across the areas of finance, product development and procurement. The survey also found 48 per cent of firms said recruitment of sustainability professionals with the necessary skills was problematic, and 42 per cent had met barriers in securing appropriate training for their staff.

2.27. However, a lack of skilled workers limits the development of adaptation responses within businesses. This prevents the growth of adaptation related employment opportunities and so demand for training in adaptation skills remains low. Without demand, training providers will not develop appropriate adaptation skills offerings and so it is impossible to address the lack of a skilled adaptation workforce. This is a critical choke point for the continued resilience of London's businesses in the face of a growing risk from climate change.

Recommendation 3:
The **London Enterprise Panel**, as a part of its ongoing skills audit, should evaluate the size and nature of the skills gap for the adaptation sector and put forward a proposal for how it might proactively encourage and support skills development in this area, particularly for SMEs.

3. Business adaptation to climate change

> "The business, industry and services sector is vulnerable to climate change due to the combination of the sector's climate sensitivity and adaptive capacity. Although the majority of the risks identified in this risk assessment fall into the category of climate sensitivity, a number of risks to the sector are the result of low adaptive capacity, and in particular, a low recognition of the need to act on climate change. This crucially needs addressing in order to minimise the potential risks and seize opportunities."
> **Department for Environment, Food and Rural Affairs: Climate Change Risk Assessment, 2012**

Business Level Adaptation Planning

3.1. The potential impacts for individual businesses may differ significantly. This makes it important that they identify their own specific risks and understand how business processes can be adapted to address them.

3.2. A number of tools and frameworks are available to businesses and other organisations, to enable them to assess their exposure and to devise business continuity or adaptation plans. These include the Business Resilience Health Check, an online tool developed by Climate UK, Business in the Community and the Environment Agency, which helps businesses assess their risks and identify actions they can take.[34]

3.3. In the Mayor's Climate Change Adaptation Strategy, he promotes the Business Areas Climate Impacts Assessment Tool (BACLIAT), produced by the UK Climate Impacts Programme (UKCIP), which helps businesses assess their climate change-related vulnerabilities in the areas of financing, market demand, logistics, production processes and service delivery, workforce and customers, building premises and management implications.[35]

3.4. However despite the availability of such tools, we have seen little evidence that businesses have made full use of them to map their dependencies or devise adaptation plans. In 2012, a Carbon Disclosure Project survey of FTSE 100 firms found that 80 per cent of them had identified substantive risks to their business from climate change, but only 46 per cent had incorporated climate change adaptation into their business strategy.[36]

3.5. The Committee has heard that smaller businesses face particular challenges in responding to the risks of climate change. As suggested by Dr Outi Korkeala of Ricardo-AEA:

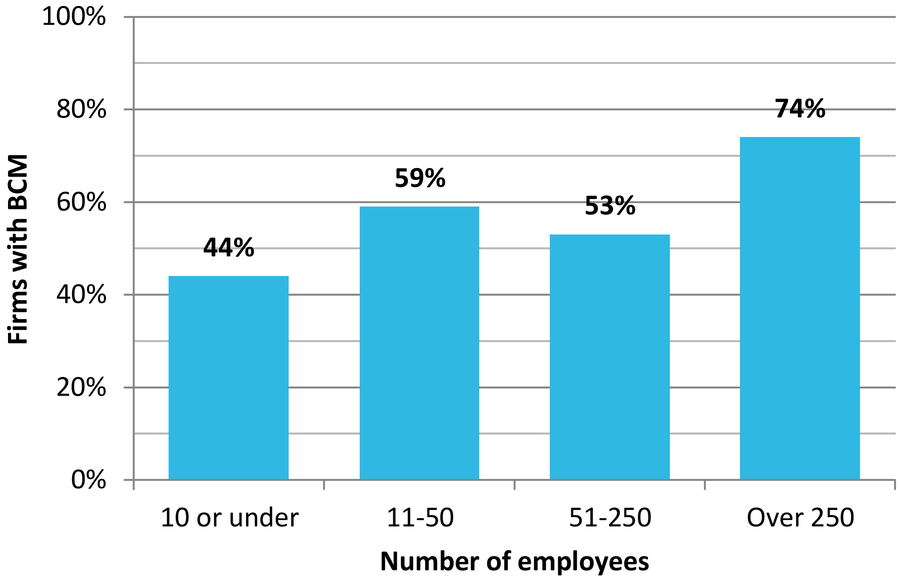
> There are plenty of tools available, for example the Environment Agency Climate Ready website. Whether those tools are useful, particularly for small businesses, it must be considered that sometimes when you talk about climate change, the risks… may be in 10 to 20 years' time. A small business is normally operated on a much shorter horizon.[37]

3.6. Additionally, by Professor Chris Rapley of the London Climate Change Partnership:

> The evidence is that it is the small and medium-sized enterprises [that are most vulnerable to climate change]. The point is the extent to which they have the capital, the time or intellectual capacity to think through these rather longer-term strategic issues when they tend to be living more hand-to-mouth, perhaps, than some of the bigger companies that can take risk management in a deeper and more profound way.[38]

3.7. Recent research by the Federation of Small Businesses, into the adaptation of small business to severe weather events, has found that three out of five small businesses they questioned did not have a plan in place to deal with extreme weather conditions. This is despite the fact that two thirds of small businesses have been negatively affected by

Small businesses are up to 30 percent less likely to have business continuity arrangements (BCM) than larger organisations.



Source: Chartered Management Institute, *Weathering the Storm*, 2013

flooding, drought or snow in the last three years.[39]

3.8. In 2013, the Chartered Management Institute, working with the Cabinet Office and other partners, published a survey of organisations, asking about the impact of severe weather disruptions and whether they had put in place business continuity management (BCM) arrangements to address this and other risks. The survey found that public sector organisations (72 per cent) are significantly more likely to use BCM than those in the private (58 per cent) and voluntary (58 per cent) sectors.

3.9. And, as shown in Figure 3 on the previous page, larger organisations are more likely to use BCM than smaller organisations (all sectors).

3.10. The London Climate Change Partnership has been working with Business Improvement Districts[2], such as the Team London Bridge Green Infrastructure Programme detailed below, to address the issue of infrastructure adaptation.

Team London Bridge – Green infrastructure

Team London Bridge is a Business Improvement District in Southwark. It has been taking steps to improve green infrastructure in the London Bridge area, which, among other benefits, will help boost flood alleviation for businesses.

Working with the Greening the BIDs programme, Team London Bridge carried out a Green Infrastructure Audit to identify 3.7 hectares of potential green roof space, 49 sites for rain gardens and 33 sites for green walls. Work is underway to fund and deliver these projects, providing an example of how businesses can work with each other and public agencies to address potential impacts of climate change.[40]

3.11. Clearly this is a positive step towards a better adapted SME community. However at present the scope of the work is limited solely to the local, physical risks of climate change. Adaptation strategies put into place do not involve planning or responses which take into account vulnerabilities of global markets, supply chains or investments.

3.12. While the availability of self-help tools online is a helpful starting point for businesses to address their adaptation risks and needs, and gives the impression that business adaptation planning is being taken care of, the reality, for SMEs in particular, is quite different. Lack of resources, such as

[2] a membership body for businesses, which raises funds to spend on improvements to the local area

a dedicated sustainability officer or budget, combined with a short term view of risks which might affect them, means SMEs are unlikely to prioritise adaptation planning, or to be aware of the tools available and the implications of failing to engage with them.

3.13. Additionally, the work which is being done directly with businesses is focussed on local adaptation. As a result, even those businesses which are alive to the risks of climate change do not have the full risk picture.

Monitoring business adaptation

3.14. We have considered the available evidence on steps businesses are taking to respond to these challenges. A small number of surveys have been conducted which examine how many firms have assessed their climate change-related risks and developed business continuity or adaptation plans. These are typically UK-wide, and no comparable evidence on adaptation by London businesses is available.[41]

3.15. Some businesses and business groups have shared information on their adaptation plans. For instance, the Committee heard from the retailer Marks and Spencer about its adaptation strategy:

> M&S currently has an adaptation strategy and is now working to integrate specific actions into existing processes ranging from planned, preventative maintenance regimes, retrofit specifications of equipment, up-skilling of relevant staff and tabling climate change risks at relevant high-level property decision making meetings.[42]

3.16. We have also heard about work undertaken by the supermarket chain Asda to identify and address climate change risks in its supply chains. The company has identified, for instance, that 95 per cent of its fresh produce is at risk from climate change. Asda has set out ways in which it is working with its suppliers to ensure they can adapt: for instance, one supplier was supported to increase its resilience to water shortages at a potato processing factory.[43]

3.17. However, ascertaining the extent to which businesses have implemented adaptation measures is difficult for two reasons. First, there is no formal reporting, monitoring and evaluation framework for the necessity for, and uptake of, adaptation measures across the London economy. Second, information a business holds about the impacts of climate change on its activity, and the adaptation measures it has adopted, is often considered commercially sensitive, and is therefore not publicly disclosed.[44]

3.18. Shared learning of best practice is identified in a 2014 report by European think tank E3G as essential for ensuring the full range of risks facing a city's economy are properly monitored and managed.[45] Without such monitoring it is impossible to plan for the city-wide implications of a particular climate change scenario. In particular, the risk that unforeseen, interconnected risks from climate change trigger a chain reaction of economic damage cannot be properly contained.

3.19. In addition, the ability of SMEs in particular, to monitor and influence supply chains for increased resilience is hampered by lack of scale, both in terms of finance and knowledge. John Steel, CEO of Fairtrade coffee suppliers, CafeDirect, believes collaboration is key.

> All stakeholders can collaborate pre-competitively to understand the longer term issues in a supply chain and take steps to make it more sustainable. [Or just] share resources and best practice with other businesses.[46]

Recommendation 4:
To encourage greater sharing of best practice, and so enable monitoring of adaptation implementation**, the Mayor** should launch an award for climate change adaptation to reward successful adaptation initiatives by London businesses. The Australian Climate Adaptation Champions Awards are a successful model of such a scheme.

3.20. The Committee heard from the Environment Agency which supports the idea of monitoring the take-up of adaptation measures by London businesses. Identifying, monitoring and evaluating a full range of indicators of adaptation actions would help London to measure the effectiveness of business action on adaptation. This would inform decision making at a London scale regarding the adaptation actions needed in certain climate change scenarios.

3.21. The Environment Agency told the Committee they would welcome the opportunity to work with GLA and the London Climate Change Partnership to contribute to the development of this type of approach.

Recommendation 5:
The London Climate Change Partnership should develop a London monitoring and evaluation programme for business adaptation to climate change, using the national set of indicators developed by the Adaptation Sub Committee of the Committee on Climate Change, as a basis**. The Environment Agency** should contribute to its development.

Support from the financial services industry

3.22. Financial services firms may have an important role to play in helping other London businesses to adapt to the risks of climate change, through their role as investors, creditors or insurers.

3.23. A 2013 report on climate change risks from PwC highlighted the possible role of insurance firms in helping clients adapt to risks:

> The insurance industry, with its risk management expertise and skills, is well-positioned to help society reduce its vulnerability and improve its community resilience. Greater resilience not only helps to reduce the impacts of adverse events but also to lower insurance premiums. The insurance industry is keen to reward preventive measures through lower premiums, and in return benefit from the lower volatility in losses as a result of lower frequency and magnitude of claims.[47]

3.24. Banks may also be well-placed to help their business clients, particularly smaller businesses, to focus on their climate change-related risks and consider adaptation plans. This could involve, for instance, encouraging them to use an adaptation planning tool at the time of a loan application. As Tom Burke of E3G suggested to the Committee:

> The people who share that risk with the businesses are the banks that are lending them their operating capital. All of the businesses go to the banks, and it seems to me the retail banks could play a much more positive role in helping their business customers understand these risks and prepare contingencies for handling those risks... building some relationship between the retail banks and those small business customers to help with resilience.[48]

3.25. The National Association of Pension Funds has agreed that investors have an important role to play in better supporting the businesses in which they invest to adapt to the challenges of climate change. Investors' fiduciary responsibilities to ensure pension promises are able to be met means trustees must take all reasonable steps to reduce the risk that businesses within their investment portfolios do not sufficiently adapt. And they have the ability to question and monitor investment managers to ensure that they are engaging appropriately with individual companies and managing the risks to their investments.[49]

Recommendation 6:
The London Climate Change Partnership should discuss with the **British Banking Association** and the **Association of British Insurers** the risk management benefits for their members, in paying closer attention to the resilience of the companies to which they loan funds / provide insurance.

BBA and ABI members could encourage those companies to provide comprehensive Business Continuity plans demonstrating their climate change resilience, as a condition of those deals. They could also provide assistance, particularly to SMEs, to help them meet the conditions set.

4. Opportunities in the climate change adaptation sector

> "Sales of adaptation goods and services by UK companies have grown in recent years, and at a faster rate than general growth in the UK economy. UK companies provide key adaptation goods and services such as flood protection and resilience measures, professional services including architecture and engineering, and finance and insurance products and services. But the sector remains small and sales by UK companies appear to have grown more slowly than those of competitors in other countries."
> **Committee on Climate Change: Adaptation Sub-Committee Progress Report, 2014**

A resilient sector

4.1. The need to address climate change risks is creating new economic opportunities. There is a growing demand for new goods, services and infrastructure that facilitate and support climate change adaptation. Not only does this bring dynamism and diversity to London's economy but it also provides services which businesses in London may be able to exploit to increase their own resilience.

4.2. The Committee on Climate Change recently carried out an assessment of the size of the adaptation sector in the UK.[50] As shown in Figure 4, this identified sales of adaptation goods and services in a number of sub-sectors, and provided an assessment of the potential for future exports

The UK adaptation sector, in 2011/12, had a sales potential of over £2 billion

Sector	Adaptation sales, 2011/12	Assessment of export growth potential
Architectural	£270 million	High
Climate change management	£80 million	Medium-High
Construction and retrofit	£660 million	Medium
Environmental finance	£220 million	High
Finance investment and insurance	£190 million	High
Risk management and business continuity	£100 million	High
Sustainable drainage and water management	£120 million	Medium
Transport infrastructure	£490 million	Low
Water irrigation	£10 million	Medium-High

Source: Adapted from Committee on Climate Change: Adaptation Sub-Committee Progress Report, 2014 growth in each.

4.3. One of the findings of the Committee on Climate Change's assessment was that although this sector had grown in the UK – both absolutely and relative to the rest of the economy – other countries had seen faster growth than the UK. Japan, France, Russia, the United States, Italy, Brazil and Germany were all highlighted as countries with stronger adaptation sector growth than the UK between 2009/10 and 2011/12.[51]

Flood protection at the Olympic Park: The adaptation sector is providing opportunities for London businesses to sell goods, services and expertise to address climate risks. *Image: Paul Hudson*

4.4. In London, the turnover of the climate change adaptation sector has been estimated at £431 million, and to employ around 4,000 people (2011/12 figures).[52] The Greater London Authority and London Climate Change Partnership are currently undertaking a project to assess the latest value of the sector in London, and to identify any interventions required to help boost it.[53]

4.5. And the Mayor is working to enhance London's Green Business advantage by promoting the development of a new hub for green-tech entrepreneurship as part of the Old Oak Common redevelopment, which is expected to bring up to 55000 jobs to London's economy, many in the green tech sector.

4.6. The London Sustainable Development Commission have commissioned a plan, to be delivered by Autumn 2015, which will outline how to attract hundreds of start-up, and larger, green businesses to the Old Oak

Common area. It is intended that such businesses would be linked with the research expertise of nearby Imperial College. Ultimately, it is hoped the hub will attract the highest concentration of eco-business outside of California.

4.7. London has particular strengths which can be exploited globally. Daniel Dowling of PwC focused on design and engineering and consultancy services:

> London can help to seize the opportunities of managing climate change by leveraging its internationally recognised skill base in design and engineering services. Our water sector, along with energy generation and transmission companies, and technology developers, have already made good progress on adaptation. So, together with our wider advisory and professional services capabilities, we can help other cities or countries build their resilience too. [54]

4.8. Meanwhile, Simon Howard of UKSIF focused on financial services, and suggested the Mayor could support this work:

> We are the second-largest responsible and sustainable finance market in the world after the United States. We are Europe's largest. We have strengths in it. We should be looking to export them. I do think the Mayor has a role to play in this because kick-starting is needed and pump-priming is needed.[55]

4.9. Mayoral interventions such as the Low Carbon Entrepreneurs' competition and the Old Oak Common Green Tech Hub are undoubtedly helping to develop London as a leading green city. However there is space for further investment in, and promotion of, the adaptation sector to enable London to see the full benefits of a diverse and resilient green economy.

Recommendation 7:
The Mayor, along with London and Partners, should promote further London's expertise and assets in the low carbon and adaptation economies:

They should seek opportunities to export London's adaptation skills to cities worldwide, helping to drive demand for further skills development and investment in training institutions in London.

They should also seek to attract further overseas investment in London's adaptation technologies and services to boost London's Green economy. For example, by supporting events like Copenhagen's Climate Change Adaptation Expo, which has set the bar for innovation in this area.

5. Towards ‘Paris 2015’

> “…cities are amongst the major contributes to climate change, [and so] it is our duty to find viable paths for our future.”
>
> **In response to the challenge of global climate change, a European commitment and local solutions, March 2015**

5.1. In the run up to perhaps the most anticipated Climate Change Conference in recent memory, the UN Framework Convention on Climate Change conference in Paris in late 2015, there remains considerable uncertainty about the future extent of global warming and the effects of a changing climate. And there will be significant variation in impact across and within regions. Despite these challenges, it is critical that London and its businesses develop a far-sighted, risk-based, adaptation plan to safeguard our future economy.

5.2. Considering plans being developed at a city-wide or regional level, the Committee has heard about the benefits of a ‘pathways approach’ to adaptation, which emphasises flexibility. A submission from Ashley Kingsborough and Professor Jim Hall of the Environmental Change Institute at the University of Oxford explained:

> ‘Adaptation pathways’ approaches seek to maximise flexibility and minimise sensitivity to climate change scenarios by delaying decisions until critical thresholds are achieved. Such approaches are increasingly relevant to adaptation planning in London. They are utilised in the Thames Estuary and being developed in response to heatwaves, droughts and surface water flooding. Critical components of assumption based planning are the identification of adaptation thresholds or levels or tolerable risk and the incorporation of ongoing monitoring to inform the prioritisation of future actions. The emphasis upon reacting flexibly to change as it materialises reduces the reliance on assumptions about future scenarios…[56]

5.3. And Juliette Daniels of the London Climate Change Partnership explained how this task can also be adopted at business level:

> You can fall into a bit of a trap of looking just at scenarios and thinking that you have to pick one to adapt to. Actually, if you take a context-first approach and look at your thresholds and your tolerances within your operations and your organisation, you will have a very good understanding of the types of action you can take in different scenarios without having to know what that future is going to be.[57]

5.4. Building a scenarios approach to adaptation, (incorporating both local risks of climate change for London's economy and the more remote risks transmitted via supply chains, markets and investments based in vulnerable, remote regions) would provide a flexible responsive means by which London might underpin future economic stability. This would avoid issues of under- or over-estimation of risks, and prevent locked-in adaptation plans which ultimately prove to be unfit for purpose.

5.5. Such an approach is recommended in the Mayor's Infrastructure Plan, in relation to water management, and has been used by the Environment Agency in its plan for managing tidal flood risk in the Thames Estuary.

5.6. And we have learned that a progressive, agile adaptation strategy is only one half of the picture. Development of the adaptation economy, to ensure that London is able to deliver that strategy, is equally important and will require support both from investors and political leaders.

5.7. The Committee heard from both the National Association of Pension Funds and The Investment Association which reported that investors are looking for clearer signals from policy makers that there is a firm international, national and regional political commitment to act on climate change.

5.8. Investment of significant funds in the green economy, including the adaptation sector, will be dependent upon the level of certainty around future investment risk and opportunities, and the resulting demand for investment opportunities, such commitment will bring. This will require clear political leadership for a city-driven approach to both mitigating, and responding to the risks posed by future climate change:

5.9. The Committee welcomes the commitment made by the Mayor at a meeting of European mayors in Paris, in March, "to strengthen the instruments that will lead us toward the energy and environmental transition," and to "coordinate public procurement to bring about the emergence of a more ecological offer," concentrating investment expenditures on the "green" sectors of the economy.[58] Furthermore his statement of support for environmental policies which stimulate London's low carbon goods and services economy shows clear leadership in the climate change arena.

5.10. As Paris approaches it is critical that the Mayor continues to be active in promoting these commitments, and that he broadens the scope of his environmental policies to ensure adaptation is an integral element. This will ensure London continues to establish itself clearly as a world leader in the race to combat climate change.

Recommendation 8:
The Mayor, upon review of his strategies**,** should integrate climate change adaptation into his Economic Development Strategy. This should commit him not only to drive forwards the conversion to a low carbon economy, as reflected in his current priorities, but instead to a resilient low carbon economy:

It should include commitments to develop and promote London's adaptation skills base; to encourage adaptation innovation; and to attract and incentivise public and private investment in the adaptation sector.

The strategy should take a risk based, scenarios approach to climate change adaptation. It should also inform economic elements of the Mayor's Climate Change Adaptation Strategy.

The **LEP** should reflect this amended economic priority in any future revision of their own growth plan.

Appendix 1 Recommendations

Recommendation 1:
When next revising the Climate Change Adaptation Strategy, **the Mayor** should include a chapter on the indirect risks of climate change for London's economy. This should consider the risks of a cascade of impacts, via supply chains, markets and investments based in vulnerable, remote regions. Particular attention should be paid to the security of those supply chains which underpin the functioning of London's economy and society. For example agriculture.

The London Climate Change Partnership, in support of this, and in line with its objective to map the interdependencies and critical pathways of London's supply chains, should work with sectoral trade associations and GLA economics, to clearly map the major vulnerabilities of London's economy. Additionally, those sectors which are found to be most vulnerable, particularly SMEs within those sectors, should be assisted to build the skills required to undertake their own supply chains mapping.

Recommendation 2:
The Mayor should commit to the principle of a transition away from investment in certain fossil fuels, namely coal, and towards reinvestment in responsible funds which deliver appropriate returns to the taxpayer.

Where possible, and in line with his priority to diversify London's economy, **the Mayor** should actively seek to build opportunities for investment in the green economy. For example by encouragement of public private partnerships to finance sustainable infrastructure projects under the London Infrastructure Plan 2050.

The London Pensions Fund Authority should draw up a plan for discussion of these two commitments at its board, looking at the options for managed divestment and responsible reinvestment of its funds from, at least, those companies for which a significant proportion of their business consists of fossil fuels.

Recommendation 3:
The London Enterprise Panel, as a part of its ongoing skills audit, should evaluate the size and nature of the skills gap for the adaptation sector and put forward a proposal for how it might proactively encourage and support skills development in this area, particularly for SMEs.

Recommendation 4:
To encourage greater sharing of best practice, and so enable monitoring of adaptation implementation**, the Mayor** should launch an award for climate change adaptation to reward successful adaptation initiatives by London businesses. The Australian Climate Adaptation Champions Awards are a successful model of such a scheme.

Recommendation 5:
The London Climate Change Partnership should develop a London monitoring and evaluation programme for business adaptation to climate change, using the national set of indicators developed by the Adaptation Sub Committee of the Committee on Climate Change, as a basis**. The Environment Agency** should contribute to its development.

Recommendation 6:
The London Climate Change Partnership should discuss with the British Banking Association and the Association of British Insurers the risk management benefits for their members, in paying closer attention to the resilience of the companies to which they loan funds / provide insurance.

Their members could encourage those companies to provide comprehensive Business Continuity plans demonstrating their climate change resilience, as a condition of those deals. They could also provide assistance, particularly to SMEs, to help them meet the conditions set.

Recommendation 7:
The Mayor, along with London & Partners, should promote further London's expertise and assets in the low carbon and adaptation economies:

They should seek opportunities to export London's adaptation skills to cities worldwide, helping to drive demand for further skills development and investment in training institutions in London.

They should also seek to attract further overseas investment in London's adaptation technologies and services to boost London's Green economy. For example, by supporting events like Copenhagen's Climate Change Adaptation Expo, which has set the bar for innovation in this area.

Recommendation 8:
The Mayor, upon review of his strategies**,** should integrate climate change adaptation into his Economic Development Strategy. This should commit him not only to drive forwards the conversion to a low carbon economy, as reflected in his current priorities, but instead to a <u>resilient</u> low carbon economy:

It should include commitments to develop and promote London's adaptation skills base; to encourage adaptation innovation; and to attract and incentivise public and private investment in the adaptation sector.

The strategy should take a risk based, scenarios approach to climate change adaptation. It should also inform economic elements of the Mayor's Climate Change Adaptation Strategy.

The **LEP** should reflect this amended economic priority in any future revision of their own growth plan.

Appendix 2 Contributors to the Investigation

In order to assess the climate change challenge for London's economy, the Committee took a number of steps.

We held two public hearings with contributions from a range of experts and stakeholders.

24 June 2014:

- Nick Beecroft, Lloyd's of London
- Daniel Dowling, PwC
- Professor Samuel Fankhauser, Grantham Research Institute on Climate Change and the Environment, London School of Economics and Political Science (LSE)
- Professor Christopher Rapley CBE, London Climate Change Partnership
- Juliette Daniels, London Climate Change Partnership

23 October 2014:

- Dr Outi Korkeala, Ricardo-AEA
- Simon Howard, UK Sustainable Investment and Finance Association (UKSIF)
- Mark Jenkinson, Siemens
- Tom Burke, E3G

We also received submissions directly from a range of individuals and organisations:

- Boris Johnson, Mayor of London
- British Property Federation
- City of London Corporation
- Cross River Partnership
- Environment Agency
- Kent County Council
- Ashley Kingsborough and Professor Jim Hall, Environmental Change Institute, University of Oxford
- Marks and Spencer
- National Centre for Atmospheric Science

- Dr Swenja Surminksi, Grantham Research Institute on Climate Change and the Environment, London School of Economics and Political Science (LSE)
- Team London Bridge
- Technology Strategy Board
- Federation of Small Businesses
- The Investment Association
- London Councils
- NAPF
- London & Partners
- London Climate Change Partnership
- Bank of England, Prudential Regulation Authority

And we reviewed the evidence published by governments, businesses, research institutes, campaigners and others.

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Hindi

यदि आपको इस दस्तावेज का सारांश अपनी भाषा में चाहिए तो उपर दिये हुए नंबर पर फोन करें या उपर दिये गये डाक पते या ई मेल पते पर हम से संपर्क करें।

Vietnamese

Nếu ông (bà) muốn nội dung văn bản này được dịch sang tiếng Việt, xin vui lòng liên hệ với chúng tôi bằng điện thoại, thư hoặc thư điện tử theo địa chỉ ở trên.

Bengali

আপনি যদি এই দলিলের একটা সারাংশ নিজের ভাষায় পেতে চান, তাহলে দয়া করে ফো করবেন অথবা উল্লেখিত ডাক ঠিকানায় বা ই-মেইল ঠিকানায় আমাদের সাথে যোগাযোগ করবেন।

Greek

Εάν επιθυμείτε περίληψη αυτού του κειμένου στην γλώσσα σας, παρακαλώ καλέστε τον αριθμό ή επικοινωνήστε μαζί μας στην ανωτέρω ταχυδρομική ή την ηλεκτρονική διεύθυνση.

Urdu

اگر آپ کو اس دستاویز کا خلاصہ اپنی زبان میں
درکار ہو تو، براہ کرم نمبر پر فون کریں
یا مذکورہ بالا ڈاک کے پتے یا ای میل
پتے پر ہم سے رابطہ کریں۔

Turkish

Bu belgenin kendi dilinize çevrilmiş bir özetini okumak isterseniz, lütfen yukarıdaki telefon numarasını arayın, veya posta ya da e-posta adresi aracılığıyla bizimle temasa geçin.

Arabic

الحصول على ملخص لهذا المستند بلغتك،
فرجاء الاتصال برقم الهاتف أو الاتصال على
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Gujarati

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