

16 August 2017

Ms Christine Mc Donald
Secretary
Environment and Communications References Committee PO Box 6100
Parliament House
Canberra ACT 2600
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Dear Ms McDonald

Senate Enquiry on "Current and future impacts of climate change on housing, buildings and infrastructure"

1. Introduction

We live in uncertain times. Increasing volatility in economic, political and weather and climate realms and the rise of the virtual world through social media add complexity and uncertainty in many if not all aspects of our lives. For example, the impacts of climate change and political uncertainty are already being observed. As governments increasingly seek to reduce costs through transferring risks to communities and individuals, there is a need to support the Australian community to increase their resilience and minimise the impact of living in an uncertain world.

Green Cross Australia is an independent, non-politically linked member association focusing on grassroots change to empower community resilience to an uncertain future, particularly from the cascading impacts of climate change to Australian communities. Information about Green Cross Australia can be obtained from <https://www.greencrossaustralia.org/>. We are not an advocacy group – rather we empower the community to take practical actions to increase their resilience and minimise the impact of living in an uncertain world.

Green Cross Australia is pleased to make a submission to this important enquiry, and is very happy to meet with the Committee to discuss this further. In our submission, we focus on areas where we have worked with different organisations to consider impacts from climate change and how best to respond to them. Green Cross Australia is not an organisation that focusses on impacts, but rather one that is focused on supporting Australians and others to prepare for climate change and to reduce the effects of impacts.

There is now a plethora of knowledge and information on how climate change is already impacting the Australian built environment. We do not need more academic studies that highlight how rising sea levels, increased rainfall, cyclone intensity and heatwaves will stress the built environment and urban communities. By contrast, we do need mechanisms that facilitate increasing the resilience of the built environment and urban communities. Green Cross Australia is at the forefront of some of these initiatives. However these community-based effective mechanisms, described below, are presently not well supported by Governments.

2. Green Cross Australia Activities

Witness King Tides – Community Participation Programs

Sea-level and storm surge have and will continue to have major impacts on coastal communities and coastal environments. The Witness King Tide Program is aimed at raising awareness in communities, business and industry to understand the risks of sea-level rise, and to begin to consider how to manage them. King tides are a natural phenomenon that occurs twice a year because of the combined influence of several astronomical factors related to the sun and the moon and the gravitational attraction they each have on the water surface of the Earth. King tides are the highest

tides of the year and offer an opportunity for the public to understand what sea level rise projections might mean for their local community.

When king tides hit, we ask coastal communities around Australia to head out and snap pictures of local landmarks during the very high tide. These photos capture what our coastal communities may look like in the future, as global sea levels rise. Together, these images build a picture of the threat posed by sea level rise across Australia and help track the future impact of climate change. This Citizen Science program has been very successful with over 6,000 photos shared on an interactive map <http://photos.witnesskingtides.org/>. Further information on the Witness King Tide Program can be obtained from <http://witnesskingtides.org/>

Facilitating Discussions and Engagement

Green Cross Australia has run a series of hypotheticals where we have engaged with business, industry and communities to consider the implications of storm surge in important areas around Australia and how we might respond to them. This has been critical in helping stakeholders to understand likely climate impacts, and to understand the complexity and challenges associated with addressing them.

For example, to demonstrate how a storm surge might affect a coastal city like Townsville, CSIRO researchers worked with Green Cross Australia and Townsville City Council to create a model that shows how quickly water can move and how soon it reaches low lying homes and businesses. See <https://www.greencrossaustralia.org/our-work/disaster-and-community-resilience/townsville-storm-surge-simulation.aspx>

Business Adaptation Network – a community of resilience practice

Green Cross Australia coordinates a group called the Business Adaptation Network. With members across the business sector, Green Cross Australia is ready to work with government as much as possible to support private sector engagement in adaptation, but this requires leadership and commitment at a national scale. The Green Cross Australia Board has spent time considering the adequacy of the response to climate change impacts and is concerned that the response is not adequate given the enormity of losses projected, setting up Australia for significant failure in the long term.

The Business Adaptation Network (BAN) is a place where best adaptation practice can be shared to mainstream responses and lift our nation's resilience to the impacts of climate change. Working with Green Cross Australia, BAN is a group of diverse, yet like-minded organisation's united in their forward thinking when it comes to climate adaptation. It's all about practical, informed action. Climate change presents opportunities as well as challenges. Foresight is crucial.

Business Adaptation Network activities over past three years has included:

- Convening a series of workshops to discuss climate bonds to fund social and infrastructure projects that help the community and business to adapt to climate change. Exploring climate financing solutions alongside major banks and insurance firms as well as other network members.
- Hosting tours, such as of Sydney's largest new development which incorporates advanced flood and heatwave mitigation and urban forest elements.
- Facilitated event on resilience bonds held at KPMG offices with around 30 people attending with a panel made up of KPMG, Stockland and Westpac exploring lessons learnt from green bonds and how this could be applied to resilience initiatives.
- Conducted tour of Barangaroo with BAN member Lend Lease showcasing the Barangaroo Climate Change Adaptation and Resilience Plan and focused on key site design elements

that incorporated adaptive design. Over 30 members attended.

- Supported the National Climate Change Adaptation Research Facility and its much awaited coastal climate adaptation tool, “CoastAdapt”. Green Cross Australia partnered with Griffith University to support development of business adaptation case studies that offer guidance about best practice adaptation. Several Business Adaptation Network members collaborated with the research team to ensure their climate resilience investments were profiled effectively to support scale-up of similar projects across Australia. The CoastAdapt tool is the Australian Government’s principle response to supporting adaptation across our coasts where the risks of sea level rise and storm surge are intensifying. Green Cross Australia is a proud contributor to the initiative.
- Worked with ANZ Bank to support the ‘Your Resilience Questions Answered: Resilience and Investment Workshop’. Around 50 Business Adaptation Network and Investor Group on Climate Change, representatives of local councils, and other Sydney stakeholders gathered to explore funding models that support investment in climate resilience. The workshop explored what adaptation funding needs in metropolitan Sydney, options for funding projects, and what gaps exist in bond standards.
- Green Cross Australia collaborated with the Investor Group on Climate Change to deliver the second IGCC adaptation finance workshop held in Australia in September 2016. The ‘Climate adaptation finance: Path to Market’ workshop was hosted in Melbourne by Australia Post and involved 60 stakeholders from the finance, local government, property and infrastructure sectors. The aim of this workshop was to create a path to market for catalytic climate adaptation projects, aligned to policy across all levels of government, and heighten investor and asset owner/manager focus on adaptation finance options. The workshop explored: government planning structures and responsibilities and the role of private sector adaptation finance; the role of the insurance industry in catalysing adaptation; climate-proofing new and existing infrastructure and property investments; exploring new adaptation investment opportunities and the need for innovative finance structures.
- Legal Liability, Disclosure and Fiduciary Duty Event - At this Green Cross Australia Business Adaptation Network event, three industry experts presented a clear message that asset owners need to begin taking responsibility for adaptation. Asset managers need to understand how a changing climate will affect the viability of their assets and business profitability. They need to disclose this information to stakeholders and show how they are managing these risks to avoid future liability.
 - Emma Herd, CEO of the Investor Group on Climate Change, recommended that when asset owners are considering investments, they should look through an ‘adaptation lens’. She suggests using a ‘two degrees stress test’ to assess how your investments and organisation will continue to operate and profit when the temperature rises by 2 degrees. In this way she says, risks can be identified early and be properly managed.
 - Sarah Barker, Special Counsel at Minter Ellison, said, “Avoiding or being skeptical about climate change is no longer an excuse for inaction.” Executives have a fiduciary duty to ensure these risks are managed. Ms Barker suggested that management and executives follow the four E’s:
 - Educate - understand the issues around climate change.
 - Enquire - what does it mean to the organisation and management.
 - Examine - examine the reports.
 - Evaluate - critically evaluate the reports and take required action.
 - Mark Baker-Jones, Partner at Dibbs Barker, added that asset owners should consider liability risk. He clarified stating, “If you fail your fiduciary duties by not disclosing your risks, then you expose your organisation, and yourself personally, to compensation due to a third party loss or suffering”.

Climate Adaptation Funding – an investment opportunity to be leveraged

Climate adaptation finance is an emerging investment area within the growing climate finance market, but is not yet mainstreamed in the Australian investment market. Estimates of global investment for adaptation range between US\$20-25 billion a year (IGCC 2016), leaving a US\$60-100 billion per annum investment gap. Adaptation investment in Australia is as yet slow and unquantifiable, due to its undefined nature.

Investment in solution (adaptation) research is however severely lacking, and practitioners are not getting the information they desperately need to respond. For example, funding to the two leading groups in adaptation research (NCCARF and the CSIRO adaptation team), have been reduced to levels unlikely to be able to provide meaningful outcomes without additional adequate / commensurate funding.

Likewise, support funding for community organisations, such as Green Cross Australia on climate adaptation programs is difficult to access. Green Cross Australia has previously received funding through the Natural Disaster Resilience Programs in Queensland but establishing a national initiative is constrained by Grant programs only accessible at a State level. The National Emergency Management Program has limited capacity to fund a nationally led initiative on climate adaptation. It is impossible to maintain a national adaptation effort without funding.

Community Preparedness Initiatives and Resilience Guidelines

In 2012 Green Cross worked with (then) Manidis Roberts, Stockland and Lend Lease to develop the guidelines underpinning the Community Resilience points under GBCA's Green Star Communities. These Guidelines are still being used today to inform the Climate Change Adaptation and Resilience credit in regards to Community Resilience Plans for Developers, more detail here: <https://www.greencrossaustralia.org/media/9921293/community%20resilience%20guideline%20v7.pdf>

In 2013, Green Cross Australia made a submission to the Senate Standing Committee on Environment & Communications - Inquiry into Recent Trends in and Preparedness for Extreme Weather Events. This submission outlined a range of recommendations and insight on platforms supporting preparedness and resilience actions. These included:

[Harden Up – Protecting Queensland](#): Disaster preparedness portal offering Queensland residents a localised severe weather history as well as projected trends for climate change, along with tools to develop “Personal Resilience Plans” to protect homes, families and communities.

[Build it Back Green](#) – Bushfires: provides tools and case studies encouraging bushfire affected Victorians to rebuild stronger, more hazard resilient and sustainable homes and communities.

Recognising the uninsurable

In 2009, the Department of Climate Change estimated that up to \$63 billion (2008 replacement value) of existing residential buildings are potentially at risk of inundation from a 1.1 m sea-level rise in Australia, representing between 157 000 and 247 600 individual buildings. In 2017, these costs estimates would have significantly increased in size of potential losses.

Green Cross Australia does not advocate a view in relation to whether or how current insurance models might evolve to address affordability for that portion of our community which is highly exposed to flood, storm surge, severe winds or bushfire.

It is therefore clear that it will become increasingly expensive to maintain properties and infrastructure (public and private) in such areas. To the extent that information about exposure to recurring

significant hazards exists, it should be made available to all market players including ordinary property-owning Australians.

We also observe that there are some areas in Australia where we need to plan for managing significant loss and possible longer-term dislocation or significant investments in mitigation given their size and exposure. It is well known that coastal properties are exposed to 'Actions of the Sea' policy exclusions and related damage such as erosion, and there is very little cover available.

Interdependencies and Compounding Risks

Interdependencies of built environment and infrastructure as well as compounding risk (multi-hazard) impact issues are not factored in by risk assessments nor contemplated by current Australian Standards. These anomalies will only exacerbate the impacts on housing, buildings and infrastructure.

We recommend that the Commonwealth establish processes to support communities to understand and manage the implications of interdependencies and multiple hazard risk.

Heatwaves

Heat stress is already Australia's no.1 natural hazard killer. Our housing, buildings and infrastructure need to respond to the likelihood on increased extent of heatwaves.

There are no heat stress building code standards nor is there a national climate health policy. Weather files for energy modelling is based on 1980 weather files to estimate projected energy usage for buildings to last 30 to 50 years underestimating consumption by 20%, according to industry air-conditioning association (AIRAH) sources.

We recommend that a heat stress building code standard is developed to drive change in this area, and that available disparate knowledge about effective responses to heat is integrated and combined with guidance material to support users.

3. What we Feel the Inquiry Needs to Consider

In summary, it is now well-recognized that that despite a large number of adaptation plans and planning guidelines being written by governments, the private sector and communities, there is a lack of on-the-ground adaptation occurring. This is a result of a number of well-known barriers to adaptation that include the political risk of undertaking adaptation actions, difficulties in securing adaptation funding, and perverse incentives in the property development sector. From the section above it is clear that Green Cross Australia has been developing community programs to highlight and help to address these issues. However, there is a clear role for the Australian Government to assist in removing some of these barriers and we would be happy to discuss these with the Committee.

Yours sincerely,

Dr Mark Gibbs
Chair of the Board, Non-Executive Director
Green Cross Australia
16th August 2017