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**DFAT SUBMISSION:  
FOREIGN AFFAIRS, DEFENCE AND TRADE REFERENCES COMMITTEE INQUIRY:  
IMPLICATIONS OF CLIMATE CHANGE FOR AUSTRALIA'S NATIONAL SECURITY**

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## Executive Summary

Climate change is a complex and deepening challenge, which poses a range of risks globally. Evident in changing environmental conditions, rising sea-levels, and increasing extreme weather and natural disasters, the risks cut across Australia's economic, environmental and security interests.

This submission addresses the implications of climate change for Australian national and international security. Successive Australian governments have recognised these threats and risks. Australia's national security agencies have well-defined responsibilities and capacities to respond.

Australia is committed to collective international action to address climate change, including as a Party to the 2015 Paris Agreement under which Australia will reduce greenhouse gas emissions by 26 to 28 percent below 2005 levels by 2030. These reductions are being achieved through a suite of measures including the Emissions Reduction Fund, Renewable Energy Target, the National Energy Productivity Plan and the work of the Clean Energy Finance Corporation and Australian Renewable Energy Agency. Australia is building resilience domestically.

Australia's recognition of climate change risks is evident in the Government's 2016 Defence White Paper, and in national strategies and whole-of-government response mechanisms to climate-change related disasters.

Climate change is a 'threat multiplier', intersecting with other threat multipliers and exacerbating existing threats to human security, including economic, environmental, water, energy, food and health challenges, that diminish resilience and compound challenges. In some cases, climate change creates new risks. The severity of risks will be influenced by the rate of climate change, and the effectiveness of mitigation, adaptation, resilience building and disaster risk management.

Risks include those relating to flooding, drought and higher temperatures, severe extreme weather events, sea-level rise, ocean acidification and temperature changes. These risks are posed at both national and international levels, and potentially lead to a greater need for humanitarian support and disaster risk reduction; resource competition; state fragility; mass migration; health challenges; and impacts on economic prosperity. Multifaceted and integrated policy responses are required.

Climate change impacts have particular salience for Australia. The Indo-Pacific region is projected to experience challenges such as prolonged droughts, increased flooding, and coastal inundations from sea-level rise. Coupled with existing development and human security challenges, climate change will have a disproportionately negative effect on vulnerable communities.

DFAT works as part of a whole-of-government effort to address and manage the risks to security from climate change. Of particular importance is the Department's leadership on strengthening international cooperation and action against climate change, including participation in forums and agreements such as the United Nations Framework Convention on Climate Change, the 2015 Paris

Agreement, the Platform on Disaster Displacement and the Sendai Framework for Disaster Risk Reduction 2015-2030.

Mitigation of greenhouse gas emissions is fundamental. DFAT leads Australia's negotiations on implementation of the Paris Agreement as the international community's core vehicle for addressing climate change, and supports other international climate change mitigation arrangements, such as the International Civil Aviation Organization, Montreal Protocol and new efforts by the International Maritime Organization.

DFAT is active in a range of regional forums, such as the East Asia Summit and Pacific Islands Forum. Globally, DFAT engages in the G20 and its strong sustainable development, climate and energy action agenda. Through our network of bilateral relationships, we are strengthening political and practical cooperation to mitigate climate change risks.

Australia is known as a leading provider of international humanitarian and disaster response, particularly in our region. DFAT leads the Australian effort, working closely with the Australian Defence Force and other Australian Government departments, as required. The effects of climate change will increase the demand for these responses.

DFAT's Humanitarian Strategy 2016 sets out a multi-layered strategy to reduce and address the impact of crises, and highlights the importance of climate action and disaster risk reduction to reduce disaster vulnerability. DFAT's humanitarian response management is supported by extensive and tested protocols, mechanisms and partnerships developed domestically, regionally and globally. The Australian Defence Force has increasingly become involved in humanitarian response, for example during Australia's response to Tropical Cyclone Winston in 2016. The Government increased the humanitarian aid budget by 18 per cent in 2017-18 to support neighbouring countries' preparations and response capacities.

DFAT is integrating climate action and disaster resilience across the entire Australian Aid Program, as well as implementing the Prime Minister's commitment to invest AUD 1 billion over five years in climate resilience and emission reduction measures in developing countries, with a focus on the Indo-Pacific. DFAT works bilaterally, regionally and with multilateral banks and funds. DFAT's longstanding partnerships with Australian and international non-government organisations (NGOs) are key.

Because climate change multiplies threats across a wide spectrum, DFAT investments span governance, economic and social policy, agriculture, water, forestry and infrastructure. Activities to support mitigation include bilateral and regional investments in renewable energy, for example the Tina River Hydropower Project in the Solomon Islands, and work in Indonesia to prevent smoke haze and emissions in the forestry and land use sectors. Climate adaptation and resilience building are central to our investments. They span from climate-smart infrastructure projects and climate forecasting capacity building in the Pacific, to agricultural livelihoods and, in Asia, a particular focus on water management in view of the potential future social, political and

economic impacts of water scarcity. Other examples include enhancing oceans governance in the Pacific and the Integrated Coastal Management Program in Vietnam.

DFAT recognises that developing countries can experience challenges in attracting and gaining access to private finance for climate action, particularly in the Pacific. Therefore, we are increasing efforts under the Aid Program to identify opportunities, including supporting programs to help business to mobilise financing for clean energy projects in developing economies, and encouraging a focus on private finance as co-chair of the Green Climate Fund.

**a. the threats and long-term risks posed by climate change to national security and international security, including those canvassed in [the National security implications of climate-related risks and a changing climate report by the United States Department of Defense](#)**

Climate change is a complex and deepening challenge, which poses a range of risks globally. Evident in changing environmental conditions, rising sea-levels, and increasing extreme weather and natural disasters, the risks cut across Australia's economic, environmental and security interests. Successive Australian governments have recognised the threats and risks<sup>1</sup> posed by climate change to national<sup>2</sup> and international security.

These include the range of risks identified in the report by the US Department of Defense *National Security Implications of Climate-Related Risks and a Changing Climate* that relate to: persistently recurring conditions such as flooding, drought and higher temperatures; more frequent and/or more severe extreme weather events; sea-level rise, ocean acidification and temperature changes; and decreases in Arctic ice cover, type and thickness.

In part, these risks have underpinned Australia's commitments to collective international action to address climate change, from the 1992 *United Nations Framework Convention on Climate Change* (UNFCCC), through the *Cancun Agreements* and in the 2015 *Paris Agreement*, which is aimed at both mitigation and adaptation actions. Australia's domestic actions under these agreements include a strong focus on building Australia's resilience against a range of climate-related risks, for example as described in the *National Climate Resilience and Adaptation Strategy 2015*.

Recognition of climate change risks is evident in the Government's *2016 Defence White Paper*, which outlines the security implications of climate change and likelihood of associated defence operations in the future.

Such recognition is also evident in our national strategies and whole-of-government response mechanisms to climate change -related disasters.

Similarly, it informs Australia's participation in a range of international and regional forums. Australia is an active participant in the *Platform on Disaster Displacement* and the *Sendai Framework for Disaster Risk Reduction 2015-2030*.

Australia highlighted the potential impacts of climate change on security in statements to the UN Security Council *Arria Formula meetings* in 2013 and 2015.

This recognition also informs Australia's development aid priorities, including our commitment to the *2030 Agenda for Sustainable Development*, in particular *Sustainable Development Goal-SDG-*

<sup>1</sup> Although often differentiated, threats and risks are referred to interchangeably within the Inquiry Terms of Reference and hence DFAT's Submission.

<sup>2</sup> Consistent with the Department of Environment and Energy's Submission, this Submission recognises Australia's national security includes state and human security and is inherently linked to the security of the environment, health, water, energy, food and economic systems at the local, national, regional and global -levels.

*13: Take urgent action to combat climate change and its impacts*, which endorses the Paris Agreement as the principal instrument to galvanize international action.

Recognition of the security risks centres on the potential of the adverse effects of climate change to exacerbate existing threats to human security, including economic, environmental, water, energy, food and health challenges. Climate change is, therefore, a 'threat multiplier', intersecting with other threat-multipliers and existing security threats to diminish resilience and compound challenges. This is particularly the case where it compounds risks to economic prosperity and political stability and exacerbates causes of displacement of people and conflict. In some cases climate change creates its own direct threats.

The degree of threats and long-term risks posed by climate change are uncertain because they will be influenced by the rate of climate change itself and the effectiveness of mitigation, adaptation and resilience-building, along with disaster risk management efforts. As climate change is a threat without borders, international cooperation is essential to Australia's response.

On the basis of current science and evident impacts of climate change, there are a range of increasingly recognised associated security risks and threats.

At the national level, these include a range of – some longer-term – contingencies such as:

- Possible negative impacts on Australian Defence Force (ADF) bases, operations, capability and personnel. For example, rising seas may affect naval basing, and hotter temperatures complicate warfighting.
- Potential large-scale migrations compounding current threats.
- Potential climate-induced resource competition resulting in encroachment on Australia's maritime resources, notably through illegal fishing.
- Potential impacts on Australia's maritime interests as a result of changes to maritime boundaries associated with sea-level rise.
- Threats to critical infrastructure from sea-level rise and increasing frequency and severity of some kinds of weather events (e.g. storm surge, heatwaves).
- Associated disruptive risks related to transition of the energy sector to lower emissions technologies.
- Impacts on Australia's economy, itself partly dependent on strong international trade and investment flows. Climate-related costs have the potential to be a disruptive economic force, albeit accompanied by opportunities presented by global transition to a lower emissions, more climate-resilient economy.

At the international level, engaging Australia's interests are a range of concerns, particularly:

- More severe natural hazards and environmental stress and associated humanitarian disasters requiring more frequent and extensive DFAT-led Australian responses to

international crises, potentially extending to stabilisation and community rebuilding efforts.

- Potential climate-induced resource competition that increase tensions within and between (particularly fragile) states, where international intervention may be required in the form of stabilisation, peacekeeping or post-conflict operations. The US Department of Defense Report highlights large population movements as a result of long-term drought as a contributing factor to the conflict in Syria.
- Climate-related adverse impacts add to challenges for governments of fragile states, raising the risk of state failure and associated familiar threats of conflict, transnational crime and terrorism.
- Mass migration and increased refugee movements, which may be related to extreme weather events (including flooding and droughts) and/or impacted agricultural livelihoods.
- Potential health challenges, ranging from the direct consequences of heat waves, extreme weather events and temperature-enhanced urban air pollutants, to regional and global pandemics.
- Climate impacts reducing economic prosperity and the ability of States to build resilience, including related to security risks and threats. In 2016, Tropical Cyclone Winston wiped out an estimated one-third of Fiji's Gross Domestic Product (GDP) for the year.

Adverse climate impacts are projected to occur worldwide with the Indo-Pacific to experience particular challenges, such as more prolonged and extensive droughts and coastal inundations from sea-level rise. Risks from sea-level rise are more acute in some regions than others, such as among the Pacific island countries (PICs) and some areas in Asia.

Countries with less capacity to address adverse climate impacts are also likely to be more susceptible to their negative effects. This presents additional challenges for developing countries, where vulnerable communities can be disproportionately affected. A World Bank Group-commissioned report has estimated that climate change may push 100 million people back below the poverty line in coming decades<sup>3</sup>. The Indo-Pacific region contains a significant number of developing countries where the challenges of addressing climate change, including security risks, are magnified.

Because of these geographic and developmental factors, climate change impacts have particular salience for Australia, as part of the Indo-Pacific region.

Multifaceted and integrated policy responses are required to address multi-dimensional threats. It is also important that these responses remain clear on which threats are related to climate change and which are not, so as to avoid over-ascribing the impacts of climate change. Failure to do so

<sup>3</sup> Hallegatte et al., 2016, *Shock Waves: Managing the Impacts of Climate Change on Poverty*, Climate Change and Development Series, World Bank Group: xi.

can lead to inappropriate policy responses or harm the credibility of the actual climate change-related risks and threats to security.

DFAT works as part of a whole-of-government effort to address and manage the risks to security from climate change. Of particular importance is the Department's leadership on strengthening international cooperation and action against climate change. Australia, through DFAT, is also active in a range of regional forums such as the East Asia Summit, Asia-Pacific Economic Cooperation, the Pacific Islands Forum and the Indian Ocean Rim Association. Through our network of bilateral relationships, we are strengthening political and practical cooperation to manage climate change risks. This includes a number of formal bilateral climate change dialogues, for example with China, Japan and India. Globally, we are active in the G20, which has a strong sustainable development focus, including the *G20 Hamburg Climate and Energy Action Plan for Growth* that was adopted by leaders in 2017.

DFAT leads on whole-of-government international humanitarian and disaster response, which this submission elaborates in the following section.

DFAT also leads on significant support through the Australian Aid Program to build the resilience of developing countries to the adverse impacts of climate change. Because climate change is a threat multiplier across a wide spectrum of sectors, our approach spans areas as diverse as governance, economic and social policy, mitigation and adaptation, as outlined in more detail later in this submission.



**b. the role of both humanitarian and military response in addressing climate change, and the means by which these responses are implemented**

Since 2005, more than 1.5 billion people have been affected by disasters, including over 700,000 killed and 23 million left homeless<sup>2</sup>, a disproportionate number of whom were women and children<sup>4</sup>. By the end of 2016, 65.6 million individuals were forcibly displaced worldwide as a result of persecution, conflict, violence, or human rights violations<sup>5</sup>. Over the past decade, the number of people across the globe in need of humanitarian assistance has doubled<sup>6</sup>. Humanitarian crises undermine growth, reverse hard-won development gains, increase poverty and can result in instability which can last for decades.

The challenges themselves are not new and Australia has a history of responding to humanitarian crises at home, in our region and beyond. Nonetheless, climate change effects are expected to amplify the frequency and severity of events for which Australian assistance will be required. An overall increase in demand for humanitarian assistance will stretch finite resources and our ability to act.

Over decades, Australia has become known as a leading provider of international humanitarian response, particularly in our region. Australia is the responder of first call in the Pacific, as it was to Tropical Cyclone Winston in 2016 in Fiji (see case study, Box 1). In the wider Indo-Pacific, Australia also plays a prominent role, as in the 2013 Tropical Cyclone Haiyan in the Philippines. Further afield Australia provides humanitarian assistance where it is most needed. Between July 2015 and June 2016, Australia responded to over 20 crises, including in Myanmar, Syria, Iraq, Africa, Afghanistan and the Pacific, providing total emergency assistance of over AUD 231.3 million.

DFAT leads the Australian Government's approach to international humanitarian response. Some of these responses are to 'complex emergencies'<sup>7</sup>, which require military stabilisation, as well as humanitarian relief.

DFAT-led humanitarian response operations are embedded in a multi-layered strategy to strengthen resilience and provide appropriate responses to disasters.

In August 2016, DFAT released its *Humanitarian Strategy 2016*, which outlines how Australia responds to international humanitarian crises. The strategy includes both emergency and longer-term actions, and highlights the importance of climate action to reduce disaster vulnerability. It sets out four aims:

<sup>4</sup> From the World Conference of Disaster Risk Reduction in Sendai, Japan outcome document, which summarized reviews of the 2005 Hyogo Framework (adopted following the devastating Indian Ocean tsunami).

<sup>5</sup> UNHCR, 2017, *Global Trends: Forced Displacement in 2016*, <http://www.unhcr.org/globaltrends2016/>

<sup>6</sup> United Nations Secretary General, 2016, *Report of the Secretary-General: Effective coordination of humanitarian assistance efforts*, <http://www.un.org/en/sections/priorities/humanitarian-assistance/>

<sup>7</sup> The Inter-Agency Standing Committee (IASC)-the primary mechanism for inter-agency coordination of humanitarian assistance- in 1994 defined 'complex emergencies' as "a humanitarian crisis in a country, region or society where there is total or considerable breakdown of authority resulting from internal or external conflict and which requires an international response that goes beyond the mandate or capacity of any single agency and/ or the ongoing United Nations country program".

1. strengthen international humanitarian action, including reform and innovation within the broader international humanitarian system.
2. reduce disaster risk, including through building resilience in countries in our region and through commitments under the 2015 Paris Agreement.
3. support preparedness and effective responses, to both emergency and slow-onset crises.
4. enable early recovery, by supporting a transition from humanitarian relief to longer-term recovery and development.

Where international disaster responses are required, DFAT works closely with other Australian Government agencies, including the Australian Defence Force (ADF), which may contribute to Australian responses with a range of air, land and sea capabilities, as required, and with a range of other partners (e.g. NGOs and the UN). Humanitarian and disaster response is undertaken at the request of the government of the affected country or when an offer of assistance is accepted.

### **Modalities, partnerships and coordination mechanisms**

DFAT's management of an emergency humanitarian and disaster response may involve the convening of an Inter Departmental Emergency Task Force, pre-emptive action to assist with coordination and agency preparations, and activation of the DFAT Crisis Centre. The Crisis Centre is supported by DFAT staff trained and on standby, including the Crisis Cadre in Australia to staff the Crisis Centre, and the Crisis Response Team that is deployable to the affected country to assist coordination of Australian assistance on the ground.

All Australian humanitarian responses are governed by a strong set of protocols and guidelines. Emergencies require swift response. DFAT invests heavily in maintaining the highest state of preparedness through a robust suite of modalities, partnerships and coordination mechanisms. DFAT draws on domestic standby mechanisms<sup>8</sup> to support regional humanitarian relief efforts. We also fund civilian specialists to provide surge support to UN agencies responding to humanitarian crises further afield.

When international disaster responses are mobilised, partners<sup>9</sup> contracted by DFAT provide rapid logistical support and manage stockpiles of relief supplies<sup>10</sup>. We also enhance our stockpiling capacities through partnership arrangements<sup>11</sup>. Where appropriate, DFAT increases uplift capability by mobilising ADF assets (including aircraft and ships).

<sup>8</sup> These include: medical teams under Australian Medical Assistance Teams (AUSMAT) (in partnership with the National Critical Care and Trauma Response Centre); search and rescue teams under Disaster Aid Response Team (DART) (in partnership with Queensland Rural Fire Service and New South Wales Fire Service); and the Australian Civilian Corps (ACC) (with a deployable capability of approximately 350 civilian specialists).

<sup>9</sup> Currently HK Logistics (a private sector company).

<sup>10</sup> Stored in Brisbane, Sydney, Jakarta, Lae and Port Moresby.

<sup>11</sup> United Nations Humanitarian Response Depots (UNHRD) to access relief supplies from its Kuala Lumpur warehouse United Nations Population Fund (UNFPA), as well as through funding support to UNFPA<sup>11</sup> and the Australian Red Cross to pre-position supplies in our region.

Australia's humanitarian partnerships include multi-year agreements with a range of multilateral organisations<sup>12</sup>. Australia is also deepening its humanitarian partnership with Australian NGOs, including via the five-year *Australian Humanitarian Partnership* (AHP) agreement with six NGOs.

In relation to coordinating relevant humanitarian policies, Australia works through inter-agency platforms, such as the IASC<sup>13</sup> Emergency Directors Group, which Australia co-chaired in June 2016, and through individual agency donor support groups<sup>14</sup> to promote common policy positions amongst donors and UN partners. For example, Australia co-convened (with UNOCHA<sup>15</sup> and New Zealand) the World Humanitarian Summit Pacific Regional Consultations in Auckland. Typically, we seek to highlight risks, needs and vulnerabilities within the Indo-Pacific region in these dialogues. In 1992, Australia formed an arrangement with France and New Zealand (the FRANZ) to exchange information and enhance coordination of humanitarian responses in the Pacific. During the Tropical Cyclone Winston response, FRANZ coordinated our respective military assets, delivery of supplies, and agreed on a division of labour to avoid duplication of assistance and effectively support the Fiji Government's efforts.

### **Humanitarian response and climate change**

DFAT's *Humanitarian Strategy 2016* acknowledges that disasters are growing in frequency, scale and impact, and will require increased humanitarian responses. The Strategy identifies climate change as exacerbating conditions of poverty, demographic changes, urbanisation, poor planning and environmental degradation, which in combination increase vulnerability to disasters.

Mitigation, adaptation, resilience-building and disaster risk reduction (DRR) are required to reduce the need for humanitarian response to climate impacts. The Strategy identifies implementation of the 2015 *Paris Agreement* and the *2030 Agenda for Sustainable Development* as part of addressing the underlying causes of conflict, displacement and vulnerabilities.

The Government's increased humanitarian budget (18 percent in 2017-18) is to support neighbouring countries' disaster preparations and response capacities. Climate risk will be incorporated into these countries' preparedness, response and recovery planning.

### **Disaster Risk Reduction**

A significant proportion of DFAT's efforts are directed to the broader issues of DRR and building the capacity of the wider international system and countries to respond. This strategic focus recognises the crucial importance of building partner country resilience to external shocks.

<sup>12</sup> These include with the: International Red Cross, Red Crescent (ICRC); United Nations Office for the Coordination of Humanitarian Affairs (UNOCHA); United Nations High Commission for Refugees (UNHCR); The United Nations Relief and Works Agency for Palestine Refugees in the Near East (UNRWA); the World Food Programme (WFP); and the United Nations International Children's Emergency Fund (UNICEF).

<sup>13</sup> Inter-Agency Standing Committee (IASC).

<sup>14</sup> United Nations International Strategy for Disaster Reduction (UNISDR), UNOCHA, ICRC, UNHCR ExCom and WFP Executive Board.

<sup>15</sup> As noted, UNOCHA stands for the United Nations Office for the Coordination of Humanitarian Affairs.

Of events in the last decade, more devastating outcomes were avoided because of significant DRR measures implemented at the local, national and regional -levels as part of the post-Indian Ocean tsunami 2005 *Hyogo Framework*.

In response to these developments, the international community, with Australia playing a prominent role, developed the *Sendai Framework for Disaster Risk Reduction 2015-2030*. As signatory to the Framework, Australia upholds its principles, including that national governments and local authorities have responsibility for leading DRR efforts, while responsibility should be shared with other stakeholders (including community-based organisations, NGOs, international and regional organisations, the private sector, philanthropic foundations and community members).

In view of PICs' vulnerability to climate change and disasters, Australia has a new strategic focus on Pacific preparedness and will provide assistance to build the disaster risk management capability of Pacific partners (including governments, local NGOs and women's groups).

To enhance disaster preparedness and to deliver surge support, since 2013 the ACC's National Disaster Management Office (NDMO) program has provided multi-year institutional capacity support to national and local responders in the Pacific. Under the program, ACC specialists deploy each year into NDMOs to provide technical assistance in areas including disaster risk management, logistics, and information management<sup>16</sup>.

Australia will assist the region to implement the *Framework for Resilient Development in the Pacific (FRDP)* (announced at the Pacific Island Forum in September 2016) by ensuring that:

- Risk-informed development is embedded in development policy and planning processes of bilateral partner governments.
- Governments are prepared to respond and recover.
- Communities are aware of, and have the resources to plan and prepare for, natural hazards in a changing climate.

AUD 75 million of the AUD 300 million package announced by Prime Minister Turnbull at the 2016 PIF Leaders' Meeting in Pohnpei will be allocated for disaster preparedness and risk reduction activities implemented by Australian NGOs and their Pacific partners.

DFAT's upcoming *Pacific Humanitarian Strategy* takes forward Australia's commitments under the *Sendai Framework for Disaster Risk Reduction 2015-2030*, the *Paris Agreement*, the *2030 Agenda for Sustainable Development*, and the *2016 World Humanitarian Summit*, and reflects our commitment to the *FRDP*. The *Strategy* will propose a shift in the way we pursue our objectives in three key areas: localisation of humanitarian action; a greater emphasis on prevention and preparedness; and accelerating post-crisis recovery and reconstruction.

<sup>16</sup> The NDMO Program operates in Fiji, Tonga, Samoa, Vanuatu and the Republic of the Marshall Islands, and has previously included Timor-Leste. It has strengthened institutional capacity in multiple ways, including: support for the development of a National Humanitarian Policy in Fiji; formulation of a countrywide disaster risk assessment strategy in Samoa; and an evaluation and review of standard operating procedures for Vanuatu's National Emergency Operations Centre.

**Box 1: Case study – Australia's response to Tropical Cyclone Winston, Fiji**

Tropical Cyclone Winston caused widespread damage in Fiji on 20-21 February 2016 and also affected some areas of Tonga on 17 February. It is the strongest tropical cyclone ever recorded in the southern hemisphere, causing 44 deaths and affecting more than sixty per cent of the population of Fiji (about 540,000 people).

Working closely with the Fiji Government, Australia provided AUD 35 million in assistance. This included:

- an initial AUD 5 million package of immediate assistance to provide lifesaving supplies and support for people affected by the disaster;
- a further AUD 10 million to help children return to school, ensure health services reached affected communities and prioritise the protection of vulnerable people; and
- AUD 20 million to help Fiji's longer-term recovery and reconstruction efforts, including rebuilding damaged or destroyed schools and health facilities, replacing damaged medical equipment and restoring water and sanitation services. This assistance is also being used to repair and rebuild damaged markets, enabling farmers and market vendors to return to work.

Australian Government personnel were deployed to help within two days of Tropical Cyclone Winston. About 60 members of DFAT's Crisis Response Team were sent to Fiji and DFAT activated its Crisis Centre in Canberra. Two Australian Civilian Corps specialists also worked alongside experts in Fiji's National Disaster Management Office to help manage response efforts.

The 21-person Australian Medical Assistance Team (AUSMAT) was in Fiji for over three weeks, providing rural and remote medical outreach. The team provided much-needed care for more than 1,700 people in Rakiraki, Ovalau, Ba, Korovou and surrounding villages.

The Australian Defence Force (ADF) provided extensive support to Australia's humanitarian activities through Operation Fiji Assist. ADF support included:

- deploying approximately 1000 personnel to Fiji
- aerial assessments by surveillance aircraft
- seven MRH-90 helicopters to assist with response efforts and deliver humanitarian stores, and
- C-17 and C-130 flights that delivered over 520 tonnes of humanitarian supplies and equipment.

The ADF's HMAS Canberra was also deployed to Fiji loaded with engineering assets, helicopters, water purification equipment and humanitarian supplies. It was positioned off Koro Island, where ADF engineers helped to repair schools, medical centres and infrastructure.

## **Military role**

The 2016 Defence White Paper outlines the ADF's role in domestic and international humanitarian response and the potential for increased involvement due to escalating threats and risks, including those relating to climate change. The ADF has a range of multi-use air, land and sea capabilities that are able to provide scale-able support to domestic disaster relief operations and in DFAT-led whole of government humanitarian response.

As a threat-multiplier, climate change can be expected to exacerbate or increase the occurrence of complex emergencies, which typically require military stabilisation in combination with humanitarian relief. Defence can expect to be called upon with greater frequency to assist domestic and international humanitarian response, as well as potential stabilisation operations. Over the last 15 years there has been an increase in the ADF's involvement in regional humanitarian response. In 2016, the ADF played a vital role in Australia's response to Tropical Cyclone Winston (outlined in Box 1 above).

An increase in illegal foreign fishing or sea-borne migration to Australia because of climate change effects may increase demands for ADF patrols in Australia's northern waters. Defence will need to monitor climate change-related risks to human health as well as the impact of climate change on critical enablers such as infrastructure and energy. Modelling of Defence's future preparedness posture currently indicates a manageable increase in the frequency, scale and operational risk of climate related Defence commitments in the near term; however, the forecast level of commitment may create significant concurrency pressures for Defence from as early as the middle of the next decade.

In order to effectively respond to humanitarian, consular, political and security priorities, DFAT maintains a robust, effective and cooperative relationship with the ADF. To enhance civil-military cooperation, DFAT also works closely with the ADF to ensure that international guidelines are incorporated into Defence practices.

**c. the capacity and preparedness of Australia's relevant national security agencies to respond to climate change risks in our region**

Because climate change's impacts affect a broad range of national and international security considerations, Australia's national security agencies will be increasingly required to respond. The capacity and preparedness of Australia's national security agencies to do so will be contingent upon individual agency capacities, as well as the continuation of strong and cooperative inter-agency relationships.

At the highest level, Australia's **National Security Committee of Cabinet (NSC)**, chaired by the Prime Minister, is responsible for overseeing national security issues. These issues may relate to international security, such as military operations- including ADF deployments and committing Australian troops to conflicts<sup>17</sup>, border security, counter-terrorism, and the operation and activities of the Australian Intelligence Community. Accordingly, the NSC comprises Ministers with relevant portfolios<sup>18</sup>, including the Minister for Foreign Affairs.

In 2008, at the request of the NSC, Defence established the **Australian Civil-Military Centre**<sup>19</sup> to build civil, military and police capabilities to prevent, prepare for and respond to conflict and disasters overseas.

DFAT's capacity and preparedness to respond to climate change risks in our region and beyond, including with the assistance of the Department of Defence, is outlined at b) above and other sections of this submission.

DFAT works in close cooperation with other national security agencies, which themselves have established responsibilities. These responsibilities are both domestic and international, and the capacities of these agencies are drawn upon as required for effective response:

- National security policy coordination is led by the **Prime Minister**, with the support and advice of the Department of the Prime Minister and Cabinet.
- Domestic operational coordination is the responsibility of the **Attorney-General** (supported by the **NSC** and other ministers), with the support and legal guidance of the Attorney General's Department.
- Issues related to border control are managed across several national security agencies: the **Department of Immigration and Border Protection** manages the security and integrity of Australia's borders; the **Maritime Border Command** provides security for Australia's offshore maritime areas; and the **Department of Infrastructure and Regional**

<sup>17</sup> ADF-deployment is decided by the NSC through consultation with the Chief of the Defence Force and the Secretary of Defence, with input from the Australian Intelligence Community.

<sup>18</sup> Namely the: Deputy Prime Minister; Attorney-General; Treasurer; Minister for Defence; Minister for Immigration and Border Protection; and Minister for Foreign Affairs, with other Ministers attending, as relevant). Supporting the NSC is the Secretaries Committee on National Security (SCNS), composed of secretaries from every relevant department and agency.

<sup>19</sup> Comprising staff from DFAT, ADF, AFP, the New Zealand Government and the Australian Council for International Development.

**Development** regulates the security of airports, airlines, sea ports and other forms of transport, supported by state and territory authorities.

- For domestic protective services, the **Australian Defence Force (ADF)** maintains capabilities that can assist civil authorities in emergencies under specific policy arrangements, referred to as Defence Assistance to the Civil Community (DACC).
- Internationally, the **ADF** and the **Australian Federal Police (AFP)** have contributed to Australian stabilisation operations, especially in the Pacific.
- National security risks are monitored overseas by **DFAT** and the **Australian Secret Intelligence Service**, which obtains and distributes secret intelligence relating to Australia's interests and the well-being of Australian citizens. Meanwhile, the **Australian Security Intelligence Organisation** advises the Government about activities or situations that might endanger Australia's national security. The **Office of National Assessments** assesses and analyses international political, strategic and economic developments for the Prime Minister and senior ministers of the **NSC**.
- A range of other agencies provide policy input and sometimes personnel as required, for example the **Department of Health** in case of pandemic.

DFAT provides diplomatic support for all ADF deployments. DFAT leads all humanitarian responses- including complex emergencies that require stabilisation, working closely with whole of government partners including the ADF. To aid whole of government capacity, the Australian Civil-Military Centre generates lessons learnt from civil-military operations. Notably, in November 2016, the Centre launched a Report<sup>20</sup> on the Australia's whole-of-government approach to Afghanistan between 2001 and 2013, which outlines the strengths and challenges of Australia's mission in Afghanistan. This was the first set of formal lessons learnt of an interagency response to a complex emergency. Such lessons learnt will continue to guide civil-military response to disasters, including those related to climate change.

Participating in civil-military exercises on conflict and disaster response is an effective tool for strengthening DFAT preparedness and ensuring effective coordination and interoperability in responses. DFAT has developed an *Exercise Engagement Strategy* that identifies DFAT's civil-military preparedness requirements and matches these requirements to national, regional and international exercises. The Strategy prioritises participation in 21 exercises that: cultivate and deepen Australia's engagement with bilateral/regional partners; encourage regional stability; and allow DFAT to practice effective consular services and improve our responses to humanitarian emergencies and other international crises. DFAT support to these exercises may be as part of exercise control, the training audience, or lessons and evaluation teams.

<sup>20</sup> The Report was undertaken by former Secretary of the Department of Defence and Australia's Special Representative to Afghanistan and Pakistan, Mr Ric Smith AO, PSM.



In recent civil-military exercises, DFAT has prioritised the *Women, Peace and Security agenda* in *UNSCR1325* to inform new military doctrine. The ADF and DFAT are also jointly developing a civil-military chapter of the Multi National Forces Standard Operating Procedures (MNFSOP). The ADF also regularly includes DFAT and civil society organisations in exercises to reinforce relevant civil-military doctrine, such as exercise Talisman Sabre in 2017. DFAT and the ADF enhance coordination through officer exchange programs.

#### **d. the role of Australia's overseas development assistance in climate change mitigation and adaptation more broadly**

Australia's official development assistance (ODA) is increasingly invested in climate change-mitigation, adaptation, resilience-building and humanitarian relief.

The *Paris Agreement* provides a strong framework for climate efforts by all countries for coming decades. It sets a direction for transition to a lower-emissions, more climate resilient global economy, and signals the transformation of major sectors, such as agriculture, infrastructure and transport.

In embedding the fundamental objective of mitigation to reduce climate impacts, the Agreement also recognises that historic emissions mean some climate change is inevitable and impacts are already being felt. For this reason, the Agreement specifies that mitigation needs to be accompanied by adaptation and resilience building, and supports financial, technological and capacity building for developing countries. Australia's ODA investments in climate change measures aim to align with each country's Nationally Determined Contributions (including mitigation targets) and National Adaptation Plans that guide climate-resilient planning and actions.

At COP21 in Paris the Prime Minister undertook to invest AUD 1 billion, over five years, to build climate resilience and reduce emissions. This includes a commitment of AUD 200 million to the Green Climate Fund (GCF) (2014-2018) and AUD 300 million to address climate change in Pacific island countries (PICs), which the Prime Minister announced in Pohnpei in September 2016.

The Prime Minister's AUD 300 million climate finance commitment to the Pacific will, over four years, comprise AUD 150 million in bilateral aid investments, AUD 75 million through disaster resilience investments and AUD 75 million in regional investments.

DFAT's aid focus is in the Indo-Pacific region. Countries of the Indo-Pacific, in particular the PICs, are at high risk of disasters. As a threat-multiplier, climate change's interactions with existing vulnerabilities increase the risks of disasters:

- seven of the 10 countries most at risk of disasters are in the Indo-Pacific: Vanuatu; Tonga; Philippines; Bangladesh; Solomon Islands; Cambodia; and Papua New Guinea<sup>21</sup>
- the countries most susceptible to rising sea levels include the Pacific island countries (PICs), Bangladesh, China, India, Indonesia, Japan, the Philippines and Vietnam
- mega-cities in Bangladesh, India and across China's Pearl River Delta are particularly vulnerable to flood risks.

Multiple DFAT programs – including on economic diplomacy, water, agriculture, disaster risk reduction, education, health, infrastructure, trade, governance, disability and gender equality - play a part in reducing climate change's threat multiplier effect.

<sup>21</sup> World Economic Forum (WEF), 2017, *The Global Risks Report 2017*, WEF, Geneva.

DFAT undertakes ODA investments in partnership with individual countries, regional organisations, and multilateral banks and funds. DFAT's longstanding partnerships with Australian and international NGOs remain a pillar of our Australian Aid Program (encompassing humanitarian response and longer-term development investments). DFAT works collaboratively on various ODA climate change investments with other Australian government departments, including the: Bureau of Meteorology; Commonwealth Scientific and Industrial Research Organisation (CSIRO); Australian Centre for International Agricultural Research (ACIAR); and Department of Environment and Energy. Increasingly we are also investing in partnerships with the private sector.

Climate-related projects are typically cross-cutting. Projects to mitigate emissions may often include adaptation and resilience-building benefits. An example of this is the DFAT-supported G20 initiative - *AgResults* - delivered in Vietnam, which incentivises the uptake of technologies to reduce greenhouse gas (GHG) emissions from paddy rice farming, while simultaneously increasing poor farmers' yields, which have been impacted by changing climatic conditions. Alongside emission mitigation, this project assists farmers to adapt to new climatic conditions and to build resilience, through improved agricultural productivity and nutrition, and catalysing private sector investment.

Disaster risk reduction (DRR) encompasses discrete activities, such as physical improvements to infrastructure, as well as embedded actions across all aid investments to prevent creation of new risk, reduce existing risk and manage residual risk.

With this in mind, DFAT is integrating climate action and disaster resilience across the entire aid program, bilaterally, regionally and globally in two ways:

1. mainstreaming climate action across the aid program portfolio investments, comprising: climate risk analyses; climate-smart and climate-proofing new investments; institutional, policy and programmatic capacity-building;
2. targeted climate-change mitigation and/or adaptation investments.

Mitigation is fundamental to countries' achievement of their respective emissions reductions targets, and to the success of the Paris Agreement.

PICs have prioritised reducing their reliance on fossil fuels, so DFAT is supporting renewable energy across the Pacific, including current investments such as:

- *The Tina River Hydropower Project*<sup>22</sup> (AUD 26.7 million): is a major infrastructure project for Solomon Islands. The project will involve building a 15 megawatt hydropower facility that has the potential to meet two thirds of Honiara's forecast 2022 energy demand, which today is almost entirely powered by expensive and unreliable diesel energy. It will enable the Solomon Islands Government to meet its Intended Nationally Determined Contributions for the reduction of greenhouse gas emissions.

<sup>22</sup> USD 240 million is the project's total value. Australia, in cooperation with the World Bank Group and ADB, is supporting the Solomon Islands Government (SIG) to develop the project. The Green Climate Fund Board has approved USD 86 million in concessional loans and grant support. The World Bank Board approved USD 33.6 million in loans and grants for the project and the ADB Board will consider a proposal for USD 30 million (loan and grant) in October 2017.

- *Variable Renewable Energy Grid Integration Program*<sup>23</sup> (AUD 1.5 million): supports 10 Pacific Island countries (Fiji, Micronesia, Kiribati, Marshall Islands, Palau, Samoa, Solomon Islands, Tonga, Tuvalu and Vanuatu) to integrate solar and wind into electricity grids while maintaining reliability, affordability and adequacy of supply. The program will provide capacity building related to long-term power systems planning, market design, renewable energy support schemes, rules of access for renewable energy to the grid, and strengthening dispatch and transmission systems.

DFAT is increasingly looking to support mitigation in South East Asia, notably in Indonesia.

Examples are:

- *Environmental governance and climate change response program* (Indonesia, AUD 10 million 2015-2019): to prevent smoke haze and emissions in the forestry and land use sectors.
- *Responsible Asia Forestry and Trade (RAFT)* (AUD 6 million, 2015- 2018): to reduce deforestation and improve sustainable forest management in the Asia-Pacific.

Climate adaptation and resilience building are central to our investments across the Pacific.

Examples range from climate-resilient infrastructure projects, to specialised capacity-building in climate forecasting and decision-making, to the integration of social inclusion and gender issues into climate and humanitarian action. Current Pacific investments include:

- *Vanuatu Roads for Development* (AUD 28.5 million): is improving key roads at high risk of climate impacts (such as extreme rainfall and flooding).
- *Climate Adaptation and Disaster Risk Reduction & Education Program* (AUD 3.6 million): is building resilience to natural hazards in 50 communities in the Republic of Marshall Islands and the Federated States of Micronesia. The program delivers public information campaigns, hazard, vulnerability and capacity maps, risk management and mitigation plans for each school, as well as infrastructure upgrades to schools.
- *Climate and Oceans Support Program in the Pacific* (AUD 33 million): is building tools to forecast and report on climate tides and sea level monitoring, and to assist decision making in disaster preparedness, agriculture, fishing and the tourism industry.
- *Climate Finance Readiness for the Pacific* (AUD 2.3 million): is strengthening the coordination and use of the various streams of climate finance by Pacific recipient countries.
- *Framework for a Pacific Oceanscape*<sup>24</sup>(AUD 5.9 million): includes support for jurisdictional rights over maritime boundaries and establishment of the Office of the Pacific Ocean Commissioner.
- *Australia Awards Pacific Scholarships*: are strengthening climate change leadership across the Pacific. For example, in 2016, several Tuvalu scholars completed tertiary studies in resilience-building areas of law, climate change and waste management, construction

<sup>23</sup> This Program forms part of the World Bank's Energy Sector Management Assistance Program (ESMAP) (World Bank).

<sup>24</sup> Through the DFAT Government Partnerships for Development Enhancing Pacific Oceans Governance (EPOG) project.

management, civil engineering and public administration. These graduates have since returned home to assist Tuvalu's resilience-building for climate change and disasters.

- *ProPa Network*: is a collaboration of government actors in the Pacific, supported by DFAT, which works to ensure social inclusion and gender issues are integrated into climate change action and humanitarian response.

Australia's adaptation and resilience building investments in Asia similarly span sectors from disaster management to agricultural livelihoods, including a focus on water management in view of the potential future social, political and economic -impacts of water scarcity.

Current investments in South-West Asia include:

- *Sustainable Development Investment Portfolio* (South Asia, AUD 87 million<sup>25</sup>): supports the integrated management of water, energy and food in three major Himalayan river basins that cover Pakistan, northern India, Bangladesh, Nepal and Bhutan.
- *Protracted Relief and Recovery Operations* (Afghanistan, AUD 20.9 million): covers a wide range of DRR activities (such as flood protection walls and soil conservation), as well as vocational skills training and government capacity building, alongside including food assistance and supplementary feeding to people affected by conflict and natural disasters.
- *Australia Afghanistan Community Resilience Scheme* (Afghanistan, AUD 25 million): supports improvements in the livelihoods and resilience of rural communities in 18 provinces with a particular focus on women and consideration of climate change. Activities include support to market linkages and improving agricultural practices, irrigation and flood protection walls.
- *ADB Pakistan Fund for Disaster Risk Management* (Pakistan, AUD 4.5 million): provides seed funding for the Pakistan National Disaster Risk Management Fund (PNDRMF), which supports priority recovery, rehabilitation and reconstruction needs, and DRR efforts.

Current investments in South-East Asia include:

- *Mekong River Commission* (Mekong, AUD 6 million): supports the Mekong River Commission to improve: engagement with civil society, research institutions and private sector developers; implementation of water management procedures; regional basin planning; dialogue between Mekong countries on how to sustainably and equitably develop the Mekong River basin; and national capacity building support to enable regional water-related cooperation.
- *Australian Water Partnership* (across Indo-Pacific, AUD 20 million): is a platform to share Australia's water experience and expertise with countries in the Indo-Pacific region, with a particular focus on climate change.
- *The Philippines Disaster and Climate Risks Management initiative* (the Philippines, AUD 31.4 million): is strengthening the Philippines government's capacity for disaster

<sup>25</sup> Comprising two phases of: i) approximately AUD 45 million (2012-2016); and ii) AUD 42 million (2016-2020).

preparedness, including via: i) technical agencies' capacity building on disaster response and monitoring, early warning and forecasting, hazard and risk analysis, climate science and adaptation options (to better inform disaster and climate risk management in vulnerable areas); ii) technical and policy support on integrating disaster risk management and climate change and mainstreaming across government and development sectors; iii) facilitating linkages between technical agencies in the Philippines with their Australian counterparts and non-government organisations.

- *Basic Education Sector Transformation* (the Philippines, AUD 157.2 million): includes measures that ensure classrooms are designed and constructed with resilience to varying natural hazard risks. Benefits include that schools can be used as community havens during an emergency and can more quickly become schools again after the disaster.
- *The Integrated Coastal Management Program* (Vietnam, AUD 18 million): supports the Vietnam government strengthen planning, technical and financial capacities to foster climate-resilient development of the Mekong Delta. Activities include: cost-effective mangrove rehabilitation and coastal forest protection; promotion of alternative income opportunities for communities; alternative farming practices; and improvement of dyke construction and management.
- *Supporting Partnerships and Resilience of Communities* (Myanmar, AUD 9.75 million): is supporting integrated livelihood activities, improved climate-sensitive food security and increased economic opportunities.

### **Multilateral banks and funds**

Multilateral banks and funds play an increasing role in global mitigation, adaptation and resilience-building. Australia remains an influential shareholder and substantial donor to various multilateral banks and funds, and via this role contributes to their climate-related policy debate and development. In 2015-16, Australia's core contributions to the World Bank Group (WBG) and Asian Development Bank (ADB) were AUD 222 million and AUD 124.9 million respectively, a portion of these funds targeted climate change measures.

The multilateral banks and funds are increasing their focus on climate change projects. The WBG, for example, has committed to spending 28 percent of its portfolio for 2018 on climate change activities and is asserting an expanded central role in addressing these and other complex policy challenges through increased coordination between global agencies. Addressing the impact of climate change is a key thematic priority for the 2017-2020 replenishment of the WBG's concessional financing arm - the International Development Association (IDA) - which raised a record USD 75 billion in 2016 to assist 75 of the world's poorest countries (20 in the Indo-Pacific region). The ADB is aiming to increase its annual financing of projects that support climate change adaptation/mitigation to USD 6 billion by 2020.

Australian contributions to two dedicated funds are especially noteworthy:

- The Green Climate Fund (GCF) is the largest multilateral fund for supporting climate change- mitigation and adaptation in developing countries. It helps to implement the Paris

Agreement goals by funding high impact, transformational projects, and catalysing climate finance from other sources including the private sector. Australia committed AUD 200 million for the Fund's initial resource mobilisation for 2015- 2018. As Co-Chair of the GCF Board, Australia has highlighted the vulnerability and needs of the Pacific at the GCF Board, and helped increased accessibility to the Fund for all countries

- The Global Environment Facility (GEF) is the largest funder of projects to improve the global environment, particularly addressing the drivers of environmental degradation and climate change, and supporting the Paris Agreement. GEF is Australia's primary multilateral instrument for supporting environmental activities in developing countries, in partnership with governments and the private sector, and we committed AUD 93 million to the sixth replenishment in 2014.

### **Private Sector Engagement**

Public finance and policy interventions to mobilise private finance is necessary to meet the Paris Agreement's goal of transitioning to a low-emissions, climate resilient global economy.

Australia recognises that developing countries can experience challenges in attracting and gaining access to private finance for climate action, particularly in the Pacific. Australia is helping to develop a pipeline of investment-ready projects to facilitate increased private finance, including by bridging the gap between project proponents and financiers. Working closely with partners and donors to secure increased investment from the private sector in the Pacific, DFAT is increasing efforts under the aid program to identify opportunities, for example:

- Supporting the Private Financing Advisory Network (PFAN), which helps business to mobilise financing for clean energy projects in developing economies. With Australia's support, PFAN is expanding its work in the Asia and Pacific regions. Australia has announced AUD 4 million in funding for PFAN, and been elected as the interim chair of the PFAN board.
- Providing matching finance for clean energy projects under DFAT's Business Partnerships Platform (BPP). For example, under the BPP, DFAT has a joint investment with Digicel for affordable and reliable solar energy in PNG.
- Using public funding to support the broader transformation of finance flows needed to implement the Paris Agreement, for example via the provision of guarantees for clean energy investment in developing countries, through the Private Infrastructure Development Group (PIDG).
- Encouraging a focus on private finance as co-chair of the Green Climate Fund (GCF), for example through a new USD 750 million GCF facility that is expected to mobilise approximately USD 30 billion in private sector investment in renewable energy projects.

### e. the role of climate mitigation policies in reducing national security risks

Mitigation of greenhouse gas emissions is fundamental to reducing climate impacts that might pose risks to Australia's national security.

Effective mitigation requires a coordinated global response, Australia is Party to the:

- 1992 UN Framework Convention on Climate Change (UNFCCC)
- Kyoto Protocol
- Doha Amendment
- 2015 Paris Agreement.

The *Paris Agreement* is the international community's core vehicle for addressing climate change and is designed to coordinate global mitigation efforts. It sets in place a durable and dynamic framework for all countries to take climate action. Key goals include:

- A global goal to hold average temperature increase to well below 2°C and pursue efforts to keep warming below 1.5°C above pre-industrial levels.
- All countries to set mitigation targets from 2020 and review targets (set for every 5 years) to build ambition over time, informed by a global stocktake.
- A global goal to achieve net zero emissions by the second half of this century.
- Robust transparency and accountability rules to provide confidence in countries' actions and track progress towards targets.
- Promoting action to adapt and build resilience to climate impacts.
- Financial, technological and capacity building support to help developing countries implement the Agreement.

DFAT leads Australia's international negotiations for the rules to implement the *Paris Agreement*, the core elements of which are to be finalised by the end of 2018.

Australia participates in other international climate change mitigation arrangements including the:

- International Civil Aviation Organization (ICAO): alongside 70 other States (representing around 88 per cent of international aviation activity), Australia has volunteered to participate in the pilot phase (from 2021) of ICAO's Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA). This includes incentives to increase the uptake of sustainable alternative fuels and will require airlines to offset industry growth in emissions above 2020 levels on all flights between participating countries.
- Montreal Protocol on Substances that Deplete the Ozone Layer: Australia co-chaired negotiations in Kigali in 2016 to agree the global phase-down of the production and imports of hydrofluorocarbons (HFCs) requiring developed countries to reduce HFCs by 85 percent (from current levels) by 2036 and developing countries to achieve this reduction by 2045-47. Australia is looking to ratify the Kigali Amendment, which guides the phase-down of HFCs in 2017. In 2016 Australia hosted a workshop and trade show in Fiji for Pacific



island countries to promote alternative refrigeration and air conditioning technology using lower global warming potential refrigerants and less energy.

- International Maritime Organization (IMO): members have agreed to adopt an initial comprehensive IMO strategy on reduction of greenhouse gases from ships by April 2018, to be followed by a revised strategy in 2023.

### **Australia's emissions reductions**

The Government is taking strong domestic action to reduce greenhouse gas emissions. Australia will beat our 2020 emissions reductions targets and remains committed to our 2030 target of reducing our 2005 level emissions by 26-28 percent. This represents a halving of emissions per capita and a two-thirds reduction in the emission intensity of the economy between 2005 and 2030.

The Government has a comprehensive suite of policies in place to reduce Australia's emissions, including through:

- The Emissions Reduction Fund established to assist Australian farmers and businesses reduce emissions, while generating new income streams and boosting productivity. The Fund has already contracted 189 million tonnes of emissions reductions at an average price of AUD 11.83 per tonne. The Fund's Safeguard Mechanism puts emissions limits on Australia's largest emitters covering about 50 per cent of national emissions – providing assurance that abatement purchased through the Fund is not offset by significant emissions increases elsewhere in the economy.
- The National Carbon Offset Standard sets the requirements for businesses to voluntarily become carbon neutral. These requirements are based on a rigorous and transparent framework that is supported by international standards and tailored to the Australian context.
- The National Energy Productivity Plan, which is driving more productive use of energy – we have a target to improve Australia's energy productivity by 40 per cent between 2015 and 2030.
- The Clean Energy Finance Corporation (CEFC) and the Australian Renewable Energy Agency (ARENA), which in combination support clean energy innovation in Australia. The Government has already committed AUD 1.2 billion to over 270 renewable energy projects through ARENA, with an additional AUD 1 billion available for Australian renewable energy projects over the next five years. ARENA is supporting the renewable energy industry to innovate and roll out projects. To date, the Government has committed over AUD 3.5 billion to promote investment in clean energy technologies in Australia. The AUD 200 million Clean Energy Innovation Fund is helping support emerging clean energy technologies to make the leap from demonstration to commercial deployment.

- The Renewable Energy Target, which is for 23 per cent of Australia's power to come from renewable sources by 2020. So far, 15 per cent (or over 2.6 million Australian households) have solar systems – the highest proportion in the world.
- Mission Innovation (comprising 21 other countries and the European Union) offers a platform for Australia to double public investment in clean energy research and development (R&D) by 2020.

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