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ANALYSIS

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COMPREHENDING COPENHAGEN: A GUIDE TO THE INTERNATIONAL CLIMATE CHANGE NEGOTIATIONS

EXECUTIVE SUMMARY

From 7 to 18 December, representatives of 192 nations will gather in Copenhagen to try to strike a new international agreement on climate change. This Analysis provides a guide to understanding the negotiations.

Foremost on the agenda is the problem of sharing the burden of cutting greenhouse gas emissions. Developed countries are expected to adopt new emissions reduction targets and high-emitting developing countries are being urged to commit to reduce their burgeoning emissions. An effective compromise will need to include financial and technological assistance to help developing countries grow more cleanly and adapt to climatic shifts that are already underway and projected to intensify. A host of other complex issues crowd the agenda – from expanding international carbon markets to curtailing emissions from deforestation.

Australia, which faces grim consequences from unchecked climate change, has much at stake in Copenhagen. Obligations and rules determined in the negotiations will also influence the policy design of the Carbon Pollution Reduction Scheme and the politics surrounding it.

It seems unlikely that the conference will produce a comprehensive, legally binding agreement. At best, countries may agree on the broad parameters of a new agreement and a mandate to finalise the negotiations in 2010, but dramatic failure cannot be ruled out.

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INTRODUCTION

From 7 to 18 December 2009, the world's attention will be focused on Copenhagen, Denmark, where delegates from 192 nations – along with thousands of environmentalists, businesspeople and members of the press – will converge for crucial talks aimed at reducing global emissions of the greenhouse gases that cause climate change.

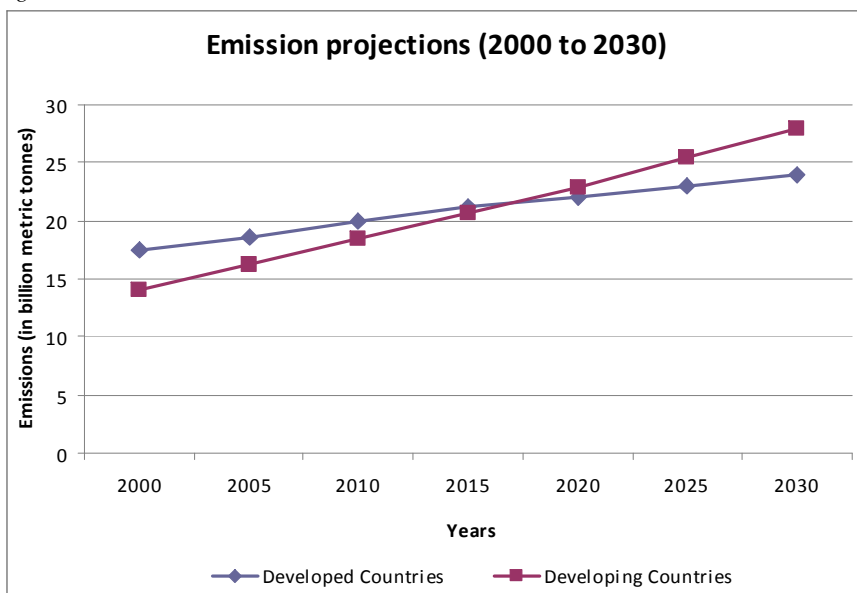
The ultimate aim of the Copenhagen conference – formally entitled the 15th Conference of the Parties (COP) to the United Nations Framework Convention on Climate Change (UNFCCC) – is to negotiate an agreement to extend or replace the Kyoto Protocol, which effectively expires in 2012. The conference is the next step in a two decades long process by which countries have attempted to respond to the challenges posed by climate change.

So why is Copenhagen so important? The immediate reason is that it represents the end of the two-year period that countries set themselves at Bali for negotiating a new international agreement. But the extraordinary global interest in the negotiations stems from a wider public concern about the problem of climate change itself.

Despite the international determination to address climate change over the past two decades, emissions of greenhouse gases have continued to rise, and at an increasing rate. Ominously, emissions projections suggest that this trend will continue.

At the same time, the science of climate change is becoming both more certain and more disturbing year by year. The Intergovernmental Panel on Climate Change (IPCC) has concluded that there is no longer any doubt that the earth's climate is warming and there is very high confidence that this warming is being caused by human activities – primarily the burning of fossil fuels and land-based activities such as deforestation.¹ The consequences of climate change are already being felt around the world, and these will worsen in the years and decades ahead.

Figure 1



Source: U.S. Environmental Protection Agency, <http://www.epa.gov/climatechange/emissions/globalghg.html>

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Given the dangers associated with climate change, it is not surprising that there has been an increasing public demand for an effective response, which governments are seeking to provide through both domestic policies and international cooperation. Over the last 12 months, many traditionally intransigent large emitters have implemented policies and pledged targets to reduce their emissions. Despite these welcome developments, international negotiations have moved slowly and yielded little progress in the lead-up to Copenhagen, and the US Senate has not yet passed its all-important climate change bill. Governments are reacting to these developments in different ways. Some leaders now want to scrap discussions of the difficult issues altogether, while at the other end of the spectrum, others are waging last-ditch campaigns for a comprehensive treaty. Many now predict that the conference will at best produce a 'political' agreement that lacks detailed targets, commitments and rules.

Notwithstanding these mixed signals, the underlying issues on the Copenhagen agenda will need to be resolved eventually, whether at Copenhagen or afterwards. These issues are, however, fiendishly complex and the processes of the international climate regime can appear arcane. This paper, designed as a 'follower's guide', aims to demystify the negotiations and deepen public understanding of this important international process.

The first part of the paper describes the main issues that need to be resolved if an effective international agreement is to materialise and outlines the approaches of the various countries and groups to each issue. The second part explains the process by which the negotiations will be conducted and provides an overview of the key events that will take place during the two weeks of the negotiations. The final section reviews some important recent developments, describes four possible outcomes of the negotiations, and considers the potential implications of the conference for Australia and the world.

2. KEY ISSUES ON THE AGENDA

(a) Mitigation: goals, commitments and targets

(i) *Introduction*

Climate change mitigation – reducing global greenhouse gas emissions – is the primary concern of the international climate regime. Developed country parties to the UNFCCC pledged to reduce their domestic greenhouse gas emissions in the early-mid 1990s and the Kyoto Protocol, agreed in 1997, imposed upon them quantifiable emissions limitations for the period 2008-2012.² Yet throughout this period, global emissions have increased substantially. At Copenhagen, countries will aim to negotiate goals, as well as the rules, for stemming the unsustainable growth in global and national emissions from 2013 onwards. Allocating responsibility for doing so among self-interested countries in a manner that is effective, fair and efficient has, however, proved an intractable task to date, and Copenhagen is likely to be no exception.

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Mitigation under the UNFCCC is structured around three sets of binary distinctions. The first relates to the internal and external affairs of the nation-state and is common to all areas of international law and institutions. In international law, states are presumed to possess exclusive sovereign power over their defined territory, including the power to exploit the natural resources that lie within it, subject only to certain rights of other states and to any international agreements by which they may consent to be bound. The UNFCCC approach to climate mitigation is therefore premised on the assumption that parties will collectively agree on emissions limits and then individually measure, report and ultimately reduce greenhouse gas emissions emanating from their territory. The state-based nature of the UN process also partly explains the second key distinction, between ends and means. Traditionally, mitigation obligations have focused on allocating quantitatively and temporally limited greenhouse gas reduction targets while leaving individual countries largely free to determine the policies, technologies and institutions by which these are to be achieved. Finally, a distinction has traditionally been drawn in the climate regime between 'developed' (Annex-I) and 'developing' (non-Annex-I) countries, with the former undertaking more onerous obligations than the latter.

Countries' status under the UNFCCC

Parties are countries that have ratified the UNFCCC.

Annex-I countries include those parties that were members of the OECD as at 1992, as well as a number of former Soviet countries known as 'economies in transition'. These parties are listed in Annex-I to the UNFCCC. Under the UNFCCC and the Kyoto Protocol, Annex-I countries bear more onerous obligations than other countries.

Non-Annex-I countries are those countries not listed in Annex-I – ostensibly these are developing countries (but they also include countries like Singapore, which has a high GDP per capita).

But real-world developments are complicating each of these distinctions. First, much of the world's resources that are integral to emissions-producing processes, particularly in developed countries, are privately controlled and are exploited for private gain, meaning governments often have only an indirect ability to control emissions emanating from their territories. This highlights the significance of implementing effective 'means' of mitigation, such as energy efficiency policies and carbon pricing. Second, from international air transport to the export of harvested wood products, many of the production and consumption activities that generate emissions are globalised, undermining the significance of national borders and complicating the state-centric approach to mitigation. Third, there is increasing recognition that allocating mitigation responsibilities based on a blunt distinction between developed and developing countries insufficiently accounts for the wide variety of national circumstances, levels of development and contribution to global emissions among parties. As some large developing countries industrialise and their emissions skyrocket, for example, they are coming under increasing pressure to accept more onerous mitigation obligations.

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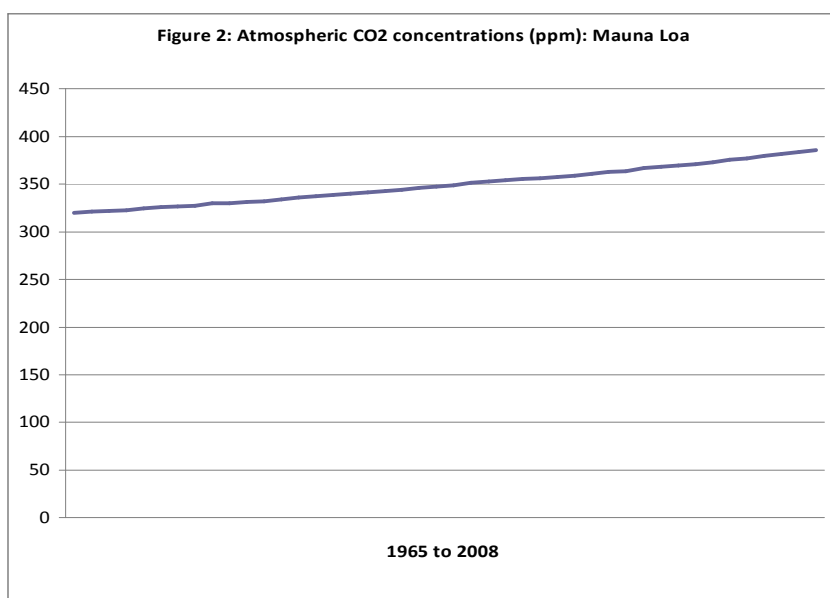
These global political and economic realities have prompted an expansion of the international climate agenda in recent years. We discuss these increasingly complex mitigation issues in more detail in the following paragraphs.

(ii) Long-term vision and collective goals

The UNFCCC expresses the ultimate objective of international cooperative action on climate change in qualitative terms, namely, the 'stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system'.³ Parties will attempt at Copenhagen to quantify the levels of atmospheric greenhouse gas concentrations and the degree of warming they consider to be 'dangerous'. An increasing number of countries are espousing the view that concentrations should be stabilised at 450 parts per million (ppm),⁴ on the advice of the IPCC that such a stabilisation would probably keep warming to around 2°C above pre-industrial levels.⁵ Agreeing on such goals may provide a degree of certainty as to the long-term orientation of global

action, but it is becoming increasingly apparent that the climate is changing faster, and more severe natural disturbances are being triggered earlier and at lower atmospheric concentrations of greenhouse gases, than was projected by even the most recent IPCC reports.⁶ These developments call into question the conception of 'dangerous interference' on which such quantified goals are based. The Alliance of Small Island States (AOSIS), supported by a growing cohort of influential

scientists and policymakers, has accordingly called for stabilisation at concentrations below 350ppm in order to limit temperature increases to below 1.5°C.⁷ Commitments of this scale have not, however, gained traction among high-emitting nations and countries with rapidly growing emissions. Just as important as agreeing a stabilisation target are decisions about how and by when it should be achieved, and whether concentrations could be allowed to 'overshoot' the target before declining. The near-absence of high-level discussions of such details reinforces the aspirational quality of current negotiations on long-term goals.



Source: L R F Keeling et al, Atmospheric CO2 values (ppmv) derived from air samples collected at Mauna Loa, Hawaii, USA, 2009.

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Negotiators are also considering proposals for long-term, world-wide emissions reduction targets, with current proposals for global mitigation ranging from 50% to more than 85% below 1990 or current levels (depending on the proposal) by 2050. But the negotiation of even such a distant goal is not free from countries' self-interested political calculations. Many in the G77 and China group of developing countries, for example, have persistently resisted the inclusion of such a global goal in any new treaty, fearing it would imply a greater mitigation burden for its higher-emitting members in the decades ahead than they are presently willing to accept.⁸

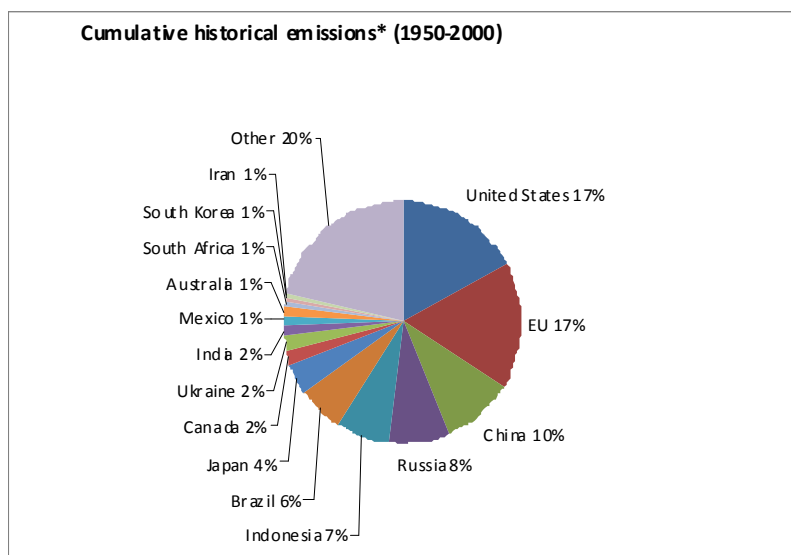
Assuming agreement is reached on a suite of global goals, it may be possible for the emissions cuts needed to reach those goals in the agreed timeframe to be calculated and then a 'share' of the required cuts allocated to countries. Various approaches to such an allocation have been proposed. One such approach, based on a country's cumulative historical emissions (or 'emissions debt') would require those countries that have contributed most to the problem of climate change to bear the greatest share of the mitigation burden. Another proposal ('equal per capita emissions entitlements') would assume that every person on the planet had an equal entitlement to emit a given amount of greenhouse gases per year and would allocate those entitlements to countries in accordance with their population levels. Such 'top-down' approaches to mitigation are favoured by some developing countries. But in practice, country allocations will be negotiated

in an intensely political process and countries' individual targets won't necessarily 'add up' to any stated collective, global goals. A 'bottom-up' approach is the only one that is acceptable to those countries that will be expected to do the bulk of the mitigation work – developed countries and, to a growing extent, large-emitting developing countries.

(iii) Individual commitments of developed and developing countries

Perhaps the most intractable dispute in the international climate talks concerns the balance of responsibility between developed and major developing countries for reducing emissions. It is a foundational principle of the international climate regime that developed and developing countries have

Figure 3



Source: World Resources Institute, Climate Analysis Indicators Tool (Version 6.0, 2008).

* CO₂ emissions from energy and land-use (ie. including deforestation) between 1950 and 2000.

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'common but differentiated responsibilities' to protect the climate.⁹ This principle is manifested in the more onerous obligations borne by developed country parties under the UNFCCC and explains why only the developed, 'Annex-I' countries have binding mitigation targets under Kyoto.¹⁰ However, there remains much disagreement about the practical application of this principle. The basis on which countries' responsibilities are differentiated needs to be resolved if any new treaty is to emerge from Copenhagen.

Developing countries argue that developed countries should take the lead in cutting their emissions and should bear the bulk of the mitigation burden. For example, China has called for developed countries to reduce emissions beyond 40% below 1990 levels by 2020.¹⁹ AOSIS has urged even deeper cuts on the part of developed countries: more than 45% by 2020 and more than 95% by 2050.²⁰ The demands of the African Group are similar.²¹ But developed countries have signalled that they will not agree to cuts of this magnitude at Copenhagen. During a meeting in July this year, the G8 countries agreed to reduce their emissions by 80% by 2050.²² While no base year was stated, this gives some indication of the level of 2050 targets that developed countries will be willing to accept at Copenhagen. There is no consensus at all, however, on a collective 2020 target or individual developed countries' 2020 commitments. The targets discussed publicly to date, which have been suggested through national pronouncements and are not part of any international agreement, are listed in Figure 4. These targets would, if met, add up to total cuts in developed world emissions of a mere 10-24% below 1990 levels by 2020 – well below developing countries' expectations.²³

Figure 4: Currently pledged 2020 targets and base years for selected Annex-I parties

Country	Base year	Target
Australia ¹¹	2000	-5 to -25%
Canada ¹²	2006	-20%
European Union ¹³	1990	-20 to -30%
Japan ¹⁴	1990	-25%
New Zealand ¹⁵	1990	-10 to -20%
Norway ¹⁶	1990	up to 40%
Russia ¹⁷	1990	-10 to -25%
Ukraine ¹⁸	1990	-20%

While parties diverge wildly in their views as to the appropriate 'numbers' to which developed countries should commit, there is also widespread disagreement over a suite of issues that greatly affect the quality and extent of abatement activity actually implied in any particular target. These include: the baseline year against which emissions should be reduced (countries choose years that favour their own circumstances); the sources of emissions that should be counted towards country commitments (eg. the extent to which land-use change emissions and removals should count); and the extent to which countries could meet their commitments by paying for (cheaper) emissions reductions overseas.

Three sets of factors are hindering the negotiations over developed country mitigation. First, domestic economic factors have dampened the appetite for ambitious cuts in key developed countries. Governments have attempted to balance responsible climate change action against concerns about the growth and competitiveness of their economies, particularly amid the fallout from the global financial crisis. The US Congress is deeply concerned about the effects of climate policy on the American

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economy and economic arguments have proved effective at mobilising political opposition to President Barack Obama's energy agenda. In Australia, the Rudd Government delayed the proposed commencement date of its emissions trading scheme until mid-2011 because of the impact of the financial crisis on the Australian economy.²⁴ The crisis has also reinforced countries' habitual defensive stance of indicating a willingness to act only after others have taken the necessary and painful first steps.

Second, developed countries disagree about how to share among themselves the relative burden of reducing developed world emissions. The parties agreed at the Bali Conference that developed countries would negotiate fresh commitments in a way that ensures 'comparability of effort' among countries, taking into account differences in their 'national circumstances'.²⁵ This means that differences in individual country commitments must be linked to a set of prescribed factors (eg. demography, level of economic development, energy profile, geographic and climate factors) that affect each country to differing degrees. But the factors to be taken into account – let alone the weight to be given to each one or the way they should be applied to a particular country – are themselves highly contested. Australia asserts that its 'unique' circumstances (its rapidly growing population, heavy reliance on fossil fuel energy sources, and preponderance of energy- and emissions-intensive industries) make the overall cost of Australian action higher than for other developed countries, and should be taken into account when assessing the comparability of effort implied in its negotiated target.²⁶ Other blocs and countries, including the EU (and its member states), have become adept at prosecuting arguments relating to their own unique circumstances. Portugal, for example, is allowed a 27% increase on its 1990 level emissions by 2012 under current EU burden-sharing arrangements,²⁷ and Iceland obtained a special exemption from including emissions from large aluminium smelting projects (that together produce over 10% of the country's total emissions) in its Kyoto emissions allocations.²⁸

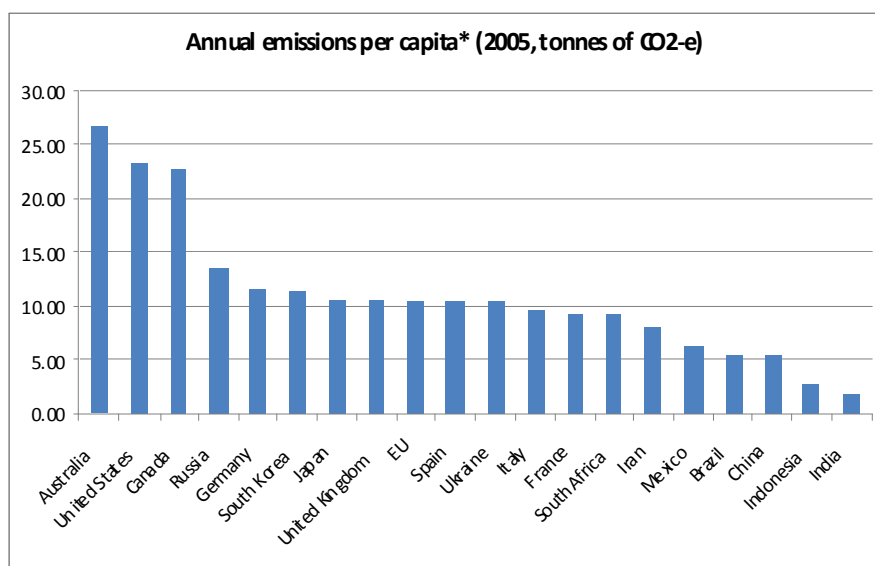
The third and most significant development that has hampered progress on developed country emissions reductions has been the growth in developing country emissions. The rapid growth in economic output, energy demand and emissions in major developing countries over the past decade, particularly China (which surpassed the United States as the largest annual emitter of greenhouse gases several years ago²⁹), has pushed global emissions higher than even the worst-case scenario projections of the 1990s and early 2000s. The International Energy Agency now predicts that global energy-related CO₂ emissions will increase by 40% from 2007 to 2030 and that all of this growth will come from non-OECD countries – more than 70% of it from China and India alone³⁰ – with the alarming consequence that atmospheric greenhouse gas concentrations could not be stabilised at 450ppm even if OECD countries reduced their emissions to zero.³¹ Accordingly, officials from developed countries now tout the futility of reducing their own emissions if those from major developing countries are allowed to balloon unabated. Developed countries are therefore calling on their developing counterparts – particularly the larger emitters – to accept binding commitments to reduce the rate of emissions growth below an agreed 'business-as-usual' projection, and to achieve energy efficiency, emissions intensity and/or sectoral mitigation targets as part of a new international agreement.

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Developing countries retort that, despite recent growth in their overall emissions, their per capita emissions are generally far lower than those in developed nations and that to make them pay more for cleaner energy sources while they are still trying to pull their citizens out of poverty would be unfair. They also argue that developed countries have greater capacity to reduce their emissions because of their superior financial and technological resources. But these arguments, intertwined as they are with questions of relative

economic development, readily expose the arbitrariness of the current binary distinction between developed and developing (Annex-I and non-Annex-I) countries for the purposes of allocating the mitigation burden. Mexico and South Korea, for example, are both now OECD members and Singapore has the world's seventh highest GDP per capita. None of them is an

Figure 5



Source: World Resources Institute, Climate Analysis Indicators Tool (Version 6.0, 2008).

* Data does not include emissions and removals from land-use and forestry.

Annex-I Party, yet the Ukraine, with a GDP per capita of \$5,500 – 93rd in the world – is.³² The three highest per capita emitters are Gulf countries with far higher per-capita levels of GDP than some Annex-I countries.³³ China, the world's largest gross emitter and home to more than 300 000 millionaires³⁴ (in US dollar terms) currently has the same obligations – or lack thereof – as Chad.

Frustrated with the arbitrariness of the current structural division between Annex-I and non-Annex-I countries, developed countries have made a number of proposals with a view to incorporating commitments from developing countries (particularly the large emitters) into a legally binding mitigation framework for the post-2012 period. A recent Australian proposal would allow greater flexibility among parties' commitments, so that countries could be recognised for the actual policies and measures they have in place, as well as pledging to meet quantifiable sectoral targets, targets for restraining emissions growth, or absolute reduction targets, as appropriate to their level of development and contribution to global emissions.³⁵ The proposal would enable each party to stipulate its chosen policies, measures and/or targets in a 'schedule of commitments' to be annexed to the treaty. The contents of countries' proposed schedules could then be scrutinised and compared with those of other countries,³⁶ and could be subject to different requirements for reporting, modes of verification and consequences for non-compliance – again, the extent of a country's obligations would depend on

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criteria such as its economic capacity and contribution to climate change. Other developed countries are sympathetic to the proposal, and many feel that it could help break the deadlock between developed and developing countries. However, many developing countries remain vehemently opposed to any attempts to undermine the existing 'firewall' between Annex-I and non-Annex-I countries.

A range of institutional mechanisms for incentivising developing country mitigation could also help reconcile the differences between developed and developing countries. Those presently under consideration include the expansion of international carbon trading markets to promote investment in developing country mitigation projects and the provision by developed countries and multilateral institutions of the finance, technology and expertise that developing countries need to build low-emitting power sources, help their industries become more energy efficient, and conserve their forests. Issues relating to these and other more technical aspects of mitigation are considered in the following section of the paper.

(b) Mitigation: specific issues, institutions and mechanisms

(i) Markets

In the lead-up to negotiations on the Kyoto Protocol, there was broad recognition of some of the problems associated with a climate change regime that is structured around individual national targets. It seemed not only that the least expensive abatement options would not be shared equally between developed countries (meaning different costs of compliance from country to country) but also that developing countries would not benefit from the actions of developed countries. Drawing on the experiences of a US program to manage emissions of nitrous and sulphur oxides from power stations associated with acid rain, parties accordingly agreed to develop 'flexibility mechanisms' to help developed countries meet their emission targets.

The Kyoto Protocol's flexibility mechanisms

The flexibility mechanisms agreed in Kyoto (sometimes called the Kyoto Mechanisms) established the basis for the international carbon market and are:

Clean Development Mechanism (CDM) – *this allows emissions reduction projects in developing countries to create credits that can be sold to developed countries and that count towards the developed countries' emissions targets;*

Joint Implementation (JI) – *similar to the CDM, but operating between developed countries only;*

International Emissions Trading – *this allows those countries that are below their Kyoto Protocol emissions levels to sell their 'surplus' emissions credits to other developed countries in order for the latter to meet their targets. (This is not to be confused with countries' domestic emissions trading systems, although international and domestic systems can be linked.)*

Any international agreement struck in Copenhagen or elsewhere is likely to continue the operation of carbon markets in some form, as many governments think these mechanisms have been successful in both reducing emissions and facilitating international cooperation (although some scholars, such as

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Professor Ross Garnaut, argue that the CDM needs to be reformed³⁷). There are currently nearly 2000 CDM projects that have already resulted in emissions savings equivalent to 330 million tonnes of carbon dioxide per year, or about 1% of global annual emissions.³⁸ The best estimate is that by the end of 2012, a total of 1.66 billion tonnes will have been abated – about three times Australia’s annual emissions.³⁹ Moreover, carbon markets are intended to provide benefits in both the developed and the developing world, enabling countries to access the least expensive abatement options available, and to channel investment and clean technology to poorer countries, helping them to develop sustainably. That carbon markets have managed to transcend the perennial developed/developing country divide suggests they are not likely to be abandoned.

There are three main issues regarding carbon markets – the CDM in particular – that are of interest in Copenhagen. First, the volume of proposals for new CDM projects is falling because there is little time to earn credits before the end of the Kyoto Protocol’s commitment period in 2012. There is therefore great interest in the negotiations providing – at the very least – a strong signal that this market will continue post-2012. Second, there is a desire to expand the categories of abatement activities that are recognised under the scheme. To date, the CDM has been focused on large infrastructure projects, but there are other ways emissions from developing countries could be abated – such as through broad scale energy efficiency measures – that could also be included in the CDM. There is also interest in incorporating more land-use and forestry activities in CDM projects. Finally, there is a desire to spread the benefits of CDM projects more widely than has occurred to date. Most CDM projects have been hosted in Asia, with some occurring in Latin America, whereas there has been very limited uptake in Africa and in the small island states of the Pacific and the Caribbean.⁴⁰

Given the entrenchment of the concept of carbon markets it is also likely that the other Kyoto Protocol mechanisms – joint implementation and international emissions trading – will be continued in a future agreement.

(ii) Technology transfer

For most developing countries, reducing greenhouse gas emissions is a much lower priority than rapidly growing their economies. New technologies that use energy more efficiently, produce lower emissions or are more resilient to climate variability can enable such countries to grow in a more climate-friendly way. A persistent theme of the climate change negotiations over the past 20 years has therefore been the drive to transfer such technologies from developed countries and deploy them in developing countries.

However, advanced technologies in developed countries are predominantly owned by private companies and tend to be costlier, more sophisticated and, ultimately, less accessible than their incumbent equivalents. The UNFCCC seeks to overcome this imbalance by requiring developed parties to facilitate and finance the transfer of clean technologies to developing countries,⁴¹ but cooperation in this area has been scarce. Accordingly, developing countries want stronger commitments from their developed counterparts at Copenhagen. Both sides agree that more must be done, but reaching agreement on

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'technology transfer', as it is known, will require them to overcome stark divisions about the best means of translating good intentions into practical results.

Developing countries have consistently argued that technology transfer requires either generous funding or the physical delivery of technology. But developed countries point out that they do not own the intellectual property rights to innovative technologies and that acquiring and then sharing these with developing countries is difficult. They also contend that technologies are being deployed in developing countries via private flows of foreign direct investment at a greater rate than government funding, drawn from limited national aid budgets, could ever hope to achieve. The CDM is often described as an effective means of transferring technology from the developed to the developing world. But its beneficiaries have tended to be countries that already have a strong industrial base; markets have been less effective at proliferating technologies beyond the thriving megacities of China and India.

There are several reasons why this is the case. A major concern among private investors is the inadequacy of intellectual property protections in many developing countries. Investors worry that if they transfer their technology, it will be reverse-engineered and then illegally reproduced. Other barriers prevalent in developing countries are said to impede technology transfer by adding to its cost and reducing the potential for its uptake. These include: tariffs and other trade restrictions; sovereign risk; a lack of information about the potential benefits of technologies; and subsidies and price controls for energy and fuel that are intended to support low-income communities but unintentionally inhibit the uptake of more efficient (but typically more expensive) technology. Developed country governments see themselves as having a role to play in helping developing countries to remove these structural barriers by fostering good governance, improving the rule of law, developing human capital, and undertaking other such 'capacity-building' measures. They argue that focusing on such 'enabling environments' will allow private investment and technology to flow more efficiently and to greater effect.

The differences in the preferred approaches of developed and developing countries have ensured that there has been little progress within the UNFCCC in moving beyond 'studies' to resolving implementation issues and actually accelerating technology transfer, particularly to the least developed countries. Numerous initiatives involving select groups of developed and developing countries have emerged with goals of developing and deploying specific technologies, and a multi-billion dollar Clean Technology Fund was set up by developed countries in 2008 with a similar aim.⁴² But discussions of the amount needed for technology transfer run from tens of billions of dollars upwards. Resolving this issue will require agreement as to an appropriate amount of investment and a mechanism that will actually distribute technologies to the countries and businesses that need them.

(iii) Land-use, forestry and agriculture

The earth's natural systems both emit greenhouse gases ('sources' of emissions) and remove them from the atmosphere ('removals' or 'sinks'). Through land-use changes and agricultural practices, humans have been influencing these natural systems for centuries. Emissions from the land sectors – categorised under the international climate regime under 'agriculture' and 'land use, land-use change and forestry'

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(LULUCF) – represent nearly one third of global emissions. LULUCF emissions are caused by such practices as converting forested land to agricultural land or to land for human settlements. Agriculture emissions come from disparate sources, including livestock, rice cultivation, savannah burning and the use of fertilisers.

Countries have the capacity to change the way they deal with lands, forests and agriculture, to either reduce emissions and/or increase removals of greenhouse gases from the atmosphere. This includes everything from legislation to prevent land clearing, to tax regimes that encourage forest planting, to regulation of the use of agricultural fertilisers. For countries with large land masses and vibrant agriculture and forestry sectors, the potential consequences of these policies are great.

Accordingly, it makes sense to cover these sources and removals of greenhouse gases within the international framework for emissions accounting, reporting and mitigation. However, because of the complexities involved in estimating the relevant amounts and in differentiating between natural events and those influenced by parties' policies and measures, accounting associated with meeting the Kyoto Protocol commitments only includes a subset of agriculture and LULUCF emissions and removals – those that are most easily measurable.

There is a general acceptance that a more complete accounting of countries' emissions and removals from agriculture and LULUCF would provide more accurate representations of countries' total net emissions. It would also encourage a wider range of abatement activities and ensure that innovative solutions to climate change – potentially including biochar, which takes carbon from the atmosphere and stores it in the soil – could be recognised. For some or all of these reasons, some countries are pushing to expand the accounting rules that would apply under any new treaty. Some developing countries worry, however, that the complexity of land sector accounting would allow developed countries to 'cook their books' in order to meet their targets.

The issues relating to the accounting of agriculture and LULUCF are exceedingly detailed, technical and complicated. But the wording of technical rules in these areas can matter hugely, making some countries' targets either much easier or harder to meet. A number of countries – including Australia, New Zealand and Canada – have previously indicated that their strong preference is to refrain from agreeing to any binding targets until the detailed rules are agreed and the effect of those rules can be assessed.

(iv) Reducing emissions from deforestation

Deforestation (destroying forests) is a particularly devastating form of land-use change which merits special attention within the international climate regime. Along with forest degradation (depleting, but not destroying forests), it is a major global problem in itself. Every day, between 30,000 and 70,000 football fields of forest are removed globally.⁴³ Deforestation in the world's tropical forests leads to extensive loss of biodiversity – up to 100 species of flora and fauna every day.⁴⁴ Unsustainable exploitation of forests also places many local communities at greater risk of poverty. These activities

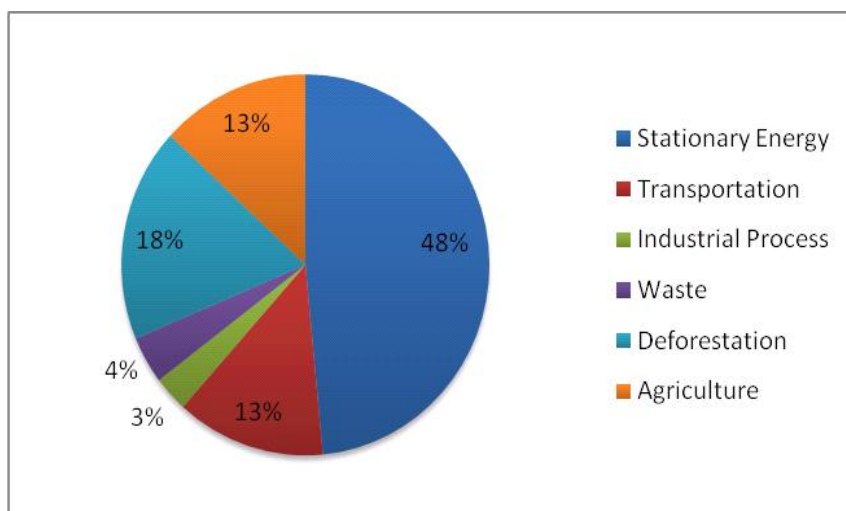
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occur because of demand for timber, desire for more agricultural land, the drive to produce biofuels and overgrazing.

Deforestation and degradation also adversely affect the Earth's natural carbon cycle. Forests sequester carbon from the atmosphere as they grow, store it (sometimes for centuries) and release it when they are harvested or die.

Accordingly, deforestation and degradation also contribute greatly to climate change, directly accounting for about 18% of annual emissions – more than the emissions from all forms of transportation.⁴⁵ Reducing emissions from deforestation and degradation in developing countries, known simply as 'REDD', is therefore an essential component of an effective global solution to climate change.

Figure 6: Global greenhouse gas emissions by economic sector



Source: UNEP/WRI, *World greenhouse gas emissions by sector*, 2005.

The importance of reaching an agreement on REDD at Copenhagen should not be underestimated. Not only are emissions from deforestation in tropical developing countries globally significant, but there is currently no mechanism in the international climate change regime to either encourage or compel action to reduce them. Additionally, including REDD in an agreement is a paramount objective for nearly 40 countries – the forested countries of Latin America, the Congo Basin, and Southern and Southeast Asia (particularly Indonesia and Papua New Guinea).

The main proposal is to include REDD in a carbon market: pay landowners or governments for emissions reduction credits reflecting the carbon stored in forests that would otherwise be cut down or degraded. Virtually all of the forested developing countries and many developed countries, including Australia, support this proposal. Their argument is that a tonne of emissions saved by curbing deforestation is no different from a tonne saved by, say, burning less coal – and the former is much cheaper than the latter. However, Brazil, a number of AOSIS countries, and some European countries publicly worry that including REDD in a carbon mechanism would allow developed countries to meet their mitigation obligations with cheap credits instead of seriously cutting emissions themselves. Indeed, when the Rudd Government changed the upper bound of its 2020 target range from 15% to 25%, it indicated that direct government purchases of REDD credits from developing countries could contribute up to half of the additional 10% in emissions reductions.⁴⁶ Under the climate bill passed by the US

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House of Representatives in June, an additional amount of up to 10% of 2005 US emissions could be achieved by 2020 through US investment in developing country REDD projects.⁴⁷

There is also concern that the inherent complexities in REDD could result in claimed emissions reductions not actually occurring. Poorly defined property rights, insecure land tenure systems, inadequate data collection, corruption and ineffective enforcement mechanisms are just some of the problems that make REDD policies difficult to implement in many developing countries. Without improvements in these areas of governance and policy, the mitigation benefits of REDD schemes could easily be undermined by problems of leakage (if you pay to protect a forest in one place, how can you be sure another area is not deforested instead?), permanence (if you pay to protect a forest this year, how can you be sure it will not be cut down next year?) and baselines (how can you be sure a forest would have been degraded or cut down in the absence of financial incentives to protect it?). REDD policies could also hurt local landowners and indigenous groups while the associated financial benefits flow to corrupt officials.⁴⁸ As the inclusion of REDD within a carbon market would effectively allow developed countries to emit more themselves, a poorly designed REDD mechanism could end up *increasing* global emissions at great economic, environmental and social cost.

There are certain national interests that must also be accommodated in order to reach agreement. The Rainforest Coalition (a group of 40 developing countries ostensibly led by PNG) wants to progress with market arrangements without delay. India contends that it should be able to sell credits for all of the carbon locked up in its forests for conservation purposes. Congo Basin countries want international support to ensure deforestation does not become a more significant issue for them in the future. Brazil has suggested an alternative approach to that of a REDD-inclusive carbon market, but it has generally acted to slow down negotiations on this issue.⁴⁹ It is likely that Brazil wants to offer emissions reductions from deforestation as a contribution towards its own recently announced target for reducing emissions, rather than selling credits for doing so on an international market (which would not count towards its own national effort). Because it has extremely high deforestation emissions and vast areas of forest, Brazil's assent to any REDD proposal will be essential.

(v) International bunker fuels

The combustion of fuels used in international aviation and shipping, known as 'bunker fuels', currently accounts for less than 5% of global greenhouse gas emissions, though this proportion is expected to grow sharply to as much as 15% of global emissions by 2050.⁵⁰ Yet these emissions are currently excluded from the international climate regime: they don't count towards any country's national targets and there are no international policy measures directed at seriously reducing them. By the time the Kyoto negotiators got to the issue of accounting for bunker fuels, there was not enough time for it to be resolved. Despite ongoing negotiations over the past decade in the International Maritime Organization (IMO) and the International Civil Aviation Organization (ICAO), there has been little real progress since then.

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The difficulty of reaching agreement on bunker fuel emissions stems from the transnational nature of the activities that produce them: the emissions from international flights and maritime voyages are produced in multiple jurisdictions, so they cannot readily be attributed to any single country. A logical solution, and one that is favoured by numerous developed countries, would be to regulate (ie. monitor, account for and impose measures to reduce) bunker emissions at the international level at which they occur, rather than in individual countries. For example, instead of countries levying their own domestic carbon taxes on international aviation and shipping, a single, universal levy could be agreed, collected and deposited with an international body. Under such a system, the costs and effects would be felt by all countries in proportion to the volume of international air and shipping traffic for which they are responsible, not merely by developed countries. Adamant that only developed countries should bear the burden of such costly mitigation measures, however, developing countries mostly reject this approach.

Developing countries accordingly favour a model that tries to mould bunker emissions into the existing, country-level mitigation and greenhouse accounting framework, such that only developed country governments would take responsibility for measuring and reducing emissions from their ships and airplanes. Many developed countries worry that such an approach would put their airlines and shipping companies at a competitive disadvantage vis-a-vis their unaffected developing country counterparts. They observe, moreover, that the technology used (for aviation it is really only provided by Boeing or Airbus) is common to all countries, so it would be easy for their companies to reflag ships and to change the corporate domicile of airlines to avoid any emissions liabilities. The result, they argue, would be a financial windfall for developing countries with no environmental benefit.

Proponents of the international approach argue that revenue from any internationally-levied taxes could be redistributed in a way that offsets the economic losses (eg. losses related to tourism and business) in developing countries, or be used to help poor countries adapt to climate change. In this way, an international mechanism could address the redistributive concerns of developing countries as well as the economic and environmental concerns of developed countries. However, developing countries are yet to be convinced.

In any event, oil-producing countries reject any approach that would increase the cost of fuel or otherwise discourage international aviation and shipping, because all such measures would shrink the market for their fuel exports (see the section on impact of response measures, below).

(vi) Monitoring, compliance and institutions

Countries will also need to negotiate the institutional and governance arrangements for tracking emissions, facilitating cooperation between countries and ensuring that parties comply with their legally binding commitments – especially financial and technological assistance from the developed to the developing world.

An elaborate monitoring, reporting and verification system already exists under the Convention and the Kyoto Protocol and most developed countries have had considerable experience in complying with the

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international reporting requirements. Any future agreement is therefore likely to build upon the existing mechanisms. Developing countries, however, have had less experience with such requirements as they are bound by less onerous reporting obligations under the current treaties. Developed countries are therefore concerned about the extent to which developing country mitigation commitments under a new treaty will be monitored, reported and verified. For some developed countries, including Australia and the United States, more regular, comprehensive and accurate inventory reporting from developing countries is an essential element of a deal at Copenhagen. The recent US-China bilateral pact on energy cooperation, under which US regulators will assist China to improve the accuracy of its greenhouse gas emissions inventories, will help in this regard.

Developed countries are particularly keen to ensure that any financial and technological support they provide will be applied transparently towards projects that achieve genuine emissions reductions. They have accordingly proposed that, at a minimum, projects receiving such support should be subject to international scrutiny. Many developing countries are wary about international intrusion in their domestic activities; they are more concerned that international institutions guarantee the supplies of funding and technology needed to undertake emissions reduction projects. Ultimately, institutional mechanisms will need to be established to match proposed projects with pledged assistance and to provide the investment and abatement certainty needed to mollify all parties' concerns. Without these, it will be difficult to encourage mitigation by developing countries or investment by developed countries.

There is also disagreement about the appropriate institutional arrangements for ensuring that countries comply with their mitigation obligations. One of the weaknesses of international law is that countries generally don't like to establish powerful institutions to enforce their international commitments. This problem is particularly acute in the climate change field, where countries' track records of meeting their obligations are generally poor.⁵¹ Some states have proposed that new institutional structures be established with the power to apply penalties – such as pecuniary fines – to states that fail to meet their agreed targets. However, developed countries have expressed a preference for utilising existing (largely ineffective) compliance procedures established under Kyoto.

(c) Adaptation

Because greenhouse gases linger in the atmosphere for decades, the actions countries agree upon to reduce current and future emissions will at best avoid only the very worst effects of climate change in a few decades' time. Meanwhile, the destructive consequences of climate change are already being felt around the world, from sea level rise to more extreme weather conditions, and these effects are worsening.⁵² Cooperation on adapting to them is therefore another key objective of international climate change talks.

Of its nature, adaptation poses a number of unique challenges. The international community has been developing a common language and methodologies for mitigating climate change since the early 1990s – efforts to compare and reduce emissions of various greenhouse gases, for example, have been aided

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through the development of a common metric, 'global warming potential'. However, a similar capacity to evaluate climate impacts does not exist. Further, while it effectively does not matter where the sources of greenhouse gas emissions are located, adaptation is made harder by the fact that climate change affects different regions and communities in different ways, depending on a wide range of localised factors.

Existing instruments impose significant (but unquantifiable) adaptation obligations on parties.⁵³ However, to the extent that countries and communities have been adapting to climate change, they have done so in an ad hoc, sometimes experimental and almost always piecemeal fashion – with more or less success. Despite this, many regions and countries face similar adaptation challenges, suggesting countries could manage adaptation in a more systematic and coordinated way, for example through reporting 'lessons learned' and through sharing risks. One risk-sharing mechanism proposed by AOSIS is the establishment of an insurance mechanism whereby countries at high levels of risk from climate change (particularly small island developing countries) would have reassurance that financial support would be available in the event of a natural disaster such as a major cyclone.

Because the effects of climate change are particularly devastating in poor countries, adaptation is increasingly being seen as a challenge for the development community. If donors do not consider the effects of climate change on aid projects, their investments will increasingly be undermined by changing conditions and it will be harder to meet the Millennium Development Goals.

(d) Financing for developing country adaptation and mitigation

If the practical imperatives of adaptation make it important, the costs make it controversial. Developing countries, adamant that they have contributed little to the historical emissions that have caused the changes to which they must now adapt, have long demanded that developed countries pay the costs of their adaptation measures. The poorest and most vulnerable countries have an even greater claim to assistance from developed countries, as they typically lack the resources, infrastructure and skills needed to adapt effectively. A number of funding obligations⁵⁴ and arrangements have been established to address these longstanding grievances, including the UNFCCC's financial mechanism (operated by the Global Environment Facility), the new funds created by the parties at COP-7 in Marrakesh (including the Kyoto Protocol's Adaptation Fund) and other multilateral channels (including those established by the World Bank in 2008⁵⁵). These funding streams are supplemented by traditional bilateral aid programs and some private sector initiatives. Despite these developments, existing funding levels and institutional mechanisms are woefully inadequate to meet the costs and challenges of adaptation in the developing world.

Consistent with developed countries' differentiated responsibilities, there is an expectation that they will also help to finance mitigation projects in developing countries, at least to the extent these are costlier than less efficient alternatives that would otherwise have been adopted. Now that developed countries expect developing countries to take on binding mitigation obligations, the expectation of assistance is

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far greater. Yet existing financial flows and mechanisms are inadequate to this task, too. Accordingly, the head of the UNFCCC Secretariat, Yvo de Boer, has long stated that redressing deficiencies in the financing of developing country adaptation and mitigation, along with the associated financial governance arrangements, constitute two of the four 'essentials' around which an international deal must be structured.⁵⁶

Developing countries are calling for developed parties immediately to disburse 'new and additional' funding to meet adaptation and mitigation costs in the developing world – crudely estimated at more than US\$50-100 billion per year for adaptation,⁵⁷ and more than US\$300 billion including mitigation as well.⁵⁸ The G77 and China group has called for developed countries to invest 1% of their annual GDP for these purposes. Developing countries favour sources and institutional mechanisms that provide stable and predictable flows of funds – namely guaranteed public grants from developed countries – that can be accessed easily and with minimal conditions. Some developing countries are also pushing for additional sources of finance to be derived from levies on carbon market transactions, taxes on international transport and fines for non-compliance with mitigation targets. Especially vulnerable countries, such as low-lying island countries and the least developed countries, also seek priority access to any adaptation funds that are forthcoming and are particularly critical of burdensome application procedures.⁵⁹

While developed countries accept the principle that they must support poorer countries in their efforts to mitigate and adapt to climate change, they tend to disagree about the level of funding that should be committed, the sources of that funding, and the institutional arrangements by which it should be distributed. Developed countries have sought to lower the high expectations of some G77 countries about the level of financing to which they can commit, with some citing the fact that their budgetary conditions have deteriorated as a result of the financial crisis,⁶⁰ but there is no developed world consensus on the amount needed. Developed countries increasingly emphasise the role of the private sector in providing finance, though proposals to tax commercial activities such as international air and shipping transport have also met with resistance from some developed countries representing industries that would be adversely affected by such measures. Eager to ensure that the funding they do provide supports projects of genuine benefit to poor communities or that genuinely reduce emissions, developed countries emphasise the need for transparent, well-governed financial institutions.

(e) Impact of response measures

Taking international action to reduce emissions – particularly through efforts to increase efficiency and reduce the use of fossil fuels – inevitably creates winners and losers. Some developing countries, especially oil exporters, are heavily reliant on income generated from fossil-fuels; unless they diversify, they will lose out in the shift to a lower-carbon world. While issues of economic dislocation resulting from policy choices are generally dealt with by governments internally, this issue has always been understood and addressed within the context of the international climate regime.

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The UNFCCC and Kyoto Protocol both acknowledge that measures taken in response to climate change would hurt some (primarily OPEC) countries.⁶¹ They also require developed countries to help adversely affected countries to diversify their economies. However, there has been little to no action on this issue following Kyoto – many countries undoubtedly believe that, given the incomes generated from oil exports, affected countries have the capacity to look after their own interests. Developed countries are also concerned about how their citizens would respond if they started funding OPEC countries for the oil they did *not* sell because of action to limit climate change. Oil-exporting countries complain bitterly about the lack of movement on this issue, and in retaliation have blocked progress on bunker fuel negotiations.

In negotiations leading up to Copenhagen there have been discussions about whether this issue, known as 'impact of response measures' or 'spillover effects', should be incorporated into the concept of adaptation. Oil-exporting countries defend this approach on the basis that dealing with the impact of response measures is similar to adapting to the impacts of climate change itself. By couching their interests in terms of adaptation, these countries are positioning themselves to benefit from the substantial funding likely to be allocated to support adaptation action. Developed countries and many developing countries – particularly small island developing states, African countries, and the least developed countries that are particularly exposed to the effects of climate change – do not share this view.

(f) Legal form of a new agreement

As if wrangling over the substance of a new climate agreement was not causing enough diplomatic headaches, there is also vigorous disagreement over the legal form that such an agreement might take and the process that will underpin its negotiation. Parties differ as to the form a new international framework should take. Keen to entrench the existing distinction that mandates emissions cuts for Annex-I parties while imposing no quantifiable obligations on non-Annex-I parties, developing countries prefer an agreement to extend the Kyoto Protocol beyond 2012, albeit with new targets for Annex-I countries (including the United States). Under this approach, any residual matters would be left to be addressed through formal 'decisions' by the COP or captured in a new, separate treaty. Developed countries, eager to move away from the limitations and rigidity of the Kyoto Protocol, prefer a single instrument that integrates all issues and consistently addresses the actions of all parties.

When the parties met in Bali in 2007 to formulate a 'road-map' for negotiating a post-2012 agreement, they decided to conduct negotiations via two separate negotiating 'tracks'. In addition to the existing Ad Hoc Working Group that had been established to negotiate new post-2012 commitments for developed countries under the Kyoto Protocol, a new Ad Hoc Working Group was established under the Convention to negotiate a broader suite of issues relating to the post-2012 agenda, including mitigation commitments for developed *and* developing countries.⁶² While the work of each group has informed that of the other, many hope that the two tracks will merge into a single, larger negotiating

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forum at Copenhagen. If this does not occur, the dual-track negotiating structure may lead to the establishment of two instruments: an amended Kyoto Protocol and a new treaty under the Convention.

3. PROCESS OF THE NEGOTIATIONS

(a) Procedural issues

The Copenhagen conference is no ad hoc get-together of world leaders: it is a structured, multilateral Conference of the Parties to the UNFCCC that operates in accordance with both formal rules and informal norms of practice that have evolved over time. Negotiations take place in a combination of large, formal assemblies of all parties – called 'plenary sessions' or simply 'plenaries' – and less formal, closed-door meetings among smaller groups of countries.

Aside from the complexity of the substantive issues under discussion, several features of the UNFCCC negotiating process render the daunting task of reaching agreement among 192 nations even more arduous.

First, negotiators must discuss and agree on every single word of treaty text. In the small group negotiations, the text is displayed on a screen and negotiators propose additions, deletions and amendments. Typically, parties initially add text covering their issues and indicate that large amounts of other text are not acceptable. Then parties work to find areas of agreement and settle the easier paragraphs, in order to highlight the truly contentious issues. If the negotiation is successful, an agreement is reached that resolves all parties' aims. Sometimes this involves the chair or a party suggesting a new approach to address thorny issues. Alternatively – and this will happen at Copenhagen – text is forwarded to the plenary, with the main issues unresolved, to be settled as part of a high-level bargain between countries as they horse-trade on key issues.

Secondly, as the UNFCCC has never agreed rules of procedure, every decision must be agreed by consensus. Consensus does not mean that every party agrees with a decision, rather there must be no objections. Creative COP presidents (who chair the main plenary) have in the past been crafty in the way they have presented issues and run their meetings. While parties need to have an opportunity to object, they also have a responsibility to do so promptly and before the gavel falls and agreement on an issue is formally announced.

Another factor that influences the negotiations is physical exhaustion. Many diplomats regard climate change negotiations to be unusually demanding, even compared with other multilateral negotiations. By the second week of the negotiations, ministers and key negotiators will be getting very little sleep, and by the end of the conference, negotiations will likely have been going non-stop for 36 hours or more. This does force individuals to focus on the issues that really matter to their countries, however sheer

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exhaustion can also lead to poor decision-making, as well as to legal text that is cumbersome and incomprehensible.

(b) The timetable at Copenhagen

Broadly, negotiations at Copenhagen will likely follow a pattern familiar from previous COPs. The key steps in the process will likely be as follows:

- Several days before the negotiations formally commence there will be both formal meetings on specific issues between parties and closed meetings of negotiating blocs to fine-tune positions and respond to the latest intelligence.
- The first two days will contain a mix of ceremonial fanfare (formally launching the conference), administrative discussions (agreeing the agenda and organising the work schedule) and substantive grandstanding (introductory statements by countries in large plenary meetings with several thousand participants).
- Typically, by the second day, the subsidiary bodies will have their opening plenaries – with up to 1500 people present – involving a similar mix of ceremony, process and substance of an introductory nature. In Copenhagen, however, this step may be skipped or truncated. The current agreement is that the permanent subsidiary bodies will meet in the first week, and ad hoc working groups will meet until midway through the second week. It is also possible that a 'Committee of the Whole' may be formed through which all issues are addressed.
- Regardless of the structure of meetings for the subsidiary bodies, by Wednesday 9 December, small group negotiations will commence. Typically, these will be closed meetings. Dozens of different types of these groups will be formed (including 'contact groups', 'informals', 'informal informals', 'friends of the chair' and 'friends of the president') resulting in literally hundreds of negotiating meetings (not counting the truly informal negotiations that happen over a quiet cup of coffee or glass of wine). Small group negotiations will continue until no later than Tuesday 15 December.
- On Monday 14 and Tuesday 15 December, large plenary meetings will be held to agree formally to any issue that has been tentatively agreed in small group negotiations.
- Typically, ministers arrive and become engaged on the Tuesday or Wednesday of the second week (15 to 16 December). However, given the importance of the Copenhagen meeting, the current expectation is that ministers will arrive and begin working on the weekend of 12 and 13 December. The ministerial segment will not conclude until the COP ends. While there will be public statements by countries, the real work of the negotiations will happen in increasingly small ministerial meetings as the week draws to a close.
- Unusually, a large number of prominent political leaders and heads of state will be attending the negotiations in Copenhagen. They will likely arrive after ministers and can be expected to be engaged in even higher level negotiations as the conference comes to an end.
- While the COP is scheduled to conclude on Friday 18 December, it is virtually inconceivable that it will do so. Negotiations in Bali and Kyoto did not conclude until well into the weekend.

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- Copenhagen will conclude when there is a closing plenary that has formally endorsed all elements of the agreement and countries have had an opportunity to express their views on the proceedings. Closing plenaries tend to be long, fraught affairs and are, even at the best of times, the source of much drama. With so much at stake, the closing plenary at Copenhagen will be one to remember.

Additionally, many groups – especially businesses and NGOs – hold information sessions, PR stunts, and other 'side events' during each COP. Often these are a deliberate attempt to pressure parties to shift their positions. A well-established example of this is the 'Fossil-of-the-Day Award', which is granted by the Climate Action Network to those parties which they think have done the most to prevent an environmentally effective outcome. While many of these sorts of events make great press – particularly during the periodic media vacuums that persist when the real action is occurring behind closed doors – they have virtually no influence on parties' negotiating positions, which are agreed before the conference commences.

4. RECENT DEVELOPMENTS, LIKELY OUTCOMES AND IMPLICATIONS FOR AUSTRALIA

(a) Recent developments – inside and outside the negotiating room

An increasingly wide range of countries have demonstrated their desire to reach a comprehensive and effective outcome at Copenhagen. As at the time of publication, however, no significant elements of a potential treaty have been formally agreed. This is not a surprise, as countries horse-trade between issues and early agreement on some topics would limit the potential for last-minute deals – 'nothing is agreed until everything is agreed', goes an old UNFCCC truism.

Formal negotiations on a post-2012 climate agreement have been proceeding in earnest since the Bali 'Roadmap' was agreed in late 2007. In the months leading up to Copenhagen, there have been numerous formal negotiating sessions at which delegates have put forward their countries' proposals on all of the issues, and the arduous process of whittling these down to a narrower set of options has ground on.

In recent negotiating sessions in Bangkok and Barcelona, some progress was made on some of the more technical issues on the agenda – including accounting rules for the land sector and forestry, technology transfer, capacity-building and adaptation – as disparate proposals were consolidated and previously divergent positions began to converge. But the perennial developed-developing divide was as wide as ever on the key issues of developed country targets, developing country mitigation and finance.

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(i) Developed country targets: America to the rescue?

Developing countries remain frustrated at what they perceive to be insufficiently ambitious 2020 emissions reduction targets pledged by developed countries. This frustration took a dramatic turn at the November meetings in Barcelona, when African countries walked out of the negotiations, refusing to participate until this issue was settled, forcing the temporary suspension of a series of meetings on more technical issues. The continuing refusal of the US delegation to outline any targets has particularly angered developing country delegates.

The US role will indeed be critical to the success or otherwise of the Copenhagen negotiations, although the current tactics of the US delegation must be understood in the context of domestic political developments. While the Obama administration is free to take any position it wishes in the negotiations, including pledging any targets that it sees fit, it has long maintained that its position on mitigation targets will reflect the content of domestic cap-and-trade legislation, which is still making its way through Congress. The administration is reluctant to pre-empt the outcome of the congressional process because only the Congress has the power to legislate comprehensive, economy-wide measures to reduce US emissions and, under the US Constitution, the ratification of an international treaty requires the consent of two-thirds of the Senate.

At the time of publication, the Kerry-Boxer cap-and-trade bill is still making its way through the US Senate and is being scrutinised and marked-up by the various Senate Committees with jurisdiction over aspects of the comprehensive bill. As presently drafted, that bill would put a cap on US greenhouse gas emissions from certain sectors of the economy of 20% below 2005 levels by 2020 and would establish a market-based system for trading in emissions entitlements. Like the bill passed by the House of Representatives in June (which would impose a 17% reduction through the cap-and-trade mechanism), the Senate bill contains a range of other measures applying to uncapped sectors that would reduce US emissions further below that level – potentially resulting in US reductions of up to 34% below 2005 levels by 2020.⁶³ Getting the 60 Senate votes needed to pass the bill was always going to be difficult, with most Republicans outright opposed to cap-and-trade and a large swathe of conservative democrats from industrial swing states nervous about the impact of the bill on their states' economies. Prospects have brightened in recent weeks thanks to a bipartisan push by Senators John Kerry and Lindsey Graham to reach a compromise on key issues.

However, a floor vote of the full Senate, and all of the lobbying, horse-trading and wrangling that that will entail, is not expected to be held until early 2010 – after Copenhagen. Even once the Senate bill is passed, it will need to be reconciled with the House bill and voted on anew by both houses before it can be sent to the president for signature into law. As a result, the full extent of US mitigation commitments is not likely to be known at Copenhagen. This means a comprehensive deal may not eventuate, but it does not necessarily mean that the US delegation will go to Copenhagen empty-handed, or that the conference will be a total failure. The administration has already taken executive steps to reduce US emissions, via the US EPA's existing mandate to regulate air pollution, including improving fuel economy standards for US vehicles and announcing new rules to require the use of efficient technologies

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in large, high-emitting stationary sources in the power and industrial sectors. While these measures would not add up to the potential reductions under comprehensive cap-and-trade legislation, they would allow the US delegation to propose at least minimum reduction targets, with the potential to revise these pending the outcome of the bills before Congress. What we are likely to see in Copenhagen, then, is a US delegation that is engaged and constructive, and that may begin to play its cards on targets, despite the fact that Congress still holds most of the deck.

Nonetheless, without final 'numbers' from the Americans, most other developed countries will probably refrain from agreeing to anything more than a range of targets, as many have done already. In most cases, countries have specified that they will only settle on the upper bounds of their announced target ranges if other developed countries take comparable steps and if major developing emitters also make quantifiable commitments. But developing countries will not budge if developed countries resist pledging firm targets. In other words, US targets hold the key to unlocking more ambitious levels of mitigation.

(ii) Developing country mitigation commitments: substance, not form

During the recent pre-negotiations in Bangkok and Barcelona, a more fundamental debate about the legal form and structure of any new agreement proved even more divisive than the discussions on the quantities of developed country targets. Discussions on the proposals by developed countries to incorporate developing country mitigation commitments into a new treaty and to streamline the negotiating process accordingly provoked furious reactions in Bangkok. Developing countries, who remain staunchly wedded to the absolute division between developed and developing countries entrenched in the Kyoto Protocol, alleged that the developed world was trying to 'murder' the Kyoto Protocol, revealing a deep sense of mistrust between parties and reopening old wounds about 'common but differentiated responsibilities'.⁶⁴

The refusal by developing countries to countenance any dismantling of the 'firewall' between Annex-I and non-Annex-I countries seems somewhat incongruous, however, in the context of the past 12 months, in which key developing countries have begun to take precisely the sorts of domestic mitigation measures (including, in some cases, quantifiable targets) that developed countries are asking of them. Developing countries, as well as recognising that they have the most to lose from unmitigated climate change, have begun to see the benefits of 'going green', from enhanced energy security to reduced environmental pollution, greater economic competitiveness, and an improved international reputation.⁶⁵

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China is investing heavily in renewable energy technologies and implementing a plethora of plans and policies to curb the energy intensity of its economy.⁶⁶ The Chinese government adopted energy efficiency targets for its

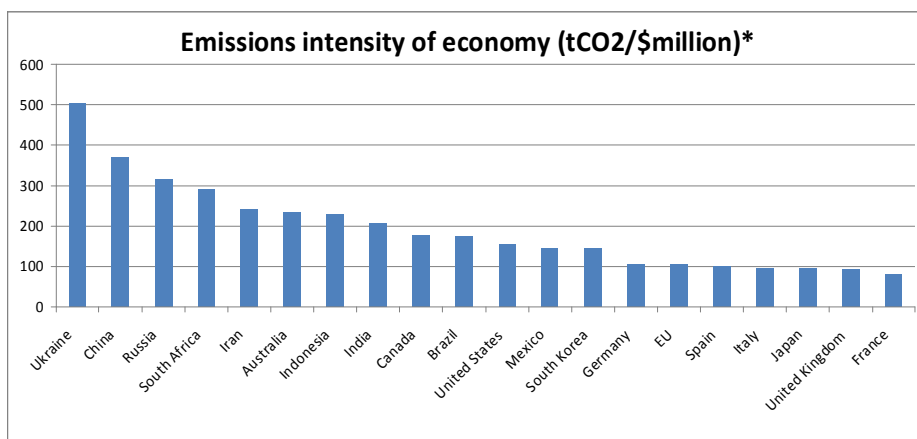
current five-year plan, which are likely to be increased from 2011 and, in September this year, President Hu Jintao publicly recognised that China will need to reduce the emissions intensity of its economy.⁶⁷

Chinese scholars now openly debate the appropriate

years in which China's emissions should 'peak'.⁶⁸ Government officials have also received a near-constant stream of high-level Obama administration officials in Beijing throughout 2009 for discussions on the contents of an international deal and on the expansion of practical, bilateral cooperation on clean energy technology and energy efficiency. This bilateral cooperation was extended during President Obama's visit to Beijing in mid-November.⁶⁹

India is rapidly expanding its investment in renewable energy⁷⁰ and its environment minister has reversed his country's traditional hostility toward international commitments by expressing a newfound openness to quantifiable targets and international verification of its mitigation measures (although he was pilloried at home for doing so).⁷¹ Indonesia has pledged to reduce its emissions from deforestation by 26% below business-as-usual levels by 2020, which it says could be expanded to 41% with international assistance.⁷² South Korea adopted the world's 'greenest' economic stimulus package⁷³ and has pledged to reduce its emissions 'voluntarily' by 30% below business-as-usual levels by 2020 – the equivalent of a 4% reduction below 2005 levels over the same timeframe.⁷⁴ Brazil is taking steps toward reducing its deforestation rates by 70% below the 1996-2005 average by 2017,⁷⁵ and recently pledged to reduce its economy-wide emissions to 1994 levels by 2020 – a projected cut of 36-39% below business-as-usual levels.⁷⁶ Mexico is planning to reduce emissions from high-emitting sectors of its economy over the next decade,⁷⁷ and South Africa has set a target to cap emissions by 2020-25.⁷⁸

In substance, developing countries are beginning to play a real part in meeting the mitigation challenge and, at one level, their actions have raised substantially the prospects of a viable international deal. It is the formalisation of such commitments in an international agreement that they resist – for a mix of legal, reputational and cultural reasons. They fear that by expressing their commitments and goals in a



Source: World Resources Institute, Climate Analysis Indicators Tool (Version 6.0, 2008).

* Emissions intensity shows the amount of emissions it takes a country to produce \$1 million of economic output. Emissions include CO2 and, where available, other greenhouse gases (measured in tonnes).

Economic output is expressed in millions of international dollars of GDP using ppp and 2005 as the base year.

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legally binding form, they will face legal sanctions if they do not comply, which could have material consequences and tarnish their international image. They also worry that such obligations may be the thin end of the wedge, as relatively mild obligations may become onerous ones. Jealous guardians of their sovereignty, G77 countries also balk at the notion of international monitoring and verification of their policies, which they regard as an intrusion in their internal affairs. Finally, some developing countries simply object to taking on formal commitments on principle: they see it as a departure from the established norms, enshrined in the UNFCCC and in Kyoto, by which only developed countries have quantified mitigation obligations.

There is some reason to be hopeful, however. The high-level dynamic of the leaders' meeting at Copenhagen could provide an opportunity to break the impasse. Korea and Mexico could also play a crucial role. Due to their non-alignment with either the G77 or the developed countries and their openness to adopting quantifiable mitigation goals, they could help to breach the firewall by agreeing to take on binding commitments, which would put further pressure on the G77 and China. The test will be whether their engagement spurs a few politically important developing countries like South Africa to make more stringent commitments. If this happens, a deal could begin to emerge.

(iii) Will the dollars flow?

A consensus among developed countries is beginning to emerge that the scale of financing that is needed to fund adaptation and mitigation measures in the developing world will be far higher than current arrangements. European heads of government agreed in October that €100 billion per year by 2020 would be required and suggested that €22-50 billion of that amount should come from public sources and the rest from other sources such as private investment.⁷⁹ This plan is similar to one articulated in June this year by British Prime Minister Gordon Brown, which suggested the establishment of a fund totalling US\$100 billion per year by 2020, into which all countries but the poorest would contribute (according to a formula based on national emissions and ability to pay) and from which developing countries could draw adaptation finances based on vulnerability and need.⁸⁰

These are all steps in the right direction, but there were high hopes that developed countries would actually put some money on the table before Copenhagen. Hot on the heels of September's UN climate summit in New York, it was expected by many that the leaders of the G-20 would make some specific financial commitments during their meeting in Pittsburgh. The issue was shunted down the agenda, however, and was ultimately left for G-20 finance ministers to resolve in November – but they also failed to reach agreement. If there was one development that could have really boosted momentum and built confidence about the desire to reach an agreement in Copenhagen, this would have been it. Alas, just days out from the conference, the table remains bare. Unless countries agree to postpone financing discussions until 2010, as suggested by the Danish Prime Minister, or there are some dramatic last-minute developments, this will become yet another sticking-point in Copenhagen.

COMPREHENDING COPENHAGEN**(b) Four possible outcomes**

These recent developments have set the stage for Copenhagen, but predicting the contents of the final act is difficult due to the high number of variables involved. Broadly speaking, there are four possible scenarios for the conclusion of the negotiations, in descending order from most to least substantial.

(i) Scenario I: a comprehensive agreement with detailed rules

Going into the Kyoto conference, the draft negotiating text was a mere 30 pages. In contrast, the Copenhagen draft text currently stands at over 180 pages and contains nearly 2000 square brackets indicating points of disagreement. Given the sheer number of issues that remain unresolved, the depth of continued divisions between developed and developing countries over key issues, and the improbability of the US Senate's passing the Kerry-Boxer cap-and-trade bill by the time of Copenhagen, the chances of producing a comprehensive agreement with detailed rules by the end of the conference are extremely slim. A growing chorus of world leaders has expressed opinions to this effect in recent weeks, giving voice to that which many government officials have known for some time, but which few dared utter.

Not all countries have given up the fight for a comprehensive solution, however. In early November, France and Brazil announced that they had a plan for an agreement that they thought was achievable at Copenhagen.⁸¹ Given that this plan coincided with Brazil's announcement that it would voluntarily pursue a challenging emissions reduction target, it demonstrates that there remains real desire to produce a final agreement in Copenhagen. The desire of some, however, is quite different from the agreement of all.

(ii) Scenario II: a political framework with minimal detail

Despite the improbability of a detailed agreement, the concerted engagement by the United States and the constructive contributions from key developing countries over the past year have generated political momentum that all parties are likely to want to sustain, particularly if the prospects of US action in early 2010 are still looking good come December.

The most likely scenario, therefore, entails countries agreeing to a set of principles and goals that lacks final numbers (but may include provisional numbers, ranges of numbers or aggregate numbers), possibly expressed in the form of a formal decision or series of decisions by the COP. Such an outcome could include a timetable and work program for further negotiations to develop a treaty, akin to the 1995 Berlin Mandate (which set the basis for the Kyoto Protocol negotiations).

A plan to this effect was outlined by Danish Prime Minister Lars Loekke Rasmussen to leaders at the recent APEC leaders' meeting in Singapore and was supported by President Obama. Mr Rasmussen proposed postponing decisions on contentious issues such as emissions targets and financing, urging leaders instead to focus on reaching a political agreement on less contentious issues with a view to

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reconvening in mid or late 2010, after the US Senate is hoped to have passed its climate legislation, to settle the thornier issues.⁸²

(iii) Scenario III: a 'greenwash' agreement

A third possible outcome is that countries fail to make significant progress but paper over their differences and spin their way to a 'successful' outcome with a triumphant end-of-session press conference. Countries would agree to a statement that they are gravely concerned about the problem of climate change and will act accordingly, but that would provide no certainty that meaningful action would really occur. The danger with this type of outcome is that, by creating the appearance of success, public interest fades after Copenhagen and momentum towards a real agreement abates.

(iv) Scenario IV: a dramatic failure

There is a real chance that countries will refuse to compromise and the discussions at Copenhagen will end without any kind of agreement. A number of countries – particularly vulnerable developing nations with a lot to lose if climate change is not adequately addressed – have indicated that they would rather the negotiations fail spectacularly than produce a greenwash agreement. Such an outcome could breed ultimate success, so the thinking goes: provided that the conflicts between countries are reconcilable, such public failure could increase the political pressure to resolve them, rendering an eventual agreement more likely.

If Copenhagen fails, and negotiations are unsuccessful through 2010, it is likely that at least some of the issues would migrate to other international forums. LULUCF and REDD issues, for example, could be addressed within UN Food and Agriculture Organization processes, while bunker fuels could again be taken up within ICAO and IMO.

(d) Implications for Australia and the world

Australia has much at stake in the Copenhagen negotiations. The Copenhagen outcome will influence the domestic politics surrounding the Rudd government's Carbon Pollution Reduction Scheme (CPRS). Moreover, whether the CPRS is passed before or after Copenhagen, any international agreement that is ultimately negotiated will (assuming Australia ratifies it) influence elements of the CPRS design.

First, a new agreement will impose binding international commitments on Australia to reduce its emissions, which will in turn determine the annual caps under the CPRS (and, ultimately, the price of carbon in Australia). The Rudd government has said Australia will make a 5% emissions cut on 2000 levels by 2020 irrespective of other countries' commitments. If other countries agree only very weak targets (or if the negotiations end in failure), it will achieve the 5% target via the CPRS (assuming it becomes law). Australia will agree to a 15% reduction target by 2020 if Copenhagen yields an agreement involving comparable targets from developed countries and substantial commitments by major developing countries (again, this would primarily be achieved via the CPRS). Only if the negotiations yield a comprehensive global treaty that provides a pathway to stabilisation of greenhouse

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gases at 450ppm would Australia agree to a 25% target. Moreover, this commitment is conditional on the treaty's entailing comparable reductions by developed countries, slower emissions growth (of at least 20% below business-as-usual by 2020) from major developing countries, the inclusion of REDD and land-sector mitigation and the establishment of 'fully functional global carbon markets'. In the unlikely event that such a comprehensive agreement emerges, the government has said that Australia would meet the 25% goal only partially via the CPRS, with up to five percentage points being achieved by direct government purchases of international credits.⁸³

The second way in which the content of any new agreement will influence the design of the CPRS is through the content of international accounting rules for the post-Kyoto commitment period. New rules on accounting for emissions from land-use and forestry will determine what sorts of emissions 'sinks', or 'offsets', from these sectors (eg. soil sequestration) countries can count towards meeting their mitigation targets. These rules will in turn affect Australia's decision about whether to include such offsets in the CPRS (which would in effect allow farmers to generate income by creating carbon permits for carbon they sequester). Rules about the extent to which countries can meet their international mitigation obligations by purchasing international credits, such as those generated from the CDM, will also affect Australia. If this option is limited, the government's plan to allow companies to rely on unlimited imports of such credits to comply with their CPRS obligations will need to be revised. The extent to which both land-use/forestry offsets and international credits are covered by the CPRS will also affect the carbon price in Australia.

Other ways in which Copenhagen could significantly affect Australia include: the acceptance of additional obligations by the federal government to finance clean development and adaptation in developing countries; expanded opportunities for private-sector investment in developing country mitigation projects, either via carbon markets or simply as a result of new measures to reduce emissions in such countries; and a greater role for the public and private sectors in assisting Australia's neighbours reduce deforestation.

Australia's long-term interests are aligned with the overall goal of the UN climate change regime: to avoid dangerous climate change. Copenhagen itself will not achieve this goal, nor will agreement be reached on all the issues outlined in this paper. The conference could, however, be pivotal in mobilising effective global action. Whether it succeeds in doing so will be left to future generations to judge.

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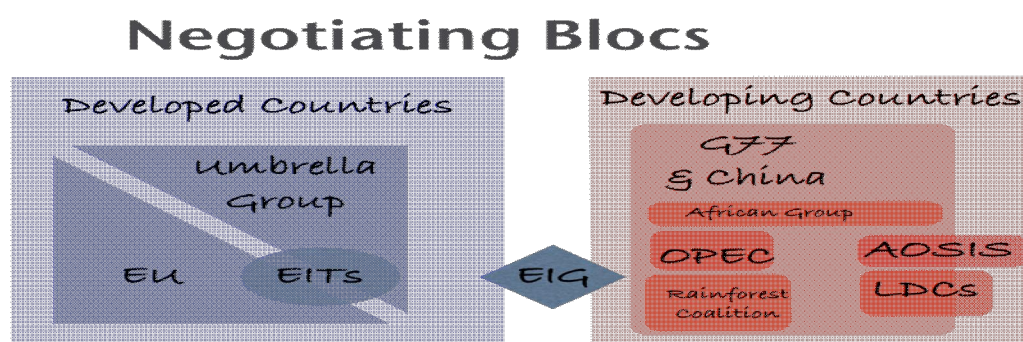
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5. ANNEXURES

(a) Who's Who? Negotiating blocs and countries



Countries participate in the international climate change negotiations through numerous different country groups or blocs, as presented in a simplified diagram, above. The key distinction is between developed and developing countries, however there is a range of other groups (with countries belonging to more than one group, in some cases), including:

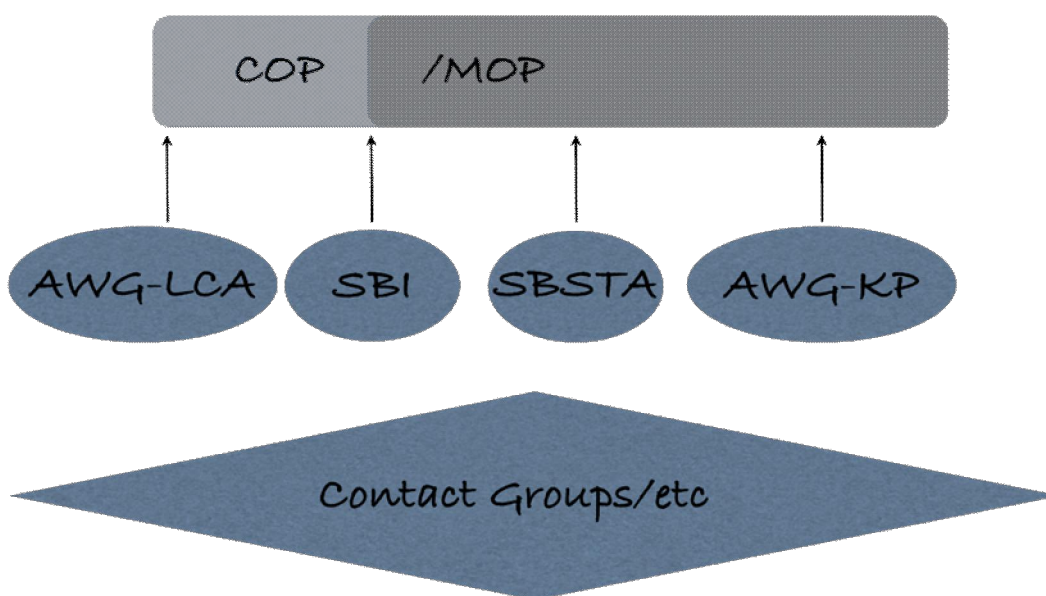
- EU (the European Union) – A group of 27 European countries that have a consistent stance on climate change issues and negotiate as a single entity. Members include the UK, France, Germany and Sweden (which will be the EU President during Copenhagen).
- The Umbrella Group is a group of non-EU developed countries that discuss issues together, but negotiate independently. The Group is chaired by Australia and includes the United States, Canada, Japan, Norway, Russia and New Zealand.
- EITs (Economies in Transition) – This group includes Russia and other countries formally or informally controlled by the Soviet Union. While they do not negotiate together, they are recognised as having special interests.
- EIG (Environmental Integrity Group) – This includes Switzerland, Korea and Mexico. As OECD members, Korea and Mexico cannot be part of the G77 & China group, and Switzerland has a long tradition of independence in international affairs. They work together because if each acted independently they would not have a significant presence in the negotiations.
- G77 & China (Group of 77 and China) – This group of 130 developing country parties is the largest of all the negotiating blocs. It is a broad coalition, including countries from all different regions, with varying levels of economic development and diverse interests, from Singapore to the Maldives, from India to Nigeria, from Brazil to Fiji. There are several developing countries outside of the Group. China, as an associate member of the G77, works closely with the Group but does not speak on its behalf.
- African Group – This group contains the 53 countries in Africa. It has a particular focus on sustainable development and adapting to the impacts of climate change.

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- Rainforest Coalition – A group of 40 developing countries – primarily from the Amazon, Congo Basin and South East Asia – that have tropical forests and want to see REDD included in a deal at Copenhagen. Notably, Brazil is *not* a member of this group.
- OPEC (Organization of the Petroleum Exporting Countries) consists of 12 countries, and is focused primarily on seeking compensation for an anticipated decline in their national incomes resulting from international measures to reduce the consumption of oil and other fossil fuels (ie. the issue known as ‘impact of response measures’).
- AOSIS (Alliance of Small Island States) is a group of 39 countries that are considered to be the most exposed to the impacts of climate change, particularly sea level rise. They are focused on adaptation and on ensuring global emissions are reduced as far as possible.
- LDCs (least developed countries) are the world’s poorest 49 countries. They are focused on sustainable economic development and on adaptation.

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(b) Institutional structure of the UN climate regime



COP: The Conference of the Parties is a gathering of all of the parties to the UNFCCC to negotiate treaty matters relating to the Convention.

MOP: The Meeting of the Parties is a gathering of all of the parties to the Kyoto Protocol to negotiate matters relating to the Protocol.

In many instances, the COP and MOP meet in a single, combined meeting. This will occur at Copenhagen.

SBI: The Subsidiary Body for Implementation is a permanent body that supports the deliberations of the COP and the MOP and focuses on the more practical issues relating to the implementation of the Convention and the Protocol within member countries.

SBSTA: The Subsidiary Body for Scientific and Technological Advice is a permanent body that considers scientific and technical issues relating to the Convention and the Protocol and provides advice on these topics to the COP and MOP.

AWG – KP: The Ad Hoc Working Group on the Kyoto Protocol is a temporary subsidiary body established to negotiate issues concerning the extension of the Protocol into a second commitment period (post-2012).

COMPREHENDING COPENHAGEN

AWG – LCA: The Ad Hoc Working Group on Long Term Cooperative Action was established in Bali and is a temporary subsidiary body established to negotiate a broader set of issues relevant to a new treaty for the post-2012 period, including commitments for developing countries and for the United States.

Contact Groups, informals, Friends of the Chair and other similar groups: The small gatherings that occur during negotiations at which individual issues are negotiated.

COW: The Committee of the Whole is a gathering of all relevant parties, bodies and meetings in a single combined meeting. COWs are rare and typically only held when there is a need for political focus to resolve a high profile impasse. It is possible that at some point in Copenhagen a COW will be established.

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(c) Acronyms

Annex I	Those countries listed in Annex I to the UNFCCC. Includes developed countries and countries from the former Soviet Union that are considered economies in transition.
AOSIS	Alliance of Small Island States
CDM	Clean Development Mechanism
CO ₂	Carbon dioxide
CO ₂ -e	Carbon dioxide equivalent
COP	Conference of the Parties
CPRS	Carbon Pollution Reduction Scheme
EU	European Union
G20	Group of 20 nations
G77 and China	Group of 77 and China
G8	Group of 8
IPCC	Intergovernmental Panel on Climate Change
LULUCF	Land use, land use change and forestry
Non-Annex I	Those (mainly developing) countries not listed in Annex I to the UNFCCC
OECD	Organization for Economic Cooperation and Development
OPEC	Organization of the Petroleum Exporting Countries
ppm	parts per million
REDD	Reducing emissions from deforestation and degradation
UNFCCC	United Nations Framework Convention on Climate Change

ABOUT THE AUTHORS

Dr Greg Picker has over 12 years experience in climate change and environmental policy, including with the UNFCCC and in senior executive roles in the Federal Government, where he had extensive interaction with politicians and stakeholders. Greg was a senior negotiator for the Australian Government and has participated in many international negotiations. Greg is currently a consultant with AECOM. He is also an Honorary Research Consultant at the University of Queensland, Institute for Social Science Research.

Fergus Green is a lawyer in the Climate Change Group at Allens Arthur Robinson in Melbourne, where he has advised a range of corporate and government clients on issues ranging from emissions trading to forestry offsets. He has also worked as a climate change and energy policy analyst and has written numerous opinion pieces on climate change politics in the print and online media, including for *The Australian Financial Review*, *The Age* and *The Interpreter*. Fergus is attending the Copenhagen Conference as a volunteer with a project that is assisting a number of small Pacific island states in the negotiations.

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