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Climate Change Policy Beyond Kyoto

A new global plan

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Foreword

This discussion paper draws on papers prepared by The Australia Institute to inform the deliberations of the International Climate Change Taskforce. The Taskforce is a unique collaboration between three think tanks, the Institute for Public Policy Research in London, the Center for American Progress in Washington DC and The Australia Institute in Canberra.

For the post-2012 period, the paper recommends the development of a new global plan that builds on the United Nations Framework Convention on Climate Change (UNFCCC) and the Kyoto Protocol, and works to involve all countries in action on climate change at the international level over the coming decades. It would be developed as part of the ongoing UN climate negotiations.

The main elements of the new global plan presented here were adopted by the Taskforce in its report, *Meeting the Climate Challenge*, released around the world on 25th January 2005.

In presenting a new global plan careful consideration has been given to the difficult political circumstances surrounding climate change negotiations. Among these considerations, the proposed framework accommodates the concerns expressed by the governments of the US and Australia in refusing to ratify the Kyoto Protocol.

It is well understood that, as the nation responsible for a quarter of global greenhouse gas emissions, the participation of the US is critical to long-term efforts to control climate change. But Australia too is a significant force internationally. Its unwillingness to ratify gives greater apparent legitimacy to the US position. And as a wealthy nation with the highest greenhouse gas emissions per capita among developed countries, Australia's refusal to participate in the international agreement means that developing countries will be less likely to make commitments to reduce their own emissions in the longer term.

In considering how to balance the concerns of various governments and blocs of nations, the authors take the view that protecting the gains made in the UNFCCC is paramount. The hard-won progress embodied in the Kyoto Protocol should also be preserved. It is envisaged that negotiations and implementation of the proposed plan of action would occur under the UNFCCC. While the focus of the new plan is to build a global climate regime for the post-Kyoto period, discussions, preparatory actions and negotiations could commence immediately, in advance of the Kyoto Protocol's first commitment period.

As climate scientists ring the alarm bells ever more loudly, an approach that breaks the deadlock is urgently needed.

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However, the views expressed in this paper are those of the authors alone.

Summary

With the imminent entry into force of the Kyoto Protocol, 141 ratifying nations are due to take action to begin tackling the enormous problem posed by global climate change. But the size of the challenge means the Protocol is just a beginning; much more will need to be done to dramatically reduce greenhouse gas emissions over time. It is imperative that we find ways to allow nations that have not joined the Kyoto Protocol to participate in the global effort.

This paper proposes a new global plan for international action on climate change. In developing the framework we have been guided by four fundamental considerations:

- recognition of the requirements of fairness between nations ;
- the central importance of the Kyoto architecture;
- the long-term need to move towards equal per capita emission rights; and
- political feasibility.

The proposed framework would enable all countries to work together to achieve deep cuts in global greenhouse gas emissions over the next decades. It involves industrialised nations accepting deeper mandatory cuts and includes abatement actions by developing countries.

Drawing on a number of so-called multistage approaches, the elements of the global framework are as follows.

1. It accepts that a commitment to a long-term global target is needed to meet the UNFCCC's ultimate objective of preventing human-induced climate change from reaching a 'dangerous' level.
2. It envisages the allocation of each country to a stage. There are three stages for developing countries reflecting differences in national circumstances. Developed countries fall into two stages: already industrialised (Annex II) and economies in transition.
3. The US and Australia would proceed on a transitional parallel track, which converges with the Kyoto system. The adoption by the US and Australia of domestic emissions trading systems, harmonised with the EU or Kyoto trading system, is at the centre of the US/Australian track.
4. Developed countries would accept deeper emission reduction commitments following the first commitment period of the Kyoto Protocol (2008-2012). These countries, which have a high capability to mitigate, will also agree to transfer technology and financial resources to developing countries.
5. Developing countries would operate under a flexible system based on three progressive stages, broadly reflecting current states of development. Those countries in the initial stages agree to align climate and development objectives and receive financial and technology assistance from developed countries. The middle stage is characterised by energy sector reform and agreed carbon

intensity targets. The final stage requires binding emission reduction targets coupled with access to the Kyoto Protocol's flexibility mechanisms. For all developing countries there is a clear focus on sustainability in the energy sector aimed at enabling development to proceed but with declining dependence on greenhouse-gas intensive technologies, along with concerted action on adaptation.

The parallel US/Australia track enables the US and Australia to re-engage with international efforts. In addition to joining international negotiations, both countries would develop and implement mandatory domestic abatement programs. In the US the most promising domestic approach is a national cap-and-trade system along the lines proposed in the McCain-Lieberman Bill. The US and Australian emissions trading systems would be designed to harmonise with the European system (or possibly the Kyoto system) with a view to trading between the systems beginning during or immediately after the first commitment period. This will require some parity in the levels of the caps in the systems.

The Kyoto countries and the US and Australia would agree to negotiate terms under which the US/Australia track and the Kyoto system converge fully in a new global agreement under the auspices of the UNFCCC, to which all parties would agree to be bound. In addition the US and Australia would be encouraged to participate in UNFCCC and Kyoto mechanisms designed to assist developing countries to limit emissions and adapt to climate change.

In the post-2012 period developed countries take on deeper, legally binding emissions reduction commitments, which would be successively negotiated over coming decades with reference to the long-term global climate target. Transfers to developing countries of technological and financial resources for mitigation and adaptation would occur through the effective operation of the mechanisms established under the UNFCCC, the Kyoto Protocol and associated agreements.

The allocation of developing countries initially to one of the three stages would be guided by two main criteria: capability to mitigate (measured, for example, by GDP per capita) and potential to mitigate (measured, for example, by the degree of energy efficiency). Two other considerations would also be taken into account. The first is the historical responsibility of countries for their contribution to the climate change problem. Secondly, account should be taken of the size of a country's total emissions even if its per capita emissions and per capita income are relatively low. This applies particularly to major emitters, notably China, India and Brazil.

It is proposed that negotiations begin as early as COP 11 in 2005. The aim would be for all parties to develop a set of commitments and actions founded upon the UNFCCC and Kyoto Protocol and consistent with the concepts outlined in this paper. Ideally the US would offer to host the final stage of these negotiations, which would consolidate the proposed new global plan and set out the agreed commitments and actions for the post-2012 period.

1. Political context

The Kyoto Protocol will enter into force on 16th February 2005 when it will become legally binding on the 141 ratifying nations. The emission reduction targets agreed by industrialised countries under the Kyoto Protocol apply to the first commitment period which runs from the beginning of 2008 to the end of 2012. In 2005, ratifying parties are expected to begin negotiations for emission reductions and other commitments to apply in the second commitment period after 2012. There is widespread recognition, backed by increasingly worrying climate science, that much deeper emission reductions will be needed in the second and subsequent commitment periods. The need for these 'deep cuts' provides another reason for giving new consideration to a more comprehensive climate change regime now. Some major developed country signatories have already begun aggressive emission reduction programs that will give great impetus to the global effort to reduce emissions and are expected to have far-reaching implications for the corporate world as well as for ordinary citizens.

British Prime Minister Tony Blair holds the presidency of the G8 and chair of the EU in 2005, and has made climate change one of two key priorities. Backed by the launch of the European Union's Emissions Trading Scheme (EU ETS) and entry into force of the Kyoto Protocol, and driven by increasing recognition of the need for deep cuts in emissions, Prime Minister Blair's global leadership on climate change during 2005 could be pivotal in securing international agreement to step up action.

Any proposal for a new global plan of action that builds on the achievements of the Kyoto Protocol will face sizeable hurdles, notably the willingness of the US Government to work towards a new global agreement, the willingness of developing countries to accept the US into a new plan on terms different from those agreed under the Kyoto Protocol, and the willingness of European political leaders to use the EU ETS as a bridge between European and US action on climate change. We consider each of these briefly.

US willingness

Although the Bush Administration has categorically rejected ratification of the Kyoto Protocol, some levels of government in the US are eager to pursue measures aimed at tackling climate change. Eleven north eastern and mid-Atlantic states are working together on developing a regional cap-and-trade system for power plants, with the proposed design and arrangements expected to be published in April 2005. The starting point for the 11 states has been a regional agreement to stabilize greenhouse emissions at 1990 levels by 2010 and to achieve a ten per cent reduction by 2020.

In October 2003, a group of influential Republican and Democrat senators introduced the McCain-Lieberman Bill to the US Senate (as an amendment to the Climate Stewardship Act) that would have required major emitters in the US to adhere to mandatory, economy-wide emission caps. The Bill proposed the introduction of a cap-and-trade system across the US that would begin on 1st January 2010 and apply in the first instance for the six years to 2016.¹ It proposed capping emissions at year 2000 levels over the period 2010-2016, and in subsequent years reducing them to 1990 levels.

¹ <http://www.ecdel.org.au/pressandinformation/ClimateChange2.htm>

The caps would apply to all major emitters of CO₂ and other industrial greenhouse gases and cover more than 70 per cent of all US CO₂ and industrial greenhouse gas emissions. Transport emissions would be tackled by requiring refineries and importers of petroleum to hold allowances for each ton of carbon dioxide that would be emitted in the combustion of their products.

The Senate vote on the McCain-Lieberman Bill was lost 43 to 55. Most observers were surprised at how narrowly it was lost, and some senators who voted against the Bill nevertheless spoke in favour of it. The fact that it was introduced at all clearly showed the widespread concern about the Bush Administration's position on climate change within the US and the closeness of the vote reflected the strong feeling in the community that climate change cannot be ignored. Washington observers believe that support for a comparable Bill will continue to grow and it is very likely that similar proposals will become law in the next three to five years. This does not imply that the US is likely to ratify the Kyoto Protocol soon but it does point strongly to serious emission reduction measures being implemented by the US in the foreseeable future.

Developing country positions

Most developing countries have indicated they are unwilling to accept binding emissions targets until there is demonstrable action on emission reductions on the part of all Annex I countries. This concern could be accommodated by accepting a lag between the demonstration of action by Annex I countries and the acceptance of binding commitments by developing countries. Some developing countries are also likely to push for a stronger and earlier emphasis on per capita emission entitlements, at least in principle, before agreeing to binding commitments.

European trading system

On 1st January 2005 the European Union implemented a cap-and-trade emissions reduction program, the biggest and boldest pollution trading scheme ever developed. The first phase, applying to the new EU complement of 25 countries, will run until the end of 2007 and is known as the 'warm-up' phase. The second phase will begin in 2008 and end in 2012, coinciding with the first commitment period of the Kyoto Protocol.

Under the Emissions Trading Directive, member states are required to set an emissions cap for all installations covered by the scheme, estimated to number more than 12000 and accounting for 46 per cent of total EU CO₂ emissions. Each EU member has an overall emissions target determined by the burden-sharing arrangements the EU has adopted to implement the requirements of the Kyoto Protocol.

The current position of the European Commission is that non-parties to the Kyoto Protocol cannot trade in the EU ETS, at least until they adopt a binding emissions target. Politically, the objective is to maintain pressure on non-parties to ratify Kyoto and to ensure the benefits of emissions trading are shared only between Kyoto parties. Practically, before full integration the EU would need to be certain of the stringency of emission reductions under another cap-and-trade system, such as that envisaged by the McCain-Lieberman Bill in the US. There would be considerable anxiety about full integration if a US cap is significantly weaker than Kyoto targets because of the risk of undermining the environmental integrity of the EU's commitments.

2. Principles of a new plan

Three main tasks face the international community in its efforts to consolidate a comprehensive global climate regime that will meet the goal of preventing dangerous anthropogenic climate change in the long term, or at least minimising the damage.

1. The first is to ensure that the US - which accounts for 25 per cent of annual global greenhouse gas emissions - and Australia play a role in tackling global climate change commensurate with their contributions to global emissions and their economic and strategic importance.

President Bush is not expected to send the Kyoto Protocol to the Senate for ratification during his second term in office. However, moves to implement domestic abatement programs, including a possible national emissions trading system, would provide an opportunity to reconsider the evolution of an international policy framework based on an agreed timetable for the US to converge with the global effort, a prospect discussed in further detail below.

2. The second task facing the international community is to ensure that Kyoto Protocol negotiations for the second commitment period (due to begin in 2005) lead to emission reduction measures that go substantially further than those of the first commitment period and aim to set the world on a long-term endeavour to stabilise the atmospheric concentration of greenhouse gases. This will require industrialised nations to accept deeper mandatory cuts and will need to include abatement actions by a number of developing countries.
3. The third task involves the need for major developing countries to undertake substantive action ranging from mandatory measures for those most capable and with the highest emissions to non-binding enabling measures for others. The aim must be to decouple emissions growth from economic development in a concrete way leading to the peaking of emissions from developing countries within two decades. Several instruments are feasible including carbon-intensity targets and sectoral caps for the energy sector constructed in such a way that emissions abatements in these sectors might enter the international trading market.

These three tasks are closely linked. Developing countries are more likely to adopt measures if the US and other industrialised countries demonstrate good faith, and international re-engagement by the US is more likely if developing countries indicate their willingness to adopt measures to reduce their emissions.

There are five principles that should underpin the development of a future international climate change plan of action.²

1. *Fairness in target setting.* Fairness must be the main consideration in setting country targets within an agreed global target. To achieve this, short-term criteria for setting targets should include the capacity to pay for mitigation (approximated by national income per capita) and current and historical

² These principles were discussed and agreed at the Windsor meeting of the International Climate Change Taskforce in March 2004.

responsibility for emissions (including total emissions and per capita emissions). Historical responsibility for national emissions may be accounted for from the time that climate change became recognised as a significant problem (i.e. 1990).

2. *Centrality of the Kyoto architecture.* The Kyoto Protocol represents an enormous amount of political, institutional and intellectual effort and should serve as the foundation for any new or revised global plan of action. Key achievements of Kyoto include: specified and legally binding commitments; differentiated national commitments with the developed world acting first; least cost mitigation through flexibility mechanisms; and a six gas 'basket approach'. Any new plan should build on these achievements but also tackle the disadvantages of Kyoto: limited participation; absence of a long-term strategy; small initial emission reductions; and insufficient focus on adaptation.
3. *Long-term targets.* The world community needs to set a long-term target to limit dangerous climate change. It is expected that the Fourth Assessment Report of the UN Intergovernmental Panel on Climate Change, due in 2007, will address the issue of 'dangerous climate change'. Detailed consideration of long-term climate objectives has been undertaken by the Institute for Public Policy Research in parallel with the preparation of this paper, and it proposes a target to limit global average warming to 2°C above the pre-industrial global mean temperature.³
4. *Long-term criteria for burden sharing.* In the long-term, burden sharing should move to a system of equal per capita rights to use the absorptive capacity of the atmosphere, with national per capita emissions converging over time. Arguments for some variation to a strict per capita regime, such as a convergence corridor, should be considered.
5. *Linking short and long-term commitments.* To ensure nations are moving towards an agreed long-term global reduction target, short-term targets need to be consistent with long-term goals.

In addition, any regime should attempt to achieve agreed reductions in greenhouse gas emissions at the lowest cost and with as much flexibility as is feasible without compromising environmental integrity. In pursuit of this objective, the Kyoto Protocol allowed for emissions trading amongst participating countries, recognising that with suitable limits, trading permits a lowest-cost approach. This does not preclude the development and implementation by participating countries of a range of policies and measures, some of which will serve economic goals in addition to greenhouse gas mitigation, for example employment creation and technological development. It should be recognised too that a least-cost approach, such as a carbon tax, is not always the fairest one. Moreover, it is highly likely that the requirements of the future international climate regime will need to be integrated with existing international trade and investment treaties.

³ S. Retallack, *Setting a long term climate objective*. A paper for the International Climate Change Taskforce, Institute for Public Policy Research, London, UK, 2005
<http://www.ippr.org.uk/publications/files/Setting%20a%20long%20term%20climate%20objective.pdf>

3. A new global plan

In order to build on the principles set out above and enable the long-term target to be reached, the future global policy framework needs to incorporate progressively deeper cuts in emissions from a growing number of countries as well as stronger action on adaptation, particularly in the countries that are most vulnerable to the effects of climate change.

Having reviewed the main options discussed internationally and aimed at building a more effective climate policy regime, we believe that a ‘multistage approach’ provides the best way forward. It accommodates the essential principle of fairness including differentiated commitments between countries on the basis of their national circumstances that reflect the ‘common but differentiated responsibilities and respective capabilities’ that nations agreed to respect under Article 3.1 of the UNFCCC. The development of the multistage approach is summarised next.

3.1 Origins of the multistage approach

The aim of the multistage approach is to ensure that countries with similar national circumstances assume similar responsibilities and commitments under a climate regime. The approach defines potential changes in a nation’s commitments according to agreed measures of national circumstances. The approach is dynamic in the sense that nations undertake higher abatement commitments over time.

An early multistage approach was developed some years ago by researchers at RIVM in the Netherlands as a global application of the Brazilian historical responsibility approach.⁴ It identified four groups of nations with progressively greater obligations: those without quantitative targets; those with intensity targets; an emissions stabilisation stage; and a final group with absolute emissions reduction obligations.

A refined design, proposed by the Climate Action Network, allocates nations to one of three ‘tracks’.⁵ The first track requires industrialised nations to commit to absolute emissions reduction, with levels of commitment driven in the long-term by an equal per capita objective, but in the short-term influenced by both income and historical responsibility variables. The second track applies to most developing countries and aims at the rapid introduction of low-carbon technologies with assistance from countries in the first track. The third track groups together least developed nations and small island states and requires industrialised countries to provide assistance to these nations for both adaptation and mitigation. Countries would make the transition from lower to higher stages depending on changes in income, emission levels and (perhaps) historical responsibility.

Most recently, the Wuppertal Institute and Energy Research Centre (South Africa) supported by the German Federal Ministry for Economic Cooperation and Development have sponsored a new proposal in which countries are divided between six groups based

⁴ M. den Elzen, M. Berk, P. Lucas, B. Eickhout and D. van Vuuren. *Exploring climate regimes for differentiation of commitments to achieve the EU climate target*. RIVM report 728001023/2003, Bilthoven, Netherlands 2003 <http://www.rivm.nl/bibliotheek/rapporten/728001023.html>

⁵ Climate Action Network, *A viable global framework for preventing dangerous climate change*. CAN Discussion Paper: COP9, Milan, Italy, 2003 http://www.climateactionnetwork.org/docs/CAN-DP_Framework.pdf

on the multistage approach.⁶ This we refer to as the South-North dialogue approach. Three criteria guide allocation of countries and, therefore, the depth and timing of commitments. The potential to mitigate determines the level of reduction a nation undertakes. To enable mitigation in developing countries, financial and technological transfers from developed countries are determined by historical responsibility in combination with capability to mitigate.

3.2 Developing the multistage approach

In developing a new global plan based on the multistage approach, the specific design challenges that must be addressed are:

1. Creating a politically feasible global plan that brings together all developed and developing nations;
2. Defining a sufficient number of stages so as to differentiate adequately between countries' national circumstances without creating unnecessary complexity;
3. Establishing criteria to guide the consideration of national circumstances and the movement of nations between stages, including a timetable for reviewing changes in national circumstances;
4. Assigning policies and measures or commitments that would apply in each stage and ensuring that national targets, individually and collectively, meet the agreed long-term target; and
5. Building flexibility into the approach to ensure economic effectiveness in achieving deep emissions cuts in the long term.

In adopting a multistage approach we have drawn on the South-North dialogue proposal with three significant additions:

- A. *A long-term target.* An agreed long-term global target is needed to meet the ultimate objective of the UNFCCC to prevent 'dangerous anthropogenic interference with the climate system'. Ideally, this target would be translated into an emissions limit and provide the reference point in establishing commitments and obligations for all countries.
- B. *Developing country action.* The proposed plan encompasses a three-stage process under which all developing countries are enabled to reduce the carbon intensity of their economies progressively while ensuring their right to economic development.
- C. *A transitional parallel track for the US and Australia.* Assuming that these countries do not change their positions on ratifying the Kyoto Protocol, as a transitional arrangement they would be placed on a parallel track with the aim of integrating them within the global effort as soon as possible after 2012. A key

⁶ South-North Dialogue on Equity in the Greenhouse. *A proposal for an adequate and equitable global climate agreement.* Wuppertal Institute for Climate, Environment and Energy and the Energy Research Centre. Financed by the German Federal Ministry for Economic Cooperation and Development (BMZ) 2004
http://www.wuppertalinst.org/download/1085_proposal.pdf

mechanism of this initiative would be connecting US and Australian emissions trading systems to the European or the Kyoto trading systems, which would demonstrate the willingness of both countries to rejoin a multilateral system. This would pave the way for the substantial agreements necessary if a fully global system is to be operational at the start of the second commitment period.

3.3 Overview of the proposed global plan

The new global plan enables all countries to contribute to solving the problem of climate change in an equitable manner by allocating countries to stages that reflect their national circumstances.

1. Developed countries fall into two stages: those already industrialised (listed in Annex II of the UNFCCC) and economies in transition (listed in Annex I but not in Annex II).
2. The US and Australia are placed on a transitional parallel track aimed at integration with the global framework as soon as possible after 2012.
3. Developing countries progress through a three-stage process that initially aligns climate and development objectives and subsequently ensures limits on their greenhouse gas emissions; they move from stage to stage at a rate reflecting changes in their national circumstances.

An agreed long-term global target is needed to meet the ultimate objective of the UNFCCC which is to prevent dangerous interference with the climate system. Ideally, this target would be translated into an emissions limit to provide the reference point in establishing commitments and obligations for all countries. Whilst it may not be feasible to reach a global consensus on such a target in the shorter term, at the very least countries or regional groups should be encouraged to develop, as a matter of priority, levels of climate change they consider to be dangerous. The International Climate Change Taskforce has recommended a limit of 2°C above the pre-industrial global mean temperature as the long-term climate objective.⁷

A global carbon budget can be constructed with reference to the long-term target, and taking future emissions pathways into consideration, interim milestones can also be defined which will represent commitment periods of the new global plan. All countries will contribute to meeting the long-term objective and interim milestones but it is an inherent characteristic of the new plan that countries in the higher stages (i.e. Annex II) will do more to meet the milestones sooner than the least developed countries. Based on the interim milestones, carbon budgets should be agreed for each stage of the new global plan and these can then be shared among the countries at each stage, recognising that even within stages there will be differences in national circumstances, for example in per capita emissions.

Countries in every stage will need to develop and fund adaptation measures which will account for a greater proportion of overall effort on climate change in developing

⁷ International Climate Change Taskforce. 2005, *Meeting the climate challenge: Recommendations of the International Climate Change Taskforce*, IPPR, CAP and TAI. http://www.tai.org.au/Publications_Files/Papers&Sub_Files/Meeting%20the%20Climate%20Challenge%20FV.pdf

countries. Commitments and obligations for countries at each stage – on mitigation, policies and measures, technological and financial transfers, and adaptation – are summarised in Table 1. Negotiations under the new global plan will develop new abatement commitments for all countries in subsequent commitment periods.

Table 1 Differentiation of commitments and obligations for each stage

	Annex II	Annex I but not Annex II	Developing countries		
			Final stage	Middle stage	Initial stage
Quantitative commitments	Binding emissions reductions targets	Binding emissions reductions targets	Binding emissions reductions targets, with access to CDM and international emissions trading	Carbon intensity targets, initially applied only to the energy sector and then across the economy	No quantitative commitments
Qualitative commitments				Co-funded SD PAMs, sectoral CDM, non-binding renewables and energy efficiency targets	Funded SD PAMs, sectoral CDM, non-binding renewables and energy efficiency targets
Technology and financial transfers	High direct payments and technology transfers to developing countries	Some payments and co-operation in technology transfers	Some co-funding; some transfers	Recipients of technology and financial transfers, although becoming less dependent as capacity builds	Recipients of technology and financial transfers
Adaptation	High direct payments to adaptation funds	Low levels of payment to adaptation funds	Co-funding of national adaptation strategy development	Recipients of distributions from adaptation funds	Recipients of distributions from adaptation funds

CDM - Clean Development Mechanism

SD PAMs - sustainable development policies and measures

Over time the framework allows developments in response to the need to:

- meet the long-term global climate objective by ensuring that short-term targets are linked to and consistent with the long-term goal;
- facilitate the gradual transition over the long-term towards a system of equal per capita rights to use the absorptive capacity of the atmosphere; ensuring that national emissions gradually enter a convergence corridor moving towards an equal per capita target; and

- respond to developments in climate science and technological innovations.

It is proposed that negotiations begin as early as COP 11 in 2005 with the aim of developing a set of commitments and actions by all parties consistent with the concepts outlined in this paper and founded upon the UNFCCC and Kyoto Protocol system. Ideally the US would offer to host the final stage of these negotiations, which would consolidate the proposed new global plan and set out the agreed commitments and actions for the post-2012 period.

3.4 The new global plan in detail

Developed countries

Developed countries (other than the US and Australia) take on deeper, legally binding emission reduction commitments that extend beyond 2012 and will be subject to periodic renegotiation. Commitments and obligations would be heaviest for industrialised (Annex II) countries where legally binding quantitative emissions reductions targets will apply. These countries, which have a high capability to mitigate, would also be required to transfer technology and financial resources for mitigation and adaptation to developing countries.

The separation of developed countries into stages is based on the UNFCCC distinction between Annex II – the most industrialised countries - and other members of Annex I – the less industrialised developed countries in the process of transition to a market economy.

The US/Australian track

Assuming that the US and Australia do not change their positions on ratifying the Kyoto Protocol, as a transitional arrangement they are to be placed on a parallel 'US/Australian' track with the aim of integrating them into the global effort as soon as possible after 2012. This would require them to commit to domestic action under binding domestic emissions caps and to adopting national cap-and-trade schemes for emissions. A key mechanism to facilitate integration would be connecting the US and Australian emission trading systems to the European or the Kyoto trading systems, provided there is parity in the level of caps or a system of discounting for credits from schemes with substantially weaker caps.⁸ Such a connection would demonstrate the willingness of the US and Australia to rejoin a multilateral system and would thus pave the way for the substantial agreements needed to ensure that a fully global system is operational at the start of the second commitment period.

From the outset the details of the US and Australian emissions trading systems would need to be harmonised with those of the European (or the Kyoto) trading system, along with an agreed timetable in which trans-Atlantic trades between the different systems could occur.⁹ This extension of trading would reduce the costs of abatement in all

⁸ The international community would need to facilitate the connection between the US and Kyoto trading systems for all or part of the first commitment period of the Kyoto Protocol. The UNFCCC parties would need to agree that *force majeure* applies to the US target under Kyoto and ratification of Kyoto by the US is not required for participation in the system. Renegotiating the terms of the Kyoto Protocol would be infeasible and inadvisable in any event.

⁹ Connecting solely with the European ETS has the disadvantage that the European system has limited sectoral coverage. It may be preferable to aim to have the US system connecting with the Kyoto trading system from the first day of its operation.

countries involved. Making the systems compatible will require negotiated agreement on a range of aspects including accounting and verification systems, ensuring parity in the level of the caps (or a system of discounting for credits from schemes with substantially weaker caps), and the admissibility of emission credits generated in activities outside of the EU and US. There is a slim chance that the systems could be integrated at the beginning of the first commitment period of the Kyoto Protocol (i.e. at the start of 2008).

In addition to meeting their domestic caps, the US and Australia are urged to participate in UNFCCC and Kyoto mechanisms for assisting developing countries to limit their emissions and adapt to climate change. Cooperation with developing countries on technological and financial transfers, particularly through established mechanisms such as the Clean Development Mechanism (CDM), will be particularly important. With other parties, the US and Australia would need to negotiate terms under which the transitional parallel track is integrated fully into the global framework under the auspices of the UN global climate negotiations to which all parties would agree to be bound.

Developing countries

It is important that all developing countries are part of the global plan working towards meeting the long-term climate objective. The reasons for defining actions for developing countries are to:

- take steps that will assist in making progress towards meeting the long-term global climate objective;
- facilitate energy sector development and reform that enables developing countries to leap-frog the carbon-intensive path followed by most developed countries; and
- provide a clear focus on adaptation.

The new global plan encompasses a three-stage process under which all developing countries are enabled to reduce the carbon intensity of their economies progressively while ensuring their right to economic development. The three stages are as follows:

1. Initially, countries are encouraged and enabled to align development and climate goals through confidence-building measures and incentives. They adopt policies and measures that decouple economic growth from emissions growth in a cost-effective way and, where necessary, are adequately supported by resources provided by developed countries;
2. Subsequently, countries commit to reducing the carbon intensity of select sectors of their economies, particularly the energy and transport sectors, and move progressively towards carbon intensity targets; and
3. Ultimately, countries take on binding emission targets as is the case in Annex I countries now. These countries would also have access to the flexibility mechanisms defined under the Kyoto Protocol – emissions trading, Joint

Implementation (JI) and the Clean Development Mechanism (CDM) – to meet their targets.

Some countries have already achieved a level of industrialisation that has moved them beyond the initial stage. Some are clearly ready for the third stage. Moreover, countries experiencing higher rates of industrialisation would make a more rapid transition through the stages.

The mitigation efforts of less developed countries would initially be focussed on qualitative measures such as sustainable development policies and measures and the deployment of technology and financial resources transferred to support their mitigation activities. There is a gradation of commitments between the initial and final stages. The emphasis shifts from qualitative steps and measures to binding quantitative emissions reduction targets, and from being recipients of technology and financial transfers to co-funding of mitigation programs. The most rapidly industrialising developing countries may co-fund national adaptation strategy development and measures. This is shown in Table 1.

Over time, developing countries would progress through the three stages, and they would do so as their national circumstances permit. The consideration of national circumstances would be guided by two main criteria.

- *Capability to mitigate.* This would be measured by, for example, GDP per capita.
- *Potential to mitigate.* The extent to which low-cost emissions have already been undertaken indicates the potential to mitigate in a given economy. Three measures could be used to assess potential – emissions intensity (emissions per unit GDP), emissions per capita and the growth rate of emissions. Energy efficient economies with low emissions per unit of GDP, low emissions per capita based on more sustainable consumption patterns, and a low rate of emissions growth (reflecting the decoupling of emissions growth and economic growth) all indicate a lower potential to mitigate emissions.

Two other factors could also be taken into account. The first is the historical responsibility of countries for their contribution to the climate change problem. Secondly, consideration should be given to the size of a country's total emissions even if its per capita emissions and per capita income are low. This applies particularly to major emitters, notably China, India and Brazil.

There are three other aspects of the proposed framework.

1. Where necessary, developing countries would be adequately supported by resources provided by developed countries. The lower the capacity, the higher the assistance offered. Technological and financial transfers that enable the sustainable development and reform of domestic energy sectors are a particular focus of developing country activities.
2. For all developing countries there is a clear focus on sustainability in the energy sector to enable development but with declining dependence on greenhouse gas-intensive technologies. The aim for all developing countries should be to skip

the greenhouse gas-intensive development path taken by most industrialised countries.

3. Action on adaptation should be a central aspect of climate change activities in all developing countries. Some of the least developed countries are among the most vulnerable to the impacts of climate change and all developing countries have a lesser capacity and capability to adapt to climate impacts than developed countries.

Further observations are made on each of these aspects below.

Technological and financial transfers

Technological and financial transfers form a significant part of the new global plan. The basis for all transfers is enshrined in the agreement to ‘protect the climate system ... on the basis of equity and in accordance with their common but differentiated responsibilities and respective capabilities’ (Article 3.1 of the UNFCCC). This means transfers will be from industrialised to developing countries.

Mechanisms already exist for these transfers, under both the UNFCCC and Kyoto Protocol. The adequacy and efficiency of the existing mechanisms, such as the Special Climate Change Fund and the Global Environment Fund, should be assessed as part of the process of agreeing the transfers necessary under the new global plan.

Complementary transfer mechanisms will most likely be required. In particular, industrialised countries would be expected to reform their external loan guarantee facilities and offer private sector incentives to encourage appropriate investments. The following section considers transfers in the context of required reforms of national energy systems.

Sustainable energy in developing countries

Providing reliable energy services is a priority in most developing countries, both to raise living standards and promote economic development opportunities. However traditional approaches to energy sector development are largely unsustainable, mainly because they do not factor in environmental costs, particularly the emission of greenhouse gases.¹⁰ The energy sector dominates the global pattern of carbon emissions and, as energy services rapidly expand in developing countries, it is expected to account for much of the global increase in emissions.¹¹ The contribution will depend largely on whether energy sector development and reform follows a ‘business as usual’ trajectory or an alternative scenario that actively seeks to reduce emissions.¹²

Sustainable energy sector development and reform that immediately enables developing countries to avoid the carbon-intensive path followed by most developed countries is a key focus of the new global plan. In framing mitigation commitments, developing countries will need to focus on sustainable development and reform of their energy

¹⁰ See Enquete Commission on sustainable energy supply against the background of globalization and liberalization. Deutscher Bundestag, June 2002.

¹¹ International Energy Agency, *World Energy Outlook 2002*. IEA Paris 2002.

¹² International Energy Agency, *World Energy Outlook 2002*, IEA, Paris 2002, p. 31.

sectors to ensure they meet development needs with low carbon intensity. The suggested objectives of sustainable energy sector reform and development are:

- increasing energy services provision, particularly to the 1.6 billion people that currently lack access to energy;
- improving the reliability and security of energy services through diversification of energy supply options;
- ensuring equitable access to energy and related services;
- ensuring that the environmental costs of providing energy services, particularly greenhouse gas emissions, are given prominence in planning and managing the use of energy; and
- fostering ongoing innovation in harnessing and utilising energy resources, particularly in low- and zero-emissions energy technologies and sources.

The means for achieving this reform include sustainable development policies and measures (SD PAMs), sectoral Clean Development Mechanism and technological and financial transfers.

Recognising that development is the priority in developing countries, SD PAMs allow policy-makers in these countries to pledge to build climate change policy into sustainable development pathways.¹³ This is a relatively easy way for developing countries to take the first steps towards long-term action on climate change. We propose that climate change consideration be built into national energy sector pathways through a focus on delivering sustainable energy services.

A particularly appealing approach has been proposed by the Wuppertal Institute and GTZ.¹⁴ Both suggest that combining renewable energy and energy efficiency provides a more affordable and lower risk path to sustainable energy systems. Specifically, their proposal is to use the net cost savings from energy efficiency to reduce the initially higher costs of renewables, and thereby accelerate market introduction of renewables.

The sectoral CDM proposal is to apply the SD PAMs approach to a particular sector (such as the energy sector) through the current avenue for developing country participation in the Kyoto Protocol, the Clean Development Mechanism. Sectoral CDM applies the CDM to sectors rather than just to projects.¹⁵ We propose that the energy sector be a priority in the sectoral CDM, creating a strong focus on sustainable energy sector development and reform.

¹³ For more information on SD PAMs see, for example, H. Winkler, R. Spalding-Fecher, S. Mwakasonda and O. Davidson, Sustainable development policies and measures: Starting from development to tackle climate change. In Baumert, K *et al.* (eds). *Building on the Kyoto Protocol - Options for protecting the climate*. WRI, Washington DC, 2002.

¹⁴ Wuppertal Institute for Climate Environment and Energy, and Deutsche Gesellschaft für Technische Zusammenarbeit (German Technical Cooperation) GTZ, *Towards sustainable energy systems: Integrating renewable energy and energy efficiency in the key*. Discussion Paper for the International Conference 'Renewables 2004', Bonn, May 2004.

¹⁵ For more information on sectoral CDM see, for example, J. Samaniego and C Figueres, Evolving to a sector based Clean Development Mechanism. In K. Baumert *et al.* (eds). *Building on the Kyoto Protocol - Options for protecting the climate*. WRI, Washington DC 2002.

Determining commitments on adaptation

Under the new global plan all developing countries would include a focus on adaptation as part of their climate change commitments and activities. Most developing countries will need access to adaptation funds, with activities focused on:

- understanding impacts;
- building capacity to assess and manage impacts, along with developing adaptation strategies;
- awareness raising across the community, in government agencies and with industry; and
- integrating adaptation into national development strategies.

The least developed countries need a particularly strong emphasis on adaptation as they are most vulnerable to the impacts of climate change and have least capacity.

Developed countries, including the US and Australia, have both the capacity and the resources to develop and implement effective adaptation strategies and would be required to make financial contributions to adaptation funds established to help enable developing countries to address adaptation.



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