Furthering EU Objectives on Climate Change and Clean Energy

Building partnerships with major developing economies

Deborah Murphy, John Drexhage, Aaron Cosbey, Dennis Tirpak, IISD;
and Christian Egenhofer, CEPS

iisd International Institute for Sustainable Development / Institut international du développement durable

Ministry of Foreign Affairs of Denmark

Climate Change and Foreign Policy – Phase II

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2008

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ISBN 978-1-894784-15-3

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This work is a product of the "Climate Change and Foreign Policy Project – Phase II" of the IISD. The research was conducted independently by IISD with financial support from the Ministry of Foreign Affairs, Government of Denmark. The views expressed remain those of IISD and do not necessarily reflect those of the funder, nor should they be attributed to them.

Text printed on 100% post-consumer recycled paper.

Foreword

Climate change is a global challenge that calls for global solutions. The European Union is pursuing an ambitious strategy to respond to the climate challenge. The aim of the EU policies and instruments is to pursue low-carbon development while achieving higher economic growth, creating new jobs, and maintaining and improving living standards for our citizens. Indeed, the policy is based on a recognition that our objectives for sustainable and climate-friendly development offer economic and social opportunities for our citizens.

Denmark, for example, has increased economic growth by 75 per cent over the last approximately 25 years without increasing carbon dioxide emissions; and the initiatives to promote renewable energy and energy efficiency have not detracted from Denmark's quality of life or economic performance.

But success in achieving the climate change goals in the EU will not be enough to achieve the EU objective of limiting global average temperature increase to two degrees Celsius compared to pre-industrial levels, or the objective of the United Nations Framework Convention on Climate Change (UNFCCC) to "prevent dangerous human interference with the climate system." No single country can solve the problem alone, not even a group of countries such as the EU, which only account for around 15 per cent of global emissions.

This study, *Furthering EU Objectives on Climate Change and Clean Energy: Building partnerships with major developing economies*, is about the EU's engagement with major industrialized countries in the developing world. The study is a follow-up to *Climate Change and Foreign Policy: An exploration of options for greater integration*, which was carried out by IISD in 2006–07 with the support of the Danish government. The earlier study identified five discrete areas where foreign policy can play a role in the climate change agenda: peace and security; energy security; development cooperation; trade and investment; and traditional diplomacy. The study gave a series of recommendations on how to more effectively integrate climate policy in the EU foreign policy agenda.

With this current study, further work has been carried out on possible ways to strengthen EU partnerships with major industrialized countries in the developing world. The study focuses on partnership opportunities with Brazil, India, China, South Africa and Mexico, looking at the three focus areas of financing and investment, trade and development cooperation.

I wish to thank IISD, in particular John Drexhage and his team, and all who have contributed to the study, including Christian Egenhofer and the Centre for European Policy Studies.

Ib Petersen
State Secretary, Ambassador
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Preface

Furthering EU Objectives on Climate Change and Clean Energy: Building partnerships with major developing economies focuses on how foreign policy can help to further EU objectives on climate change and clean energy, looking specifically at how the EU can more effectively partner with large developing emitters in supporting a global transformation to cleaner energy systems over the first half of this century. Our analysis indicates that the level of influence of public policy and public funding on the global clean energy agenda may be limited, but still critical. It is because the amounts of public financing available from EU countries (and from virtually all other OECD countries) to influence major economies like China or India is marginal. But it can prove critical to the extent that public monies can play strong leveraging roles in attracting much more significant private funding. Nor should we underestimate the impact of public policies in sending signals to industry; first in Europe, then slowly but surely, creating a ripple effect throughout the global corporate community.

It is clear that achieving any success in implementing a sustainable global climate regime over the next few decades requires a pragmatic partnership with all major economies. In many respects, the EU takes a leading role on the international climate agenda. But it is not just a case of the EU "lighting the way" for all others to follow. Major developing countries are beginning to play a role. India has the largest wind sector of any country; China is seriously implementing aggressive energy efficiency targets; the African National Congress, ruling party of South Africa, has recently proposed that South Africa take on targets for the post-2012 period; Brazil is the global leader in sustainable (sugar cane-based) ethanol production; and Mexico has been a strong champion of programmatic and policy-based approaches for the CDM. The EU has much to learn from all these experiences, and needs to explore ways in which cooperation on these sorts of initiatives can rapidly expand and play a stronger profile in the global economy.

An effective partnership will work to allay growing competitiveness concerns among industry within the European Union. Efforts to meet the EU unilateral target—20 per cent reductions in greenhouse gas (GHG) emissions by 2020 from 1990 levels—can only go so far before industries that rely extensively on carbon and other GHGs for their operations are so adversely affected that they are forced for economic reasons to move "overseas" or to seek protection from competitors. Any additional unilateral targets without commensurate commitments by other major economies and their industries would be politically difficult to deliver.

I would like to thank our team at IISD, led by John Drexhage, and Christian Egenhofer of the Centre for European Policy Studies, for their excellent analysis and useful set of recommendations. Thanks are due to our capable external reviewers, including Kirsty Hamilton, Vivek Kumar, Jiahua Pan and Fernando Tudela. I would also like to extend my thanks to the Danish Ministry of Foreign Affairs. This publication is the fifth in a series which we have produced in collaboration with the Ministry. Our Danish colleagues have been supportive, patient and excellent collaborators.

David Runnalls
President and Chief Executive Officer
International Institute for Sustainable Development

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Abbreviations and Acronyms

ADB	Asian Development Bank
ACP	African, Caribbean and Pacific
AR4	Fourth Assessment Report of the IPCC
ASEAN	Association of Southeast Asian Nations
BICSAM	Brazil, India, China, South Africa and Mexico
BTA	border tax adjustment
CCS	carbon capture and storage
CDM	Clean Development Mechanism
CEC	Commission of the European Communities
CEPS	Centre for European Policy Studies
CER	Certified Emission Reduction
CO_2	carbon dioxide
CO_2-eq	carbon dioxide equivalent
DAC	Development Assistance Committee
EBRD	European Bank for Reconstruction and Development
EGS	environmental goods and services
EIA	Energy Information Administration
EU	European Union
EU ETS	European Union Emissions Trading Scheme
FDI	foreign direct investment
FP7	Seventh Framework Programme for Research and Technological Development
G8	Group of Eight
GATT	General Agreement on Tariffs and Trade
GDP	gross domestic product
GEF	Global Environment Facility
GHG	greenhouse gas
IEA	International Energy Agency
IFC	International Finance Corporation
IISD	International Institute for Sustainable Development
IPCC	Intergovernmental Panel on Climate Change
JI	Joint Implementation
LDC	least developed country
LULUCF	land use, land-use change and forestry
MDG	Millennium Development Goal
MDB	Multilateral Development Bank

MEA	multilateral environmental agreement
MFN	most-favoured nation
MTS	multilateral trading system
ODA	Official Development Assistance
OECD	Organisation for Economic Co-operation and Development
PPM	process and production method
R&D	research and development
RD&D	research, development and dissemination
SCM	Subsidies and Countervailing Measures
TBT	Technical Barriers to Trade
UN	United Nations
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
U.S.	United States
WTO	World Trade Organization

1.0 Introduction

Climate change is now commonly identified as one of the most urgent and critical global issues to address in the vast majority of countries. The Fourth Assessment Report (AR4) of the Intergovernmental Panel on Climate Change (IPCC) (IPCC, 2007a) confirmed that human actions are changing the earth's climate and creating major disturbances in human systems and ecosystems. The IPCC reports that the world has warmed by an average of 0.76° Celsius since pre-industrial times, and projects that the global average temperature is likely to increase further by 1.8°C to 4°C if no action is taken. Changes in temperature have already impacted natural and human systems—including reduced snow cover, declines in Arctic sea ice, thawing permafrost, more intense and longer droughts, and increased frequency of heavy precipitation events—and there are predictions of even more devastating impacts with future temperature increases. The Stern Review (2006) reports that there are large economic, environmental and social costs in not acting; and that the benefits of early global action to mitigate climate change will be far greater than the costs.

The ultimate objective of the United Nations Framework Convention on Climate Change (UNFCCC) is found in Article 2, where nations agreed "to achieve… stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system." Countries have yet to define what level of greenhouse (GHG) emissions would actually represent dangerous anthropogenic interference, although the Bali action plan (UNFCCC, 2007a) emphasizes that deep cuts in global emissions are needed and references the findings of IPCC Working Group III to the AR4 that noted that stabilizing CO_2-eq at between 445 and 490 parts per million, resulting in an estimated global temperature 2°C to 2.4°C above the pre-industrial average, would require that emissions peak before 2015, with 50 to 85 per cent reductions on 2000 levels by 2050 (IPCC, 2007b: 39).

The European Union's (EU) objective is to limit global average temperature increase to 2°C compared to pre-industrial levels (Commission of the European Communities [CEC], 2007b, 2005c).

The G8 (2007: 2) struck an agreement in Heiligendamm, Germany, in June 2007 that stated that: "in setting a global goal for emissions reductions… we will consider seriously the decisions made by the European Union, Canada and Japan, which include at least a halving of global emissions by 2050."

The EU is an established leader in developing clean energy technologies and in promoting strong climate change mitigation actions, with the result that it has the potential to be a major global partner in the transformation from a high-carbon to a low-carbon global economy. The 2007 integrated energy and climate package for Europe, the EU Emissions Trading Scheme (EU ETS) and the Strategic Energy Technology Plan will, if properly implemented, help position EU as a competitive leader in clean energy technologies over the next few decades. The integrated climate and energy policy commits the EU to cut GHG emissions by at least 20 per cent by 2020, and will increase this to 30 per cent if other developed countries agree to collectively meet this target and more advanced developing countries agree to contribute according to their responsibilities and respective capabilities. The new policy also commits the EU to improve energy efficiency by 20 per cent by 2020, raise the share of renewable energy to 20 per cent by 2020 and increase the level of biofuels in transportation fuels to 10 per cent by 2020 (Council of the EU, 2007).

The EU has demonstrated resolve to remain at the forefront of global efforts to reduce GHG emissions, but achieving the EU's long-term goals in the areas of climate change and energy will depend significantly on what happens outside the EU, including in developing countries with major and growing economies. The competitiveness of European industries is framed as being contingent on maintaining a level playing field internationally in terms of costs of energy and climate mitigation (Nilsson and Nilsson, 2005), and industry is worried that a "going it alone" strategy will undermine Europe's global competitiveness and has stressed the need for developed and developing countries to join together to create a global strategy (Union of Industrial and Employers' Confederations of Europe, 2007).

This is especially true in the case of the large developing countries that are experiencing powerful economic growth, as well as a commensurate rise in aggregate GHG emissions. Five of these countries are the focus of this report and are referred to as the BICSAM nations: Brazil, India, China, South Africa and Mexico. These countries are still developing and have significantly lower economic indicators and GHG emissions per capita than European countries; but, that said, per capita emissions make little difference to the atmosphere. What matters environmentally are the gross emissions. Large populations and rapid growth in the BICSAM countries means the contribution of these countries in terms of absolute GHG emissions is sobering. China is reported to have overtaken the United States as the world's largest emitter of carbon dioxide (CO_2) in 2006 (Netherlands Environmental Assessment Agency, 2007). Similarly, the rising economic power of the BICSAM nations makes them global competitors with industry whose influence is significant. EU industry

raises legitimate concerns about competiveness and the importance of multilateral action in achieving EU goals.

The purpose of this report is to analyze the external dimensions of the EU integrated climate change and clean energy policy package, examining opportunities and prospective actions to encourage progressive partnerships with BICSAM countries to pursue low-carbon development.

This report is developed with a number of caveats:

- The report assumes that developing countries will not go forward without major developed countries already engaged and taking the lead in agreeing to internationally binding mitigation commitments. Hence, for the purposes of this study, it is assumed that major developed countries (particularly the United States), in one form or another, are actively pursuing policies and measures that are carbon constrained;
- Russia is one of the original "BRICSAM" countries, but Russia is not a focus of analysis in this study because EU relations with Russia on energy and climate change are different than with BICSAM nations (Russia is listed under Annex B of the Kyoto Protocol and thus has an emissions reduction target, and Russia and the EU have a mutually-dependent relationship based on energy);
- Although the report discusses the "BICSAM" countries as a group, it is understood that each of the five nations—Brazil, India, China, South Africa and Mexico—is unique and has its own set of challenges and opportunities in addressing climate change and clean energy. It is understood that broad suggestions and recommendations put forward in the report will need to be tailored to each country's distinct circumstances; and
- Arguably, other countries could be included in this analysis, such as South Korea, Indonesia and a number of the countries of the Association of Southeast Asian Nations (ASEAN). Many of the suggestions put forward could have applicability to these countries.

The report begins with an overview of EU policies in the area of energy and climate change to provide context for the following analysis. Section 3 makes the case for constructive engagement of partnering with BICSAM nations in climate change and clean energy efforts. Section 4 examines opportunities for the EU to work with BICSAM countries, looking at opportunities in the areas of financing and investing, development cooperation and trade policy. The paper concludes with recommendations for new dynamics in engaging BICSAM nations, putting forward potential action items that can help to meet climate and clean energy objectives.

2.0
The EU Policy Context

The EU's 2007 initiative to develop a sustainable integrated European climate and energy policy has attracted considerable attention both within and outside the EU. While most public interest has focused on the series of binding targets for GHG reductions, renewables or biofuels, another initiative—possibly even more important—is the attempt to develop a coherent internal and external energy strategy or "vision" to ensure the competitiveness of European industries, while at the same time combating climate change and ensuring security of energy supply.

Most policies that form part of the EU energy package have a long history, (e.g., environment, climate change, nuclear, development, research, energy technology and the internal market). The main innovation is the attempt to increase the coherence of different objectives, notably energy security and climate change, and thereby align domestic policy objectives with the EU's external policies and create necessary procedures and mechanisms. The package attempts to tackle the trade-offs of three principal long-term objectives: i) security of supply, notably growing import dependence; ii) the need to drastically reduce GHG emissions in the interest of the environment; while iii) maintaining the EU's international competitiveness.

2.1 EU Energy Policy Context

EU energy policy needs to be seen in the context of a limited EU competence subject to stricter boundaries than the ones imposed on national energy policies. For almost 40 years, EU energy policy has, in principle, been confined to the narrow fields of nuclear energy and coal, deriving its authority from the treaties of the European Coal and Steel Community—now abolished—and of the European Atomic Community (Euratom). Periodic attempts to extend the EU's jurisdiction in times of real or perceived threats to energy supplies remained unsuccessful. Outside these two sectors, EU policy has been limited to a series of broad horizontal policy goals, such as promoting the rational use of energy and reducing Europe's oil-import dependency. Repeatedly, Member States have not accepted an energy chapter in the EU's most important treaty, the Treaty on the European Community. As a result, EU energy policy largely relies on intergovernmental cooperation in which each Member State exercises veto power. This means that agreed policies seldom go beyond a broad consensus on general objectives (e.g., agreeing that EU energy policy should bal-

ance competitiveness, the environment and external relations). Substantially, this has meant that energy policy has been driven by a great number of EU competences other than energy, such as the internal market provisions (e.g., the opening of energy markets to competition, technical harmonization, tax approximation or public procurement), competition policy and, more recently, environment and climate change.

A principal element in formulating EU energy policy initiatives therefore is to identify the *European added value* to national energy policy-making. Such a European *added value for internal policies* is typically the case for the further development of the EU's internal energy market, but also to ensure that national approaches to security of supply, the environment or technology do not undermine the internal market.[1] Other important areas are research and development (R&D) cooperation such as in the case of ITER[2] on nuclear fusion or the EU's R&D Framework programs. A European *added value for external policies* is increasingly seen as promoting EU values and policies in international fora or through bilateral agreements, or in some cases, even the EU model of integration (e.g., Mercosur or ASEAN), which is sometimes dubbed "Europeanization."

2.2 Motivation of the EU Integrated Climate and Energy Package

It is important to note that the EU climate and energy package has been facilitated by a changing environmental, economic and geo-political context.

- EU reserves for oil and gas are dwindling. In some countries, which could fill the gap, energy industries are subject to extensive government interference, raising doubts as to whether the necessary investment will happen. Some other supplier countries are politically unstable. Many reserves will take years to develop due to problems of access, investments and physical conditions.
- The EU's internal market for electricity and gas is still developing, far from well functioning and currently consists of different national or regional markets. Without an efficient internal market, the EU response to international challenges is likely to lack efficiency (imposed by market discipline), lose competitiveness and risk the possibility that Member States will resort to national solutions, further undermining the internal market.

1 For a discussion of the *European added value* to national energy policy-making, see Egenhofer and Gialoglou (2004) and Jansen *et al*. (2005)

2 ITER was formerly interpreted to stand for International Thermonuclear Experimental Reactor. This usage has been discontinued.

- There is a strong and ambitious commitment to energy efficiency and conservation in the EU and most other Organisation for Economic Co-operation and Development (OECD) countries. Many technological options—such as for exploration and extraction, renewables, nuclear or clean coal—exist that can over time address the security of supply, climate change and competitiveness challenge.
- The reports by Stern (2006) and the IPCC (2007) reinforce the long-term sustainability challenge, more specifically, the problem of climate change. In the absence of a comprehensive global climate change agreement, the EU has taken on the task of providing signals for investments in more carbon-friendly investments, aiming for a near-zero carbon economy while preserving security of supply and competitiveness.[3]
- Internationally, despite the setback—or possibly because of the divisions—stemming from the Iraq war, EU capacity to agree on and implement foreign policy priorities has been increasing. Given the EU leadership on climate change following the 2005 climate change communication on *Winning the Battle Against Climate Change* (CEC, 2005c), the EU has implemented a policy to include climate change as an agenda item for each summit with third countries.

2.3 Current EU Internal Climate and Energy Policies

Doubtlessly, the EU integrated package has been the most conspicuous policy initiative for the EU in relation to climate change and clean energy. This policy framework was arrived at through considerable intergovernmental negotiation, and negotiations are ongoing as the EU seeks implementation mechanisms. The development of the climate and energy package involved preparedness to develop and implement formulae that allow for fair effort-sharing, given that the EU encompasses 27 countries with very different economic starting points, emission trajectories and domestic energy endowments. The challenges internal to the EU in developing and implementing the policy framework could provide lessons for establishing effective relationships to address climate and clean energy with BICSAM nations.

2.3.1 An Integrated Climate and Energy Policy

The EU climate and energy package manifested the EU's will to broaden its reflection on its future energy systems, taking into account increasing market

3 The spring 2005 European Council endorsed the target of limiting the future global average temperature increase to 2°C above its pre-industrial level and indicated willingness to explore with other countries the possibility of reducing GHG emissions from industrialized countries by 15 per cent, which would mean a reduction of 30 per cent from a 1990 level by the year 2020.

liberalization and globalization, environmental pressures, technological challenges and growing import dependency from politically unstable regions. Six priority areas were identified: i) external policy (including development); ii) security and competitiveness; iii) EU solidarity; iv) climate change; v) technology; and vi) the completion of the internal electricity and gas markets. EU heads of state and governments at their March 2007 European Council meeting by and large endorsed the European Commission's climate and energy strategy including:

- a binding absolute emissions-reduction commitment of 30 per cent by 2020 compared to 1990 levels conditional to a global agreement,[4] and a "firm independent commitment" to achieve at least a 20 per cent reduction by 2020. At the same time, the EU advocated that industrialized countries reduce their emissions collectively by 60 to 80 per cent by 2050 compared to 1990. The European Parliament in its resolution has insisted that the EU should commit unilaterally to 30 per cent;
- a 20 per cent reduction of primary energy consumption by 2020 compared to projections;
- a binding target of 20 per cent of renewable energy in total energy consumption by 2020;
- a binding minimum target of 10 per cent biofuels for all transport fuels by 2020; and
- the development of a European Strategic Energy Technology Plan (Council of the European Union, 2007).

In addition, the European Council has endorsed the carbon capture and storage (CCS) policy, which outlined the European Commission's intention to bring forward a legal and policy framework for carbon capture and geological storage by the end of 2007, as well as an incentive framework, support programs and external elements such as technology cooperation with key countries (CEC, 2007e).

On January 23, 2008, the European Commission proposed measures to implement the European Council decisions. The "climate action and renewable energy package" sets out the contribution expected from Member States and a series of measures, including:

- Enhanced EU ETS – The expanded system will include more GHGs and involve all major industrial emitters. Emissions from the sectors covered by the system will be reduced by 21 per cent from 2005 levels by 2020. A

4 Provided that other developed countries commit themselves to "comparable" reductions and economically more advanced countries contribute "adequately" according to responsibility and capabilities.

single EU-wide cap on ETS emissions will be set and free allocation of emission allowances will be progressively replaced by auctioning of allowances by 2020. Revenues resulting from the ETS will be used by individual EU countries to support clean energy innovation, as well as help developing countries adapt to climate change. Companies will have access to the Clean Development Mechanism (CDM), but the use of credits will be limited to the levels used in the current ETS period. Access can be increased once an international agreement is signed, providing incentive for third countries to sign up to a post-2012 agreement, in the knowledge that European investment and technology could flow as a result.

- Emission reduction target for sectors not covered by the ETS – The target for these sectors, such as buildings, transport, agriculture and waste, is emission reductions of 10 per cent below 2005 levels by 2020. Specific targets will be set for each country according to their relative wealth, with national emission targets ranging from -20 per cent to +20 per cent. Some reductions will be driven by EU measures; but otherwise individual countries will determine where to concentrate their efforts. They will have access to CDM credits to cover almost one third of their reductions.
- Legally enforceable targets for each Member State for increasing the share of renewable energy – Efforts required to reach the renewable energy target will differ between countries, which will put forward national action plans that set out how they intend to meet their target and monitor progress. The target of a minimum 10 per cent use of biofuels is the same for each country. The new proposal sets out minimum criteria for the GHG performance of biofuels, establishes binding criteria for biodiversity and bans certain types of land use changes. The criteria apply equally to domestically produced and imported biofuels.
- Carbon capture and storage – The package promotes the development and safe use of a suite of CCS technologies. A European Industrial Initiative will bring together key actors on the technology, and revised guidelines on state aid for environmental protection will enable governments to support CCS demonstration plants (CEC, 2008).

The proposed climate action and renewable energy package is linked to other EU policy frameworks as its implementation is expected to enhance energy security, create jobs, provide opportunities for small and medium enterprises, and promote innovation and R&D.

2.3.2 Beyond the EU Integrated Climate and Energy Policy

EU objectives on climate change and clean energy are not limited to the integrated package. There are a number of other initiatives that affect internal and

external policies, including relations with developing countries, and include the Lisbon Strategy for Growth and Jobs; Industrial Policy; Sustainable Development Strategy; EU ETS; Car Emissions; R&D Framework Programme; and the Intelligent Energy – Europe Programme.

Lisbon Strategy for Growth and Jobs

The Lisbon Strategy to achieve higher economic growth, greater competitiveness in world markets and full employment by 2010 was adopted by the European Council in March 2000, and further developed during subsequent Council meetings. It consists equally of economic, social and environmental pillars. The environment pillar recognizes that sustainable development objectives could present significant economic opportunities, with the potential to unleash a new wave of technological innovation and investment in sectors such as energy and transport; and research on energy efficiency, renewables and clean energy technologies, as well as incentives to promote their use.

The mid-term review in 2005 judged the outcomes of the Lisbon Strategy as very disappointing, and the strategy was revised with more focus and realistic aims (CEC, 2005a). The revised strategy reiterated the need for Europe to take the lead in shifting to more sustainable patterns of production and consumption, with a focus on eco-innovations notably in the sectors of transport and energy. The EC continues to identify significant potential for economic, environmental and employment synergies from environmental technologies and energy efficiency, supported by increased research and technology dissemination efforts, including leveraging private finance through the European Investment Bank to promote the development and uptake of low-carbon technologies.

Industrial Policy

Climate change and clean energy have also started to figure more prominently in the EU's industrial strategy. The mid-term review of industrial policy entitled *A Contribution to the EU's Growth and Jobs Strategy* (CEC, 2007c) concluded that EU industry is well placed to respond to competitiveness, technological and climate challenges and turn these into an opportunity. According to the European Commission, environmental industries in Europe are at the global forefront of technologies generating a turnover of approximately 2.2 per cent of EU GDP and employing 3.4 million people. Regulatory and other obstacles, such as the absence of an internal market and a global approach to climate change that limits the market size for low-carbon and resource efficiency, will be addressed by an Action Plan in 2008.

In line with the 2007 Spring European Council Conclusions, EU industrial policy is meant to create incentives to unlock the full potential of low-carbon

and resource-efficient goods, technologies and services in the EU. The strategic aim is to encourage all enterprises to have the highest profile in energy and resource efficiency, use low-carbon technologies and lead worldwide markets for low-carbon products. To avoid a loss of competitiveness by EU energy-intensive industries, there is a need for an appropriate framework comprising, among others, an external energy policy in international relations, trade policy and industrial dialogue to encourage and support sustainable energy and climate change policies in partner nations such as China, India and other developing countries.

Sustainable Development Strategy

Climate change has been an, if not *the* core, area of the European Sustainable Development Strategy (SDS); having been cited in a number of initiatives, especially between 2001 and 2004, ahead of the entry into force of the Kyoto Protocol.[5] The identification of several unsustainable trends that worsened after 2001, including climate change (CEC, 2005b), led to the revision of the EU's sustainable development strategy in 2006 and the adoption a revised strategy (Council of the European Union, 2006b). The revised strategy sets overall objectives, targets and concrete actions for seven key priority challenges for the coming period until 2010. These targets and actions—including meeting Kyoto Protocol commitments; recognizing the importance of energy policy; integrating mitigation and adaption in all relevant policies; and setting renewable energy targets for energy consumption, biofuels targets and energy efficiency—influenced the EU's subsequent integrated climate and energy package, with some of the objectives superseded by the European Council decisions in March 2007.

EU Emissions Trading Scheme

The EU ETS is the self-declared flagship of EU climate change policy. Launched in 2005, the EU ETS is the first cross-border tradeable permit or emissions trading scheme to address GHG emissions. It covers CO_2 emissions from large industrial and energy installations only from a limited number of

5 Such initiatives included for example the European Climate Change Programme; Kyoto Ratification; EU ETS; participation in the Johannesburg Renewable Energy Coalition; Intelligent Energy – Europe; Activities of the EU in the energy sector; Green Paper: *Towards a European strategy for the security of energy supply*; The Knowledge Economy and Climate Change Legislation: New and renewable energies; Directive on energy performance of buildings; Directive on the promotion of electricity produced from renewable energy sources; Directive on the promotion of cogeneration of heat and power; Directive on the taxation of energy products and electricity; and Directive on the promotion of biofuels or other renewable fuels for transport.

sectors.[6] Credits from the Kyoto Protocol's project mechanisms, the CDM and Joint Implementation (JI) can be used for compliance within limits.[7] After a number of shortcomings, the EU ETS is currently being revised to be made fit for the post-2012 period. Revisions include: expansion to new sectors (e.g., other industrial installations and transport, including aviation); inclusion of non-CO_2 GHGs covered by the Kyoto Protocol; competitiveness and distributional effects; future (i.e., post-2012) allocation methodologies, including the possibility of using benchmarks; consistency with environmental and other policies; monitoring, verification and registry issues; and determination of the relationship with International Emissions Trading. Other issues that have emerged include complexity and distortions to competition in the internal market and investment incentives. A proposal to include maritime transport in the EU ETS is also expected. A particular focus will be linking the EU ETS to other GHG emissions trading schemes, once they are operational.

There is a clear consensus in the EU to accept CDM and JI credits of existing projects beyond 2012. There is also interest in expanding the CDM to include sectoral or programmatic CDM. On the other hand, given that the EU ETS may continue for some time to be the major source of supply, most Member States and the European Commission favour quantitative restrictions to avoid CDM and JI credits flooding the market. There is also concern about the quality of credits and the continuation of some kind of qualitative restrictions for credits should be expected. Land use, land-use change and forestry (LULUCF) is very controversial; while it's acknowledged that LULUCF may provide additional incentives for developing countries, there are concerns about permanence and quality of credits.

Car Emissions

In the past, the principal pillar for dealing with CO_2 from cars—some 20 per cent of total European CO_2 emissions—has been a voluntary agreement by

6 These sectors include electricity and heat generation, cement production and pulp and paper production, which alone represent a total of some 40 per cent of total EU CO_2 emissions. Additional sectors include other industries (e.g., refining, coke ovens), iron and steel, glass, ceramics and paper and board. The EU ETS was to cover about 46 per cent of total EU CO_2 projected emissions in 2010, equivalent to 38 per cent of the EU's total GHGs in 2010. For an authoritative overview on the design of the ETS, see Meadows (2006) and Vis (2006).

7 The CDM, JI and International Emissions Trading are flexibility mechanisms under the Kyoto Protocol. The CDM is the only mechanism that allows developing countries an opportunity to participate in the carbon market. Under the CDM, a project or program of activities in a developing country can generate credits (certified emissions reductions—CERs) that be used by Annex I parties to meet emission limitation commitments. With JI, an Annex I party can invest in an emission reduction project in another Annex I country and use the credits to offset its national reduction target. International Emissions Trading allows Annex I countries to buy and sell parts of each country's Assigned Amount Units.

car producers from the EU, Japan and Korea to limit average CO_2 emissions from light-duty vehicles to 140g/km by 2008–2009. This would have represented a reduction of around 25 per cent compared with the mid-1990s. In addition, EU legislation requires mandatory labelling and provision of consumer information at the point of sale about each car's fuel economy and CO_2 emissions. Third, the European Commission has proposed legislation that would require Member States levying car registration taxes and/or circulation taxes to relate at least 50 per cent of the tax to the level of a vehicle's CO_2 emissions. A final element has been an indicative EU target of achieving a 5.75 per cent share for biofuels in the petrol and diesel market by 2010.

As a result of automobile manufacturers being expected to miss the 2008 voluntary commitment, the European Commission (CEC, 2007d) proposed new legislation in December 2007 that sets a binding target for new cars of 120g/km by 2012. Car producers will bear most of the responsibility for this reduction, as they will have to realize new vehicle technology improvements to bring their emissions down to 130g/km. The other 10 grams will have to be reached through complementary measures such as further use of biofuels, fuel-efficient tires and air conditioning, traffic and road-safety management, and changes in driver behaviour.

(Seventh) R&D Framework Programme

The Seventh Framework Programme for Research and Technological Development (FP7) is the EU's main instrument for funding research in Europe. EU R&D programs bundle multi-disciplinary research-related EU initiatives together under a common roof in order to ensure coherence of priorities and consistency in management.

FP7 places greater emphasis than in the past on international cooperation activities. The core of FP7 is the Cooperation Programme to foster collaborative research across Europe and with international partners, according to several key thematic areas, including among others, energy, and environment and climate change, with dedicated budgets of €2.3 billion and €1.8 billion, respectively, for the period 2007–2013 (European Commission, 2006). The environment theme under FP7 comprises specific international cooperation actions, which address research problems of mutual interest and benefit between the EU and international cooperation partner countries.[8] Concrete activities include hydrogen and fuel cells, renewable electricity generation, renewable fuel production, renewables for heating and cooling, CCS, clean

8 International cooperation partner countries are from the African, Caribbean and Pacific (ACP) countries, Africa, Asia, Latin America, Central Asia, Mediterranean Partner Countries and others (Cordis, 2007).

coal technologies, smart energy networks, energy efficiency and knowledge for energy policy-making. Climate change activities focus on: understanding the scientific basis; the identification and development of environmentally-friendly technologies, tools and services; and policy-related research, for example on sustainability impact assessments of EU policies, follow up to Kyoto and post-Kyoto actions on climate change.

Intelligent Energy – Europe Programme

One of the principal financial instruments to support the EU energy and climate strategy is the Intelligent Energy for Europe Programme. From 2007, the program has been broadened to make it part of the Competitiveness and Innovation Framework Programme, which aims to encourage the competitiveness of European enterprises. Activities support eco-innovation, renewable energies, energy efficiency, energy-efficient transport, as well as horizontal issues such as financial mechanisms and incentives, monitoring and evaluation, and energy education. Approximately €50 million is available for 2008. The program includes "Community cooperation with developing countries projects," which focuses on capacity building and training. Links are drawn to the EU climate and energy package for poverty alleviation and sustainable development in Africa, Asia, Latin America and the Pacific (European Commission, 2008).

EU Climate and Energy Policies: The Way Forward with Developing Nations

Based on the rationale that climate change will significantly affect poverty reduction, the General Affairs and External Relations Council adopted in 2003 an Action Plan on Climate Change and Development (2004–2008) as an integral part of EU development cooperation activities. This plan promotes dialogue and cooperation with partner countries, as well as with the Community and other donors. These activities encompass: the integration of climate-risk management into developing countries' planning processes; the provision of research assistance on impacts, vulnerability and adaptation; and supporting developing countries to integrate the pursuit of low-GHG development paths into the planning process. Activities also include: encouraging the private sector to invest in mitigation and low-GHG development; encouraging the diffusion of environmentally sound technologies; and promoting the development of human and institutional capacities for the implementation of the UNFCCC and the Kyoto Protocol (CEC, 2003).

Beyond 2008, the Directorate-General for Development plans to implement the Global Climate Change Alliance that will keep the plan at its core but go beyond mainstreaming and research. The alliance will target: concrete adap-

tation; climate-related disaster-risk reduction; the CDM; avoiding deforestation; and the establishment of regional and national climate change partnerships.

2.3.3 Concluding Comments

The EU has developed a comprehensive policy framework that puts forward climate change and clean energy goals while accounting for growth and competitiveness concerns. There have been, and continue to be, challenges in climate and clean energy policy development and implementation that could provide important lessons and considerations for EU engagement with BICSAM countries. Reaching agreement on climate and energy policy goals in the EU has not been easy. Effort-sharing and ongoing negotiations are necessary parts of the process to bring together a number of Member States with different emission profiles and economic starting points.

The effort to form a coherent common vision across the EU has been vital in the climate and energy policy development process. An important step in developing an integrated climate and energy policy has been the acceptance of an EU economic development model that is "fit for purpose": i.e., it is perceived to be relevant and sustainable in a 2020 world with uncertain climate change, oil prices and security pressures. The use of an integrated approach in preparing an economic development model (including attendant industrial, security, social and other policies) is a core step in accepting an integrated climate and energy policy, and will need to be a consideration when planning activities to engage BICSAM nations. Furthering climate and energy goals in these developing nations will require integrated programs in a number of sectors beyond environment and energy, such as industry, transportation, building infrastructure, agriculture and forestry.

3.0
The Case for Progressive Partnerships with BICSAM Nations

The EU has taken on ambitious climate and clean energy goals. Despite best efforts at home, attaining the overall environmental goal of avoiding dangerous anthropogenic interference with the global atmosphere will depend significantly on what happens in developing countries, especially the BICSAM nations characterized by high economic growth and rapidly growing emissions. Engaging these countries in clean energy and climate change efforts will require a strategy that accounts for their particular needs, including economic growth, energy investment, and vulnerability to climate change impacts. In each country, the EU will need to acknowledge and build on domestic actions that have been taken to address the climate change and clean energy challenge. These unilateral actions are not insignificant; the Center for Clean Air Policy estimates that the combined emission reductions in China, Brazil and Mexico from domestic measures will "be greater than reductions under the Kyoto Protocol (without the US), EU's reduction commitments in 2020, and reductions estimated in current US legislative proposal in 2015" (Ogonowski *et al.*, 2007: 2).

While historical emissions of GHGs contributing to anthropogenic climate change have been mainly from developed countries, an increasing share is coming from developing countries. The International Energy Agency (IEA, 2006a) reported that over the 1990–2004 period, total fossil fuel combustion emissions of CO_2 increased about 28 per cent worldwide, with four per cent of this increase taking place in Annex I countries and 76 per cent in non-Annex I countries. The Energy Information Administration (EIA, 2007b: 73) reported that in 2004, non-OECD emissions of CO_2 were greater than OECD emissions for the first time; and by 2010, developing countries will emit nearly 20 per cent more CO_2 emissions than developed countries. Rising populations, income levels and energy use are leading to rapid increases in GHG emissions in developing countries, which are critically important on an aggregate basis.

This means that action by the EU and other developed countries will be insufficient in preventing dangerous anthropogenic interference with the global

atmosphere. Meeting the EU goal to limit global warming to no more than 2°C above pre-industrial levels means that GHG emissions will need to be reduced in developed countries by 60 to 80 per cent by 2050; and that many developing countries will also need to significantly reduce emissions (CEC, 2007b: 3) notes that. The Stern Review (2006) seconds this view, noting that the world will have little chance of effectively addressing the climate change threat unless leading developed and developing nations act together to reduce their emissions.

The BICSAM nations, with rapidly accelerating economies and large populations, have significant impacts on trading, markets and emission trends. As a group, these five nations comprised 43 per cent of the global population, 11 per cent of global GDP and attracted 13 per cent of foreign direct investment (FDI) in 2005 (see Table 1). The rising economic power of the BICSAM nations makes them global competitors whose influence is significant, and they are changing consumption and production patterns in the world economy. These countries are now competitive with EU countries on a range of products and services.

Table 1: Select Indicators for BICSAM Nations (2004)

Country	Population (millions) 2004 UN	Population % of world	CO_2 emissions (Mt of CO_2) IEA	CO_2 emissions share of world total	CO_2 emissions per capita (Mt/CO_2/ population)	GDP (billion 2004 $)	GDP % of world	GDP per capita 2004	GDP Annual Growth Rate (%) 1990–2004
Brazil	183.9	2.9%	329.28	1.2%	1.77	$604	1.5%	$3,284	1.20
India	1,087.1	17.0%	1,147.46	4.2%	1.05	$691	1.7%	$640	4.00
China	1,308.0	20.5%	5,059.87	18.6%	3.88	$1,932	4.7%	$1,490	8.90
South Africa	47.2	0.7%	330.34	1.2%	7.04	$213	0.5%	$4,675	0.60
Mexico	105.7	1.7%	389.42	1.4%	3.70	$677	1.7%	$6,518	1.30
BICSAM	2,731.9	42.8%	7,256.37	26.7%	2.66	$4,116	10.1%	$1,507	
Non-OECD	5,224.4	81.8%	14,226.00	52.4%	2.72	$7,819	19.1%	$1,497	3.00[a]
OECD	1,164.8	18.2%	12,910.00	47.6%	11.02	$33,031	80.9%	$28,453	1.80
EU-15	383.5	6.0%	3,267.01	12.0%	8.52	$12,213	29.9%	$31,846	
EU-27	487.6	7.6%	3,975.86	14.7%	8.15	$12,901	31.6%	$26,459	
World	6,389.2	100.0%	27,136.00	100.0%	4.22	$40,850	100.0%	$6,588	1.40

[a] Growth rate for developing countries only, it does not include Central and Eastern Europe and the CIS.
Sources: IEA, 2007, pp. 48–57; UNDP, 2006, pp. 297–300; 331–334; 353–357.

The BICSAM nations account for significant and growing proportions of global energy consumption. In 2005, collectively these countries consumed

around 23 per cent of the world's total primary energy consumption; 17 per cent of oil; six per cent of natural gas; and 47 per cent of global coal (EIA, 2007a). BICSAM nations produced 27 per cent of global CO_2 emissions in 2005, and IEA (2006a: Part III) figures indicate that GHG emissions in BICSAM nations increased from 7,512 Mt in 1990 to 9,940.2 Mt in 2000—a 32 per cent increase—while global GHG emissions increased by 14 per cent in the same time period.

But it is important to remember that while on an aggregate level these countries have huge populations, large wealth and rising GHG emissions, on a per capita basis their incomes and emissions remain far below those of industrialized nations (as shown in Table 1). Average per capita CO_2 emissions averaged 2.66 Mt in BICSAM nations in 2004, compared to 11.02 Mt in OECD countries and 8.15 Mt in the EU. GDP per capita averaged only US$1,507 in BICSAM countries, compared to US$28,453 in OECD countries and US$26,459 in the EU. As well, levels of poverty remain high in these countries; UNDP (2006: 292–293) figures indicate that the percentage of the population living on less than US$2 a day ranges from 20 per cent in Mexico to 80 per cent in India (the figures for the other BICSAM nations are: Brazil – 21 per cent; South Africa – 34 per cent; and China – 47 per cent).

The BICSAM nations are taking action in the areas of climate change and clean energy, briefly discussed here, but described in greater detail in Annex 1. China released its National Climate Change Programme in 2007, which sets out a series of policies and measures to address climate change in the overall context of sustainable development. Previously announced government goals include improving overall energy efficiency by 20 per cent by 2012 compared to 2005 levels, and increasing the use of renewable energy up to 10 per cent by 2020. South Africa finalized a GHG inventory in 2006, which will inform the country's first long-term national climate policy, expected to be published in 2008–09. The African National Congress, South Africa's ruling party, released a Resolution on Climate Change in December 2007 that calls for setting a target for GHG emission reductions. Brazil has adopted a national plan on the control of deforestation and a program on alternative energy sources. As well, the country has a long history of fuel ethanol use and a current government mandate of 25 per cent ethanol blending in gasoline. India is in the process of developing a comprehensive national policy on climate change issues, including a reforestation program. Mexico released its National Strategy for climate change in May 2007 and an official climate plan for the country is under development; recent policies have focused on expanding renewables and increasing energy efficiency.

While it is critically important that developing countries and in particular the BICSAM nations begin to cut emissions, EU policies and programs to encour-

age reductions in these countries must be cognizant of current climate and clean energy policies and programs, as well as the significant disparities in wealth and per capita emissions. This also has implications in UNFCCC negotiations where BICSAM and other developing nations maintain that developed countries must act first because of the differences in per capita emissions and income, as well as their historical responsibility for the problem.

The importance of engaging these major emitting economies is evident in the number of multilateral climate change processes and fora that include some or all of the BICSAM nations:

- BICSAM nations and the EU and/or members of the EU are partners, along with other nations, in a number of multilateral technology agreements, including the Carbon Sequestration Leadership Forum, Methane to Markets, International Partnership for the Hydrogen Economy, ITER and the Global Nuclear Energy Partnership;[9]
- The World Bank's (2007) Clean Energy for Development Investment Framework focuses on the five countries referred to as the BICSAM nations in this paper in its support for the transition to a low-carbon economy. Efforts will promote energy efficiency, renewable energy and transportation; new product development especially with regard to carbon finance; and strategic partnerships with the Global Environment Facility (GEF);
- The Gleneagles Summit and the Heiligendamm Process of the G8 has recognized the need for an institutionalized dialogue with the important emerging economies referred to as the Outreach 5 (which are the same as the BICSAM nations discussed in this paper). In 2007, the G8 agreed to launch a new form of cooperation with the five economies, initiating a dialogue on relevant issues in the areas of innovation, investment, joint responsibilities for development in Africa, and improving energy efficiency and technology cooperation with the aim of contributing to reducing CO_2 emissions (Federal Government of Germany, 2007); and
- The Major Economies Meeting on Energy Security and Climate Change, hosted by the United States, included the five BICSAM nations, and the European Commission and EU.

9 The European Commission and the five BICSAM countries are members of Carbon Sequestration Leadership Forum; Methane to Markets includes Brazil, India and China, and Germany, Italy, Poland and the United Kingdom from the EU; ITER includes the EU, China and India; the International Partnership for the Hydrogen Economy includes the European Commission, China and India; and the recently formed Global Nuclear Energy Partnership includes the EU nations of France, Bulgaria, Hungary, Lithuania, Poland, Romania and Slovenia, as well as China.

Obviously, the EU is not alone in wanting to engage the big developing country emitters in clean energy and climate change efforts, which can not only help to meet environmental goals, but also promote sustainable economic growth. These countries are important trading partners, and increased technology cooperation and dissemination could help increase access to BICSAM markets for advanced clean energy technologies.

The EU has engaged with each of these nations to varying degrees on a bilateral basis, with high-level summits and focused energy initiatives being common means to discuss issues related to energy and climate change. Examples include: the EU-India energy panel; emphasizing biofuels in the joint declaration with Brazil; action plans on clean coal and industrial cooperation on energy efficiency and renewable energy with China; and promoting cooperation in the energy sector in the global agreement with Mexico. Annex 1 includes additional information about EU relations with BICSAM nations.

It makes sense for the EU to initially focus on BICSAM nations when it comes to GHG mitigation policies and activities. Indeed, it could be argued that initial efforts should be focused on China and India, as emission limits or cuts in these countries have the potential to have a huge impact on meeting global reduction goals because of the massive size of their populations and economies, and their level of economic growth. Engaging all five of the BICSAM nations, because of their elevated economic growth and increasing regional and international influence, would likely have important ripple effects in other developing countries throughout the world.

4.0
External Dimensions of EU Clean Energy and Climate Change Policies

Supporting climate change and clean energy objectives in BICSAM nations requires explicit and focused action that uses existing cooperation and diplomatic frameworks, and considers new approaches. EU external relations with BICSAM countries are primarily bilateral, but are supplemented with multilateral and regional agreements.[10] EU policy recognizes the need for differentiation and a multi-speed approach dependent on the characteristics of the developing country (Fujiwara and Egenhofer, 2007). This reflects the understanding that countries have different starting points with different levels of capacities, and are at different stages of development or reform.

This point is important for this report. While broad strategies are presented for EU engagement with BICSAM nations in the areas of clean energy and climate change, the differences between these nations, and between the BICSAM nations and other developing nations, calls for focused bilateral action. Brazil is unique in that three-quarters of its emissions are due to deforestation and the country is a leader in biofuels. Mexico is a major oil exporter where oil export earnings make up one-third of government revenues. China, India and South Africa are growing rapidly and are likely to have a continued reliance on coal to meet growing energy demand; and all are looking to increase nuclear in their energy mix. While both China and India have a growing middle class, they both also have large sections of their populations that face considerable poverty. Both countries have large populations, huge economies and an ability to have influence in the Asian region as well as Africa.

The EU has sought for a considerable time to develop an energy and climate policy that would allow it to "speak with one voice" to the international community. However, the concept of speaking with one voice overlooks the fact

10 One of the most important agreements is the Economic Partnership Agreements for ACP countries, of which South Africa is a partner. The EU has formed a structured political and economic association with 77 developing ACP countries, principally former EU Member States' colonies. Unlike other regional groups, the importance of their role as the EU's trading partner remains marginal as the big majority are among the least developed countries (LDCs).

that EU Member States pursue varying national interests stemming from differences in their degree of liberalization, energy mix, their particular economic/industrial niches, the level of diversification and even differences in foreign policy objectives. Procedural changes to ensure greater coherence, at least to an extent, are currently under discussion. This will mean that only those issues where a consensus exists will be put on the agenda of summits with third countries.

The European Commission's announcement to put energy issues on the agenda at every summit with third countries is an important step. From an EU perspective, key issues will be energy efficiency (as this reduces global demand and GHG emissions), investment in production and infrastructure (to increase competition and ensure adequate supply), market access (for European and international energy companies) and climate change policies (to reduce global GHG emissions), as well as other environmental and safety issues, especially in regard to nuclear energy.

This section examines innovative foreign policy approaches that might be employed by the EU to further partnerships with the BICSAM nations in the areas of clean energy and climate change. Recognizing that EU foreign policy statements and policies will ultimately decide what approach to take and how to implement it, this section attempts to think outside the box (not too far, though) and posit some new ideas in the foreign policy areas of financing and investing, development cooperation and broader bilateral engagement, and trade policy.

4.1 Financing and Investing

Most of the elements to engage BICSAM countries discussed in this paper require some form of financial incentives. Billions of dollars will be needed to support climate and clean energy activities in these nations; and while all countries will likely bear the majority of costs associated with climate change through their own domestic financial resources, support and transfers from developed countries will be needed. The UNFCCC (2007b: 170) indicates that the additional investment and financing needed by 2030 for an effective response to climate change is large compared with currently available funding under the convention, but small in relation to estimated global GDP (0.3 to 0.5 per cent) and investment (1.1 to 1.7 per cent) in 2030. While additional public funding for climate change mitigation and adaptation is needed, a substantial part of the additional investment and financing could be covered by available sources if the appropriate policies and measures are put in place. It further notes that it is important to focus on the role of private sector investments as they constitute the largest share of investment and financial flows (86 per cent).

Thus, any EU program of activities to assist BICSAM countries in pursuing a clean development path will need to include financial resources, activities to direct new investment and financing decisions toward climate-friendly technologies, and efforts to find innovative financing schemes. This section examines possible ways to increase financing and investment to support the external dimension of the EU's clean energy and climate change strategy, looking at investment law and public policy that can direct private sector financing in a clean energy direction.

4.1.1 Reforming Investment Law

Investment law reform is a means for the EU to encourage clean energy uptake in BICSAM countries. The primary potential rests in the flows of FDI for energy infrastructure that will take place over the coming decades. Most of the US$20 trillion of investment needed in the energy sector between now and 2030 will be in developing countries; with China alone needing to invest about US$3.18 trillion or 18 per cent of the world's total (IEA, 2006b). The challenge from a climate change and air quality perspective is to ensure that the bulk of that investment goes into clean energy technologies, rather than locking the world into a calamitous half century of new carbon- and pollution-intensive energy production.

Investment law as written in the myriad of bilateral and regional agreements (over 2,500 at last count) has little direct bearing on clean energy investment *per se*. But there are some elements in traditionally-formulated treaties that may serve as obstacles to policies governments might see as desirable to achieve climate change objectives. For example, most investment treaties fail to adequately define expropriation, leaving open the possibility that tough environmental regulations—because they cause economic harm to certain firms—might be challenged as indirect expropriation. A number of such uncertainties should be removed from investment agreements to help foster the spread of clean energy investment.

Perhaps more important, investment law could be used proactively as a tool for the promotion of such investment. The Energy Charter Treaty is an example of a specific agreement designed to promote energy investments, though there is no special treatment for clean energy.[11] The principle could be taken further, within the Energy Charter Treaty, or as a stand-alone sectoral investment designed to foster clean energy investment. After agreeing on what constitutes such investment, negotiators might seek to assemble a critical mass of

11 The Energy Charter Treaty aims to foster increased energy investment and trade primarily by strengthening investor protection. Members include the countries of Eastern and Western Europe, Central Asia, Japan and Australia.

unilateral commitments of market access for it, building on the "request-offer" model of negotiation pioneered under the World Trade Organization's (WTO) General Agreement on Trade in Services.

Such an agreement might also allow for the possibility of investor-state arbitration for clean energy investors, where this does not already exist. Many states already offer such protection to investors (not just in the context of clean energy) under existing investment agreements, but a significant number do not.

Finally, it might set out minimum standards of regulatory regimes that will foster clean energy investment at the domestic level (e.g., independent power producers purchase legislation, perhaps with preferential tariffs). This aspect would resemble the WTO's Agreement on Trade-Related Aspects of Intellectual Property Rights, which obliges signatories to create a regulatory regime that adequately protects intellectual property. Clearly, along with such obligations would need to come an adequately-funded program of capacity building to support the mandated regulatory reform.

If successful, such measures would have the effect of increasing opportunities for EU outward investors in the area of clean energy infrastructure.

4.1.2 Greening Private Sector Investments

Encouraging private sector investments is critical to generating the levels of financing needed for clean energy in BICSAM countries. Public financing and policy frameworks can act as catalysts, but most financing will need to come from the private sector. Effective policy frameworks will need to be: "loud, long and legal" to ensure that the right signals attract capital; the rules and incentives are stable and sustained; and the regulatory framework provides the basis for long-life capital-intensive investments (UNFCCC, 2004). The EU's integrated climate and energy package sets clear and strong policy objectives, and includes activities to establish a carbon price (EU ETS and CDM), as well as goals for energy efficiency, renewable energy and CCS that are not driven by the ETS in its current stage of development. EU engagement with BICSAM countries could include support for establishing strong, clear and legal climate and energy policy regimes to help green private investment and create meaningful roles for the private sector.

Member States of the EU have also established clear policy frameworks that can be used as examples. Denmark has used policies to build up one of the biggest renewable energy sectors in the world, currently comprising 15 per cent of the total energy supply; and Denmark has the lowest energy intensity in the EU, created by a concerted effort that includes stringent building and appliance codes, public service campaigns on energy use, a public sector that

sets an efficiency example, extensive combined heat and power generation, high taxes on energy consumption and negotiated agreements on energy savings with industry. An important lesson for BICSAM nations is that Denmark's initiatives to promote renewable energy and energy efficiency have not detracted from economic performance or Denmark's quality of life.

Influencing Private Capital

Investment banks, insurance companies, pension funds and other investment funds have begun to recognize that their investments may be at risk either directly because of climate change or because potential regulations aimed at reducing GHG emissions may affect the financial viability of existing projects. International organizations such as UNEP have sought to increase awareness about investment risks and private sector entities such as the Climate Group are working with banks to identify opportunities to influence reductions in GHG emissions. Government support is critical to ensure that the private sector can, and is, assessing risk around the impacts of investment that accounts for climate change considerations. EU Member States are only beginning to grapple with this issue, and lessons learned could inform programs to support international investments.

One option for greening private capital is to direct government pensions and encourage other financial asset management organizations to invest in green companies, projects and technologies. Most pension funds, while concerned about climate change, seek conservative investments that achieve a maximum return on their investments. The result is that well-tested technologies such as fossil fuel projects that meet their investment criteria continue to find support in financial markets. Breaking this cycle requires a dialogue between government and private sector pension and asset managers to seek ways to contribute to a more resilient green investment environment.

Another option for greening private sector investments is for governments to provide grants, soft loans, government guarantees, tax credits and other financial risk instruments (interest rate subsidies, faster transaction processing, reduced fees or extended payback periods) for projects employing new low GHG-emitting technologies that are not yet commercially available on a wide scale. Such investment vehicles can reduce the risk to private sector banks and can slowly educate the banking community about the financial viability of such projects. The International Finance Corporation (IFC) has had some success with the application of targeted technical assistance and partial risk guarantees to engage local banks in lending for clean energy investments (primarily efficiency upgrades). These projects require some concessional resources, but have very high leverage; once banks become comfortable with the different lending criteria needed to evaluate investments justified by energy

saving, the projects become self-sustaining and even self-replicating as other banks duplicate product offerings. In the case of the IFC, such projects are now in effect in eight countries with lending equivalent to over US$250 million. Such projects can only be implemented where financial markets are adequately developed and receptive, conditions which fortunately are being met in a growing number of countries, including BICSAM nations. The IFC could be called upon (and supported) by the EU to do more to work with private sector banks in support of climate-friendly projects (Miller, 2007).

The barriers to a good investment climate, particularly those related to inadequate government policies (such as a lack of protection for property rights, lengthy delays establishing new businesses and regulatory regimes that are stacked against unconventional energy sources), lack of essential infrastructure, and project sponsors with weak credit ratings will undermine or block the efficacy of otherwise attractive financing programs. These issues remain a challenge for climate-friendly development. A World Bank report notes, "unless the policy framework changes and appropriate instruments are in place to facilitate investments in new technologies, developing countries are expected to follow a carbon-intensive development path similar to that of industrialized nations" (Sierra, 2006). Consequently, a fundamental role for the EU, either through its bilateral assistance programs or through the Multilateral Development Banks (MDBs), is to encourage appropriate policy reforms in developing countries so as to make it attractive for private capital.

Creating Meaningful Roles for the Private Sector

The private sector is an essential partner in efforts to reduce emissions and engage developing countries, as firms are the owners of many leading-edge technologies. In the EU, the private sector is reducing emissions by participating in government-led programs such as the EU ETS, CDM, JI and voluntary agreements with Member State governments. Examples of other business initiatives include: the Carbon Disclosure Project through which over 300 companies reveal information on their GHG emissions; the Climate Group, which is trying to catalyze business and government leadership on climate change in order to put the world on track for a low-carbon economy; the World Business Council for Sustainable Development, which is a leading business advocate for sustainable development; and the International Emissions Trading Association, which is a leading proponent of emissions trading.

The EU might engage developing countries by partnering with these groups, for example, in promoting the voluntary disclosure of GHG information by companies in developing countries. Methodologies have been developed by a number of organizations to inventory GHG emissions from companies, installations and products and to report supplementary information. Companies

that do so often find energy-saving opportunities that lead to cost reductions. The EU could encourage a business group to focus on engaging companies in developing countries to disclose information on GHG emissions. Building awareness could lead to business opportunities for both sides and may be one of the best ways to influence government policies in developing countries.

More work could be done to examine innovative financing options that engage the private sector. Joint finance opportunities, the use of EU public finance to support EU companies to transfer technologies, export credits and tax exemptions are all ideas that warrant further consideration. There might also be a need for a mechanism to pool risk and reward for EU companies that engage in technology development.

Expanding and Improving the Clean Development Mechanism

The CDM can also play a role in encouraging FDI in climate-friendly investments in BICSAM nations. Capoor and Ambrosi (2007: 30) estimate that since 2002, clean energy investment credits under the CDM (renewable energy and methane recovery, fuel switching and energy efficiency) worth US$2.7 billion have leveraged an estimated additional US$16 billion in associated investments in those sectors in developing countries. Much of this investment has been directed to BICSAM nations; in October 2007, over three-quarters of CDM projects and 79 per cent of expected 2012 CERs were in BICSAM nations, with China and India being clear leaders (see Table 2). The CDM can play a role in directing investment, as the potential to shift to a lower-carbon economy has barely been tapped.

Table 2: Total CDM Projects in BICSAM (including project activities at validation that have requested registration and are registered)

	Total					Issued	
Host Country	Number		kCERs	2012 kCERs		Number	kCERs
Brazil	251	8.7%	26,147	168,556	7.0%	71	16,110
India	815	28.3%	57,824	361,076	14.9%	114	34,065
China	961	33.3%	241,530	1,283,236	53.0%	29	25,792
South Africa	23	0.8%	4,226	22,941	0.9%	0	0
Mexico	179	6.2%	11,823	66,746	2.8%	16	2,333
BICSAM	2,229	77.3%	341,550	1,902,555	78.6%	230	78,300
Total CDM Projects	2,833	100%	433,532	2,423,378	100%	281	102,544

Source: UNEP Risoe Centre, 2008.

The CDM could be expanded in a number of ways that could allow the mechanism to have greater influence on major capital investments in the energy

sector, or in sectors that have seen little CDM activity such as transportation. An expanded CDM might also create more effective linkages between the CDM and national development priorities, and there is considerable potential under programmatic CDM in such areas as standards and labelling, and energy efficiency. In December 2006, the CDM Executive Board approved *Guidance on the Registration of Project Activities under a Programme of Activities as a Single CDM Project Activity*—guidance that effectively clears the way for explicit approval of programmatic CDM. Further guidance has been issued by the Executive Board in 2007, but no large-scale CDM program of activities has yet been registered.

The potential for sectoral crediting mechanisms and policy CDM is being explored. An international sectoral agreement would aim to set emission reduction goals for an industrial sector, such as the aluminum industry, across countries. Policy CDM would aim to create credits by reducing GHG emissions below a baseline through the implementation of policies and measures. Sectoral agreements are attractive because they may reduce transaction costs, alleviate competitiveness concerns, promote greater access to technology and encourage broader participation in a global emission-reduction effort. Yet, both areas have unresolved complexities. There are not many sectors that would be amenable to transnational sectoral CDM because it demands a small number of coordinated large emitters; and additionality issues have been raised with respect to policy CDM. Numerous technical, legal and institutional issues need to be clarified.

The EU could promote capacity building to ensure that programmatic CDM meets its full potential, by sponsoring projects and helping to answer outstanding questions in regard to such issues as baselines, leakage, monitoring and verification. Capacity building to explore the feasibility of policy and sectoral CDM is also needed. EU governments that have public procurement programs to purchase CERs could scale up efforts to channel these funds into sectors that typically receive less support through regular investment channels.

4.2 Transforming Development Cooperation

Activities to engage BICSAM nations will need to account for EU strategies in the area of development cooperation that affect climate change and clean energy. The foundation of the climate change strategy is the 2003 EC Communication on *Climate change in the context of development cooperation* and the following Action Plan, which aim to provide technical assistance to EU partner countries in the implementation of the UNFCCC and the Kyoto Protocol, and increase dialogue on climate change to better identify country-specific needs with the view to responding to them more effectively (CEC,

2003). The Action Plan for 2004–2008 focuses on strategic priorities: i) raising the policy profile of climate change, both during dialogue and also in cooperation with the partner countries and within the Community; ii) support for adaptation to climate change; iii) support for mitigation of climate change; and iv) capacity development.

Related to this is the Sustainable Development Strategy, which attempts to integrate sustainable development into development cooperation by focusing on capacity building. The goal is to assist developing countries in assuming greater responsibility in implementing environmentally sound cooperation programs. The 2006 thematic program for environment and sustainable management of natural resources addresses Millennium Development Goal (MDG) 7 (Ensure Environmental Sustainability), and includes institutional support and technical assistance for renewable energy (CEC, 2006b, 2001, 2000). Finally, the drive towards policy coherence for development aims to ensure integration of development issues in EU decision-making. In December 2005, a common vision and set of objectives, values and principles for all EU development work were provided, which centred on the achievement of the MDGs. A particular emphasis was placed on the need for coherence among external EU policies that affect developing countries.[12]

While the broad development assistance policy framework must be respected, the growing economic wealth of the BICSAM nations and their emergence as bilateral donors of aid suggests there might be a need to rethink development assistance programs to these countries. This might mean redefining the aid architecture, or indeed forming climate change and clean energy cooperative programs that are outside of the traditional Official Development Assistance (ODA) structure. For example, China's rapid economic growth has triggered discussions in a number of OECD countries about possible reductions in development aid.[13] This is not to say that funding flows should decline, but that they might be recast to reflect current realities.

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12 The Council, the European Commission and the European Parliament jointly adopted the so-called "European Consensus on Development" (OJ 2006/C46/01), which was subsequently discussed by the European Council, i.e., at the level of heads of state and government. The document addresses eradicating poverty in the world in general, and advancing policy coherence for development in particular. After the Council invited Member States and the Commission to prepare a Work Programme 2006–2007 for Policy Coherence for Development, the General Affairs and External Relations Council, on 17 October 2006 adopted the Conclusions on procedural changes to increase policy coherence (Council of the European Union, 2006: 14072/06). For further details on procedural issues, see van Schaik *et al.* (2006) and for policies, see European Centre for Development Management and Policy (2007).

13 As an example, Japan is restructuring its support to China, ending ODA loans to China in 2007 and setting up other forms of assistance, including a special account for energy measures, which will purchase CERs through the CDM.

ODA offers little opportunity to influence BICSAM countries, where FDI inflows were 35 times greater than ODA in 2005 (see Table 3). In 2005, the top recipient of inward FDI among developing countries was China and Hong Kong, followed by Singapore, Mexico and Brazil (UNCTAD, 2006: 4). But carefully directed ODA can play a role in triggering FDI in clean investments. The Global Environment Facility (GEF, 2007) allocated US$1.74 billion to climate change projects and enabling activities from 1991 to 2004 which was matched by more than US$9.29 billion in co-financing, and World Bank lending to a project is often seen as a *sine qua non* for private investors in the same undertaking.

Table 3: FDI and ODA Inflows to BICSAM Nations (in US$ millions)

	1990		2005	
	FDI	ODA	FDI	ODA
Brazil	989	142	15,066	171
India	237	752	6,598	846
China	3,487	1,465	72,406	1,689
South Africa	78	-	6,379	486
Mexico	2,633	145	18,055	161
BICSAM	7,268	2,504	118,504	3,353
Developing Countries less BICSAM	28,629	35,958	202,166	77,780
Economies in Transition	79	9	39,679	1,560
Developed Countries	165,637		555,927	
World	201,614	38,471	916,277	82,693

Source: UNCTAD, 2007 and OECD, 2007.

4.2.1 Focusing Bilateral Official Development Assistance

While bilateral development assistance to BICSAM nations is small relative to private flows, there is still scope for well-focused programs that promote climate and clean energy objectives. Considerable work has taken place under the EU's *Climate Change in the Context of Development Cooperation* action plan and the OECD Development Assistance Committee's (DAC) efforts to mainstream adaptation to climate change. A similar effort to mainstreaming clean energy could help to ensure that expenditures are directed to leading-edge clean technologies.

The EU could work to ensure that future Country Strategy Papers explicitly promote climate change and clean energy as priority aid sectors, using as

examples China's recent Country Strategy Paper (2007–2013), which collectively includes environment, energy and climate change as one of three targeted areas, and Brazil's 2007–2013 strategy, which places environment as one of two priorities. An identified focus on environment can help open the door for activities to promote climate change and clean energy goals, but many of the decisions critical for an effective transition to a low-carbon economy will take place outside the environment sector in the fields of energy, transportation, and trade and investment, indicating that focused bilateral direction on clean energy could be required as part of a new relationship.

A number of new Country Strategy Papers for the BICSAM nations have recently been released, suggesting that clean energy may not officially be a priority in the short term, but the groundwork can be laid to ensure that it is a stated priority in future strategies. While recognizing that strategies are developed in collaboration with host countries, laying the foundation now could help to ensure this focus in renewed or new strategies and agreements. A drastic consideration would be to recast ODA programs in BICSAM countries to focus solely on clean energy, allowing scarce aid resources to be channelled in one sector to make more of an impact.

A coordinated clean energy approach between development assistance programs, technology cooperation, and trade and investment promotion could see the EU's ODA initiatives with BICSAM nations scaling up capacity building and institutional strengthening initiatives to put in place policy regimes that facilitate investments in clean technology. Efforts could include regulatory frameworks, the definition of common product standards and the development of mutually recognized certification procedures. Increased support for analytical work could assist the BICSAM nations in examining the costs and feasibility of emission reductions options, and integrating climate and clean energy considerations into energy security, economic and national development policies.

Expansion of the established bilateral dialogue processes, or support for multilateral dialogue processes that include all five nations, could build up and enhance climate and clean energy relations. This might include establishing energy dialogues with Mexico and South Africa (in addition to those already established with Brazil, China and India); as well as including a clean energy business dialogue to assist EU and BICSAM businesses in meeting key business and government decision-makers. Dialogue on integrated clean energy and climate policies might help to encourage national development policies in BICSAM nations that are "fit for purpose" and encourage action across a number of sectors.

Focused bilateral dialogues on post-2012 negotiations could be a critical step in encouraging BICSAM countries to pursue a clean development path. A

meaningful post-2012 agreement could be the basis for addressing the EU's competitiveness concerns, and for demonstrating to developing countries that developed countries are serious about the issue. Dialogue processes could help to improve understanding of differing views. BICSAM nations likely have questions about the impacts of different elements of a potential future regime, for example, what the EU's proposals on clean energy and climate change will mean to individual nations. Discussion and joint analysis on what different climate and clean energy regimes mean could be useful to alleviate fears and build trust.

4.2.2 Working with Multilateral Development Banks to Support Clean Energy

The EU could also use their involvement with MDBs to direct funding toward clean energy activities in BICSAM countries. For the period 1997–2005, a period that begins with the agreement on the Kyoto Protocol, bilateral and multilateral aid for energy totaled US$64 billion or 6–10 per cent of all development assistance. As noted in Table 4, annual energy assistance has been virtually stagnant at approximately US$6–7 billion for the last seven years. The World Bank Group's low-carbon portfolio comprised 37 per cent of its overall energy portfolio in 2007 (World Bank, 2007: 13).

Table 4. Multilateral and Bilateral Funding for Energy during the Period 1997–2005 (US$) millions

Multilateral and Bilateral Energy Support for Energy Projects										
Source	1997	1998	1999	2000	2001	2002	2003	2004	2005	Total
Bilateral ODA	3,992	2,522	1,820	1,294	1,950	1,950	2,726	2,296	2,132	20,104
World Bank Group	3,633	3,833	2,258	2,643	2,817	2,817	2,450	1,828	2,794	24,898
EBRD	357	357	357	587	620	680	667	768	765	5,158
GEF	136	113	83	113	97	97	120	134	124	1,054
ADB	824	400	699	1,042	663	927	654	707	677	6,593
IADB	1,131	1,261	464	1,172	1,188	184	379	152	1,056	6,987
Total	10,073	8,486	5,681	6,851	6,619	6,655	6,996	5,885	7,548	64,794

Source: Tirpak and Adams, 2007.

Tirpak and Adams (2007) report that the World Bank Group is the largest source of multilateral funds for energy, contributing nearly 39 per cent of all funding, including bilateral funds. Their analysis of funding for energy shows that support for the power sector, while down from earlier years, dominates energy funding. Funds for the oil and gas category are relatively constant, while support for energy efficiency measures and renewables is variable,

despite efforts since the early 1990s to expand both portfolios. Collectively, the power, coal, oil and gas categories account for 75 per cent of all funding.

There has been some indication of a willingness among the MDBs to take on expanded mandates in the funding of low-carbon energy programs in partnership with large developing countries. An exploration of this approach became possible with the G8 agreement on a climate action plan at Gleneagles in July 2005. In response, the World Bank Group, in cooperation with other leading MDBs (particularly the European Bank for Reconstruction and Development (EBRD) and Asian Development Bank (ADB)), spent considerable effort preparing approaches to significantly expand the scale of their support for clean energy finance in large developing countries—particularly the BICSAM nations. The World Bank (2006, 2007) released two reports on a Clean Energy Investment Framework and in 2006 it proposed a Clean Energy Financing Vehicle to correct market and regulatory disincentives that impede the spread of new technologies such as, photovoltaic cells, higher-efficiency home appliances or alternative energy sources. While the financing vehicle did not garner significant support, perhaps because it sought an initial capitalization of US$15 billion, the need remains. More modest efforts to overcome these recognized barriers could be considered along with alternative forms of financial vehicles (Miller, 2007).

The European Investment Bank and the EBRD have been leading the energy efficiency work in the Clean Energy Investment Framework, and have developed important innovations in their lending to ensure that new industrial infrastructure projects are as energy efficient as possible. This energy efficiency audit is a relatively simple procedure for ensuring that maximum energy efficiency options are implemented and financed, and could be applied by other MDBs in initiatives in BICSAM countries.

The EU could exert influence over the MDBs to encourage clean energy lending, including renewable energy and energy efficiency; and provide funding for programs to promote leading-edge low-carbon emission technologies. Examples of initiatives that encourage and support programmatic approaches in clean energy include the Danish Cooperation Fund for Renewable Energy and Energy Efficiency in Rural Areas established at the ADB, and Denmark's contribution to the World Bank administered Energy Sector Management Assistance Program. These activities have assisted in the scale up of the banks' renewable energy portfolios and could help to influence priorities at the departmental and ministerial levels.

The EU could consider promoting targets that increase the clean energy profile in MDBs and providing increased funding for such programming. Support for clean energy initiatives delivered through the MDBs can help to

ensure that these institutions remain competitive and relevant as private sector capital expands rapidly. The MDBs are supportive of the EU's sustainable development objectives as they generally encourage high standards when leveraged with private sector capital. However, if their relative share of investment capital declines, their ability to encourage high standards will also decline. This may not be easy at a time when developed countries are finding it more difficult to increase support for MDBs and as the WB Group in particular seeks to redefine its lending strategy and role.

4.2.3 Supporting Technology Cooperation

Technology cooperation is an area of particular interest for BICSAM countries, and could be supported by ODA or broader funding programs. Technology transfer has been a controversial topic under the UNFCCC, with developing nations calling on developed countries to increase financial and technical support, focusing on the removal of intellectual property rights and the creation of a fund to buy patents. Developed countries have argued that intellectual property does not belong to government but to the private sector and have pointed to the need for "enabling environments" to create a good investment climate. The EU would be well advised to avoid the acrimonious debate centred around technology transfer; focusing instead on innovative, tangible technology cooperation efforts that will encourage the uptake of hard technologies in BICSAM nations, meaning that efforts must be backed by substantive funding.

A number of advanced clean energy technologies require additional research, development and dissemination (RD&D) to overcome technical and cost barriers to their deployment. However, public and private sector support for energy RD&D, particularly renewable energy, in OECD countries has been level for nearly two decades (Tirpak and Adams, 2007). As a first step, before BICSAM countries can be broadly engaged, support for RD&D will need to be scaled-up either through direct grants or tax incentives in EU countries.

The scale-up of technology efforts could include joint RD&D programs in areas of interest to both the EU and BICSAM nations. Increased scientific and technological cooperation could be used to strengthen European companies' positions in the BICSAM markets and *vice versa*, including the exchange of scientists and engineers in the energy sector, and training programs to promote best practices, standards and technologies. Encouraging acceptance of EU standards and technologies in BICSAM countries can best be accomplished if businesses in these countries are part of the development process and if demonstration and pilot projects are supported.

The EU could consider scaling up bilateral agreements and cooperation schemes in the energy sector, focusing on those technologies where EU industry has a competitive and technological edge, and where the BICSAM nations have specific needs. For example, China and India have expressed interest in energy efficiency, clean coal, CCS, natural gas, renewables and nuclear. Activities could include technology information centres, training programs and joint RD&D. Denmark's export to and investments in wind power in China, and the EU's initiative in China to demonstrate CCS, are examples of the types of projects that can deliver technological benefits.

EU strategy will need to recognize that BICSAM nations are increasingly among the global leaders in renewable energy investment and are suppliers of energy technologies to other countries. For example, the Chinese firm Suntech is the fourth largest producer of photovoltaics and exports 90 per cent of its production, mainly to higher-cost industrialized country markets (Batson, 2006). Brazil is a global leader in ethanol production; India and China were fourth and fifth in adding wind-energy capacity in 2005; China was first in solar hot-water capacity and additions to capacity in 2005; and Mexico was one of the top five largest countries in terms of geothermal capacity (Martinot, 2006). An analysis of South-South energy trade could prove useful for determining areas for potential cooperation, such as working with BICSAM technology providers to help raise the standards of domestically-produced technologies, which are often favoured by developing nations because of low costs.

4.2.4 Promoting Trade and Investment

Trade and investment promotion activities are linked closely to technology cooperation because of the critical role of the private sector. The EU might consider the development of a clean energy trade and investment promotion strategy that is closely linked to policy reform programs and technology cooperation activities. This could include establishing clean energy trade promotion centres to raise awareness and encourage the export of leading-edge European technologies to BICSAM nations. Important considerations include financial support for the purchase of technologies, and improved financial instruments that encourage EU investment in energy projects in BICSAM nations. Trade and investment promotion officers could be trained to identify opportunities in the clean energy markets, identify potential partners and increase awareness of EU technology strengths. The EU might consider a clean energy focus in such initiatives as Asia-Invest,[14] supporting the exchange of experience, networking and matchmaking among European and BICSAM clean energy business organizations to promote technology cooperation. The

14 Asia-Invest is a program to build EU-Asia business partnerships, with a focus on small and medium enterprises.

EU might also consider including clean energy objectives in trade agreements with BICSAM nations. As noted earlier, a coordinated approach will use ODA to leverage technology cooperation and export opportunities.

4.2.5 Addressing Adaptation and Reducing Deforestation

Measures to promote adaptation and reduce deforestation are linked to clean energy issues in BICSAM countries, and can play an important role in EU support for poverty alleviation efforts that help to achieve climate change goals. The importance of this issue was underlined by Norway's announcement at COP 13 in Bali to increase its support for measures to prevent deforestation in developing countries to more than US$500 million a year.

Options to reduce deforestation include both market and non-market approaches. However, numerous legal and technical issues need to be addressed, such as, baselines, additionality, leakage, monitoring and compliance measures. The EU could consider accelerating pilot efforts to develop environmentally and cost-effective methods to reduce deforestation, which is a particular interest of Brazil, but also of interest in China and India. The objective of a pilot effort would be to test and find ways to overcome the technical, legal and institutional barriers that could make countries reluctant to include such approaches in a future agreement. An efficient way to do this may be to provide financial support for two new funds under preparation by the World Bank Group; that is, the Forest Carbon Partnership Facility and the Carbon Partnership Facility, although this may be dependent on details currently being worked on within the Bank. Working through the World Bank would allow the EU to play a positive role in deforestation efforts, while leaving the World Bank with the task of developing the details of such programs. Alternatively, the EU could launch its own initiative, taking advantage of the technical expertise residing in the EU on forestry and energy. Such an approach would allow the EU to have greater control on the design of the initiative and would make the EU role more visible to developing countries, but it may entail higher administrative costs.

Examples of adaptation efforts include providing alternative fuels for cooking at a reasonable cost to relieve pressure on forests, while meeting the demand for air conditioning through renewable energy could be part of a low-carbon energy strategy. Many different ideas to address adaptation have been put forth including: strengthening reporting and review procedures; establishing goals and targets; mainstreaming adaptation to climate change into national policies; increasing RD&D; deepening cooperation with other sector-oriented institutions and processes; and enhancing capacity. The EU could consider increased support in these areas to ensure a development focus is maintained in programs to engage BICSAM nations in efforts to meet climate and clean energy goals.

4.2.6 Working with BICSAM Countries as Emerging Donors

The BICSAM nations are emerging donors of aid and have become important sources of South-South FDI. Brazil, China, India and Mexico are countries with relatively large FDI outflows, and UNCTAD (2006: 20) notes that these countries have considerable potential for future expansion of FDI. In Africa, South Africa is a particularly important source of FDI; it accounts for more than 50 per cent of all FDI inflows into Botswana, the Democratic Republic of the Congo, Lesotho, Malawi and Swaziland (UNCTAD, 2006: 20).

The 22 member countries of the OECD-DAC account for approximately 95 per cent of ODA, but Manning (2007) notes in his review of aid from non-DAC members that the BICSAM nations are important emerging donors. It is not possible to determine accurately the size of BICSAM nation's mainly bilateral programs because individual aid flows to recipient governments are not necessarily reported. Mexico has plans to scale-up its aid, Brazil plays a major role bilaterally and multilaterally and has been active in discussions on innovative financing, and South Africa has a modest bilateral program with its economic strength giving it influence in the region. China and India have historically been donors, especially to neighbouring countries; and both plan to develop larger and more ambitious aid programs. India is a significant donor to Nepal and Bhutan, as well as several Sub-Saharan African nations. While half of China's aid goes to Asian countries, Africa has gained importance in China's foreign aid portfolio. China has pledged to double its assistance to the African continent by 2009, including the creation of a US$5 billion China-Africa development fund to encourage Chinese companies to invest in Africa (UN 2006). India and China have established export finance schemes, offering discount loans to African nations mainly to facilitate exports. The two countries are now food donors, with China being the third largest donor, and India becoming the 15th largest donor to the World Food Programme in 2005 (UN News Centre 2006).

As emerging donors, these countries are providing grants and preferential lending terms for new resource extraction projects, power plants and other energy facilities. In some cases, such grants and loans come without provisions to adhere to high environmental standards and may even include a requirement to buy outdated and inefficient equipment from the lending country, thereby precluding EU companies from selling into that market. The long life time of such facilities will ensure that the accompanying GHG emissions will occur for many decades.

The EU could seek opportunities for dialogue and cooperation with the BICSAM nations that recognize their role as donors and investors. As noted previously, there is a lack of data on the size of developing country invest-

ments and their purposes. In the case of the developed countries, the OECD collects and publishes such data, thereby providing some visibility to projects and investment trends. Encouraging BICSAM countries to become part of a broader effort to collect and publish such data could be a first step.

The BICSAM donors could be encouraged to adhere to high environmental standards in their investments, although this issue is complicated by the competitive nature of such investments and by the need for some level of business confidentiality. Therefore, any strategy that is likely to find acceptance among these countries will have to be one that encourages voluntary adherence to high standards. While defining "high standards" would be a challenge, as demonstrated by the difficult OECD negotiations over the guidelines for multinational enterprises, the very process of doing so would help to raise awareness among developed and developing country governments and businesses. The World Bank and other MDBs, OECD-DAC or UNCTAD could be forums to have conversations on the subject. The G7 countries took a step in this direction at a meeting in Washington in October 2007, where they advocated the development of best practices relating to "sovereign wealth funds" operating in China and Saudi Arabia and under consideration by Brazil and Russia. While the G7 aims to encourage best practices in the areas of risk management, transparency and accountability, such good practices could be expanded to include investments in projects that affect GHG emissions.

The EU could also support coordinated aid programs for clean energy, including triangular cooperation, where a BICSAM nation provides clean energy expertise (e.g., China's low-cost solar water heaters) and the EU provides funding and capacity building to help countries at a less-advanced stage of development adopt and use the technology. This could be especially pertinent for China, which has developed comprehensive renewable energy and climate change programs that could be shared with other nations.

4.3 Trade

Trade policy and law is another area that has potential to support improved climate and clean energy frameworks in BICSAM and other developing countries. This section examines possible changes in the rules of the multilateral trading system (MTS) and trade policies. The analysis considers the competitiveness implications of the different options, given the strong relationship between competitiveness and trade and investment, and the understanding that competitiveness concerns are factors that impel the EU to help developing countries pursue clean development pathways.

4.3.1 Changes in the Rules of the Multilateral Trading System

There are a number of ways in which rules changes in the MTS might help to improve clean development frameworks in BICSAM nations. Examples discussed below include the areas of liberalization of environmental goods and services, and subsidies.

Environmental Goods and Services Liberalization

The ongoing negotiations on the Doha Agenda have struggled to achieve the objective set out in the Doha Ministerial Declaration, that is, "the reduction or, as appropriate, elimination of tariff and non-tariff barriers to environmental goods and services." Current talks are foundering on the sticky question of how to define an environmental good.

This has been contentious; is a good environmental because of its end use (e.g., a heat pump, in which case we have the problem of dual use), or because of the way it has been produced (e.g., organic produce), or because of its characteristics in use (e.g., a hybrid vehicle)? These last two categories would involve the WTO, in affect, acting as an eco-labeller, deciding which goods are "green" enough to warrant listing, and presumably updating that list as the bar is raised in any particular sector. This is not a traditional WTO role, and not one that many are ready to welcome at this time.

No matter what the final definition, the result—if indeed there is a meaningful result—would be beneficial to the prospects for clean development. If goods are defined on the basis of their production methods there would be incentive for BICSAM countries to exploit new export niches by cleaning up production methods. If environmental goods are defined in such a way as to include technologies such as wind turbines, solar panels and environmental remediation technologies, there would be clear benefits via the increased uptake of such technologies that would thus be rendered cheaper to acquire. In this last scenario there would also be clear benefits for EU and BICSAM exporters with comparative advantage in the export of such goods, such as Denmark firms with expertise in renewable energy.

Non-actionable Subsidies

The WTO's Agreement on Subsidies and Countervailing Measures (SCM)—created during the Uruguay Round—carved out what were known as *non-actionable* subsidies, subsidies that would be considered acceptable and beyond challenge in the WTO. These fell under three basic categories: R&D expenditures, environmental protection and regional development. The last of these is not so important in the present context.

The SCM Agreement was very specific about the nature and scope of the non-actionable subsidies providing a small window—mostly available to developed countries with the wherewithal to exploit it—for supporting particular types of R&D, and supporting incurred costs from stronger environmental protection. That window closed in 1999, when WTO Members failed to renew the relevant provisions. Arguably the mandate of the rules negotiations currently underway in the Doha talks cover the review of whether and how these types of flexibilities should be reinstated, but there has been no discussion to date on this subject.

The potential here is to renew the flexibilities formerly provided in Article 8 of the SCM Agreement. Of course this would have to be done while bearing in mind the ultimate objective of the SCM Agreement—to prevent the unfair use of such subsidies for the purpose of distorting trade and competition. But the final effect of a carefully crafted renewal text could be to make it easier for BICSAM and other developing countries to implement stringent environmental requirements of their producers, and to underpin their efforts with directed R&D.

Fossil Fuel Subsidies

Fossil fuel subsidies are an example of an economically and environmentally perverse instrument. Their negative effects have been documented and need little description, particularly the encouragement they provide to use fuels that most directly contribute to climate change, and in the process, reduce the attractiveness of investment in alternative technologies. And yet they persist, with energy subsidies overall in 2005 amounting to US$250 billion, some $90 billion of which was devoted to oil products alone (IEA, 2006b).

OECD countries have a mixed record in reducing subsidies. One of the key difficulties faced by any country seeking to reform energy pricing is the fear of going it alone, and the certain backlash from consumers and industries grown accustomed to cheap energy. The WTO (and the GATT before it) was established to facilitate multilateral agreement on mutually-beneficial reforms that could not be undertaken by countries in isolation and it remains the forum for such discussions. However, there are some countries willing to go it alone that may benefit from technical support and the experience of others. Selectively engaging BICSAM countries in a policy dialogue to explore how they might approach the issue could be one way to address the issue, without the full-scale engagement of the WTO. Informal seminars and workshops could be forums for such a dialogue.

One of the most direct efforts of the current Doha talks to support environmental objectives is the push to discipline fisheries subsidies. If that effort is

successful, it may prove to be a model for future efforts to do the same with fossil fuel subsidies.

4.3.2 Trade Measures

The measures examined to this point have been of a positive character—using trade and investment policy and law as "carrots," or incentives for BICSAM countries to follow a clean development path. Trade measures are qualitatively different, being more like a stick than a carrot.

The most frequently proposed sort of punitive measures—but not the only type available—would be used at the border of a country with a tough environmental regulatory regime, for example a carbon tax used as a tool to reduce GHG emissions. The trade measure would levy charges at the border against goods produced in countries that are seen as not doing their fair share in the global effort to address the environmental problem in question. In trade parlance these particular sorts of measures are known as border tax adjustments (BTAs).

The point of such trade measures would be two-fold. First, they would encourage all countries to step-up their efforts to address the global challenge in question. This, for example, is one of the motivations for the Montreal Protocol's ban on imports of ozone-depleting substances from non-Parties to the Treaty—a trade measure of a different sort (Brack, 1996). Second, they would level the playing field between foreign producers and domestic producers, ensuring that both bear a comparable regulatory burden and that the foreign producers do not gain market share by dint of their domestic regulatory regime. Ultimately, the point is to make the imposing country better able to pursue its clean development path, a course of action that is much tougher when it entails injury to domestic producers.

BTAs to address environmental issues have been proposed by a number of countries, most recently by several EU politicians and institutions, and in two climate change proposals currently before the U.S. Congress.[15] They respond in part to the increased stringency of proposed future action, and in part to the rise in economic and environmental importance of key developing countries (see Section 3 above).

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15 For recent EU versions of this proposal, see High Level Group on Competitiveness, Energy and the Environment (2006: para. 12); Reuters (2007) and New York Times (2006). For the U.S. versions, see Bingaman-Specter (S.1766), the *Low Carbon Economy Act*, sections 501-502; and Lieberman-Warner, *America's Climate Security Act*, Title IV (passed by the Senate Environment and Public Works Committee in December 2007). Technically the U.S. proposals are not tax adjustments—they are requirements to buy U.S. offsets—but they amount to the same thing.

Another type of border measure is a standard based on how imported goods are produced (based on process and production methods, or PPMs, in trade parlance). The EU, for example, has announced its intention to establish a biodiesel standard applicable to imports that will hinge on such questions as deforestation for palm oil production. California maintains two such standards, mandating the allowable GHGs emitted in the process of producing imported electricity and imported fuels. British Columbia (Canada) is proposing similar measures. These sorts of measures are distinct from BTAs in that they do not apply border charges, but simply demand a certain performance of imported goods. Because they are based on PPMs, however, they share many characteristics of BTAs for the purpose of this analysis. For both types of measures, the following three questions need to be answered:

- are they WTO-legal?
- would they be feasible to administer? and
- would they be productive in the wider efforts to encourage improved clean energy uptake in BICSAM nations?

In the case of PPM-based standards, one relevant body of law is the Agreement on Technical Barriers to Trade (TBT), which regulates the way in which states propound and implement mandatory standards (technical regulations, in trade parlance), and which has not been tested on these questions yet. The TBT's Article 2.2 demands that, "technical regulations shall not be more trade-restrictive than necessary to fulfil a legitimate objective, taking account of the risks non-fulfilment would create." The environment features on the subsequent illustrative list of legitimate objectives. And among the risks of non-fulfilment is listed the processing technology used in producing the good. The issue would probably boil down to a consideration of whether the specific measure in question was more trade restrictive than necessary—a question that would involve looking at alternative means for achieving the same ends. While only a dispute settlement panel could settle the question definitively, it is arguable that a properly formulated PPM-based standard could be compliant with Article 2.2.

Depending how they are formulated, PPM-based standards may also potentially conflict with obligations in GATT law related to non-discrimination and quantitative restrictions. If so, they would have to look for salvation to GATT's General Exceptions (Article XX), discussed below.

In the case of BTAs and mandatory offset purchases such as are being proposed in the United States, there is no definitive answer to the first question: would such measures be WTO-legal? A host of analyses on this question produced divided opinion, and there will be no final answer until the question is

tested in a WTO dispute-settlement panel.[16] Such measures might well be found to contravene GATT's Article I on Most-Favoured Nation (MFN) treatment, but the question hinges on whether it is permissible to consider the method of production of a good when deciding whether two goods are due similar treatment. Of course, even if a panel rules that BTAs violate MFN, the measures in question might still be saved by GATT's Article XX – General Exceptions.

Here the WTO's Appellate Body ruling in *U.S.-Shrimp I* gives us some idea of what requirements might be due of a unilateral measure taken to try to regulate methods of production outside of the implementing jurisdiction. For the sake of the present analysis, two important requirements are:[17]

- the measure must not be based on the regulatory regime in the country of production, but must rather be tailored to the specific circumstances of the exporter. Otherwise clean exporters from countries with lax regulations would be unfairly penalized; and
- the measure must only be taken after the failure of good-faith efforts to reach a multilateral agreement with the exporting countries that would address the environmental problem in question.

The first requirement will be discussed below, but it can be noted here that it would entail a rather complex regime. The second requirement is of interest because it seems obvious that a complainant that is Party to the Kyoto Protocol—for example, China—could argue with some force that efforts at a multilateral agreement had *not* failed, and that it was in full compliance with the obligations it undertook under said agreement. It is hard to imagine a WTO panel finding against such an argument, at least during the coverage of the Kyoto Protocol's first commitment period.

To summarize: PPM-based standards would likely be deemed compliant with the obligations found in the TBT Agreement, but depending on their specific formulation might conflict with provisions in GATT law. It is uncertain whether BTAs would be found to violate the GATT's MFN obligations; legal opinion is divided. But it can be strongly argued that if the measures *are* found to violate MFN, then the GATT's environmental exceptions will not serve to save them. It should be noted that the U.S. proposals have avoided traditional taxes at the border, instead requiring that foreign producers buy a certain value of U.S. offsets. The idea is to evade WTO strictures on BTAs. A full legal

16 For a selection of this analysis, see Cosbey and Tarasofsky (2007); Lodefalk (2004); Charnovitz (2003); Cosbey *et al.*, (2003); Biermann and Brohm (2003).

17 See WTO (1998: paras 165 and 166). The need to account for differences in individual producers' environmental profiles was also emphasized in *U.S.-Reformulated Gas*.

assessment of this strategy is beyond the scope of this paper, but it seems rather unlikely that this formulation would indeed avoid violating MFN. In the end, such charges will be applied not to all climate laggards, or even necessarily exclusively to the worst of the laggards, but only to those that offer serious competition to domestic producers.

The second question posed above asks whether such measures would be feasible to administer. In the case of BTAs and other border charges, several rather difficult calculations would be required. If the measure depended on the country of origin, it would first need to establish the extent to which a foreign government was in fact taking measures comparable to those of the domestic government. Given the fact that a raft of different policy instruments can be employed to reach the same goal, this calculation would be extremely difficult. It would be made more difficult by the fact that different countries may allocate the burden of their climate change efforts more or less heavily to the sectors under scrutiny, but still be reaching equivalent overall results. Depending on the design of the tax, it might need to establish the actual quantum of difference between the two regulatory efforts, so as to be able to assess the proper value of the tax.

If, in accordance with the Appellate Body ruling in *U.S.-Shrimp I*, the tax regime is applied not to countries but to individual producers, the calculation would need to establish, almost on a shipment-by-shipment basis, the GHG footprint of the goods in question—a daunting prospect given the reality of today's global value chains, coupled with the widespread data constraints that exist in most countries. Even given the ability to make this calculation (cost issues aside for the moment), the taxing country would then need to make the judgment described above, to decide at what level the shipment would need to be taxed, given the relative GHG-intensity of the shipper as compared to domestic producers.

The cost and complexity of a regime capable of carrying out these calculations is likely to be completely out of line with the benefits that might be gained were the regime to prove successful. And under the cover of that complexity there is the potential for a worrying amount of political interference.

PPM-based standards would also be administratively difficult, though perhaps less so. There would need to be some sort of certification as to the manner of production, which could involve fairly complex chain of custody questions. There is no existing standard or accredited verifier established to do this sort of certification, so the regime would need to be designed and implemented. For some suppliers there might be difficulties in compliance, due either to lack of data or high costs of certification. Either might be the grounds for a WTO complaint, so to some extent there would be a trade-off between

the integrity of the regime and the fairness of the burden borne by foreign suppliers.

The exceptionally virulent reactions to the unilateral U.S. measures that featured as part of the shrimp-turtle and reformulated gas disputes in the WTO, and even to the Appellate Body ruling that cleared the way for such measures given certain conditions (conditions that the United States failed to meet) suggest that BICSAM countries would not take lightly the prospect of having such measures applied to their exports. Given that the EU's collaboration with BICSAM nations on climate and clean energy is highly dependent on willing trade partners engaged as part of a win-win collaboration, trade measures as sticks should probably be considered only as a last resort (if at all). Otherwise the poisoned atmosphere they create would almost certainly frustrate progress.

The objectives that make these sorts of trade measures attractive are real, and important. There is clearly a need for more research, aimed at identifying viable policy measures that can address those objectives in an adequate manner.

4.3.3 Concluding Thoughts on Competitiveness

Given that one of the underlying motivations for the EU partnership on climate and clean energy with BICSAM nations is the competitiveness of its domestic producers, it is worth a few concluding thoughts about the competitiveness implications of the trade measures surveyed above.

First, to the extent that any of these measures are successfully implemented, the result will be increased export markets for EU producers of environmental goods and services. Note, though, that several BICSAM nations are themselves developing strong environmental export sectors (e.g., China and PV solar panels).

Second, to the extent that any of these measures are successfully implemented, EU producers of manufactured goods would be sheltered from competition that enjoyed lower costs due to less stringent environmental regulatory regimes.

Third, while EU producers would be sheltered from competition based on regulatory differences, it would conceivably be subject to increased competition from producers made more efficient through tough regulations abroad. That is, there is a train of thought that maintains that tough environmental regulations actually increase the competitiveness of many sectors.[18] A full

18 These arguments were originally spearheaded by Michael Porter, who made the case in Porter and van der Linde (1995). A large number of subsequent analysts have tried to confirm or disprove what has become known as the "Porter Hypothesis."

survey of the debate over that proposition is beyond the scope of this analysis, but to the extent that it is true, increased support for clean energy in BICSAM nations will mean increased competition from increasingly efficient producers abroad. This is certainly not noted as an argument against assisting BICSAM countries to develop in a clean manner, but merely as a side note in the larger discussion—one that should be taken into consideration along with a host of other important factors.

5.0
Toward an Integrated Approach for Engaging Developing Countries: Potential Action Items

Section 4 discussed a number of possible ways for the EU to encourage action on clean energy and climate in BICSAM nations. Moving forward will require a coordinated approach that recognizes the need for effort-sharing, ongoing discussion, adequate funding and consistent messaging in multilateral and bilateral fora. Priority actions items are identified in this concluding section, which includes a brief description and rationale as to how these areas will open new avenues for the EU to partner with BICSAM countries to pursue low-carbon development.

Recognizing that EU relations differ between BICSAM nations and that circumstances vary greatly between these nations, broad recommendations are put forward that could be tailored for specific countries, consistent with the EU approach of differentiation. While recognizing that not all potential actions may be consistent with EU policies (e.g., policy coherence), they are included as ideas to be considered now and in the future. Further work will be required to ensure that the options and assumptions are workable and feasible, including consultation with BICSAM partners.

5.1 Financing and Investment

Increasing financial support for clean energy programs and investment vehicles will be critical to engaging BICSAM nations. The EU will need to ensure that adequate financing is allocated to activities to promote effective clean energy and climate change policies, including encouraging private sector investment in green technologies in developing nations. Potential action areas to promote green financing and investment include:

- Use bilateral ODA as a means to stimulate demand for clean energy technologies, both by increasing support for the development of strong, clear and legal energy and climate policy regimes in developing countries; and leveraging private sector investment.
- Increase funding for MDB clean energy programs, promote targets to increase the clean energy profile, and look for opportunities to increase

synergies between EU activities and MDB programs on clean energy issues, especially under the Clean Energy Investment Framework.

- Encourage government pension and other financial asset-management organizations to invest in green companies, products and technologies by providing government support for the assessment of risk around climate change impacts.
- Collaborate with the banking community in BICSAM nations and provide partial-risk guarantees to engage local banks in lending for clean energy investments, building on the experience of the IFC.
- Use investment law as a tool through the development of an umbrella agreement to promote clean energy investments. This could include unilateral commitments of market access for clean energy investment, protection for clean energy investors through investor-state arbitration, and setting out minimum standards for regulatory regimes that will foster clean energy investment at the domestic level. The EU would need to help BICSAM countries attain those standards.
- Support private sector partnerships to promote the voluntary disclosure of GHG information by companies in developing countries.
- Encourage participation in an expanded CDM, particularly programmatic CDM in the short-term, through capacity building designed to address outstanding questions in relation to baselines, leakage, monitoring and verification.
- Explore innovative financing options, including joint finance opportunities with BICSAM nations, export credits and tax exemptions.

5.2 Climate and Clean Energy Cooperation Programs

While development aid provides limited opportunity to influence BICSAM nations, there are potentially new dynamics that can be brought into development cooperation programs to further EU clean energy goals. Coordinated approaches to aid, CDM investment and trade and investment promotion could create synergistic results that build on EU strengths and support clean energy goals, and help ODA activities be a catalyst to encourage private sector investment.

A coordinated climate and clean energy program could aim to have impacts on the investment climate, macro-economic stability and openness of financial institutions; and could include:

- Include clean energy and climate as priorities in Country Strategy Papers.

- Scale up capacity building and institutional support for effective clean energy and climate policy regimes (e.g., regulatory frameworks, common product standards, intellectual property rights, strategic frameworks and analytical exercises to determine what a clean energy development path means to BICSAM nations).
- Promote technology cooperation through joint RD&D in clean energy technologies and increased financing for clean energy pilot programs (especially in areas that have difficulty attracting funding such as energy efficiency).
- Establish clean energy trade and investment promotion programs in the five BICSAM nations, including clean energy trade promotion centres, training for foreign service officers and exchanges between clean energy firms.
- Identify areas and establish pilot projects for triangular cooperation with the BICSAM nations in the energy sector.
- Implement pilot efforts in the area of reducing deforestation to try and find ways to overcome the technical, legal and institutional barriers that could make countries reluctant to include such approaches in a future international climate agreement.
- Promote adaptation measures that are linked to poverty alleviation and clean energy issues in BICSAM countries, such as the provision of alterative cooking fuels.
- Expand dialogue sessions with BICSAM nations, or consider multilateral sessions that includes all five nations, in the areas of post-2012 negotiations; BICSAM nations as emerging donors; and integrated clean energy and climate policies to encourage national development policies that are "fit for purpose."

5.3 Trade Policy

There are a number of specific actions that could be undertaken to improve conditions for investment and trade in clean energy technologies and products. The first area is to encourage changes in the rules of the multilateral trading system:

- Seek agreement on a meaningful definition of "environment goods" in the ongoing negotiations of the Doha Agenda—one that includes technologies such as wind turbines and solar panels that will provide clear benefit for EU and BICSAM exporters.

- Explore with other WTO Members a renewal of the SCM's Article 8 carve-out for subsidies that support particular types of R&D and offset some of the costs of compliance with new environmental regulations. This would make it easier for BICSAM and other developing countries to implement stringent environmental requirements for producers, and to underpin their efforts with directed R&D.
- Encourage action in any post-Doha talks to multilaterally reduce fossil fuel subsidies. Begin the tough diplomatic task of preparing the ground for an acceptance of the issue as legitimate and necessary within the WTO through cooperative efforts with interested BICSAM nations.
- Assess current trade negotiations for opportunities to develop bilateral deals in areas favourable to BICSAM countries in exchange for strong action on climate change and clean energy.

There are opportunities to implement trade measures, such as BTAs, in support of climate change efforts, but as currently conceived, such measures would probably be WTO-illegal and would likely frustrate progress. As well, the costs and complexities of the regime might be out of line with any potential benefits. Here there is a need for further research to identify viable options.

5.4 Concluding Comments

The integrated climate and energy package adopted by the EU is a critical step in demonstrating real action on climate change and clean energy. While engaging BICSAM nations in climate and clean energy activities can help to build understanding and lay the groundwork for green investments, most important for the EU will be meeting its Kyoto target, and demonstrating that it can be done without deleterious impacts on economic growth. If, as in the case of many nations' efforts to meet their Kyoto targets in the 2008–2012 period, the EU-15 fails to make good on these targets, it would send a negative message for action to BICSAM nations, and undermine attempts to work with these countries.

High-level commitment for partnerships, joint action and moving the issue forward is critical for success in engaging BICSAM nations. This includes buy-in from leaders in the public and private sectors, as well as politicians, in the EU and developing countries. Consistent with the conclusions of IISD's earlier work on *Climate Change and Foreign Policy: An exploration of options for greater integration*, important elements for effective climate change and clean energy cooperation include: ongoing political engagement; a diplomatic network willing to deliver; and a coherent, cross-government approach. Other key factors to further climate and clean energy initiatives, as noted in

this paper, include: adequate funding; actions to promote appropriate investment; coordinated actions across development, technology and trade promotion programs; and improved conditions for investment in clean energy technologies through improvements in multilateral trade and investment policy.

Annex 1: BICSAM and EU Relations

1. Brazil

When emissions from LULUCF are taken into consideration, Brazil is of the top five producers of GHGs; and the country is unique in that three-quarters of its emissions are due to deforestation (Osava, 2007). Brazil is also unique among the BICSAM nations in that 90 per cent of domestic electricity needs are met through hydropower generation (La Rovere *et al.*, 2007: 78). Brazil lacks a national policy on climate change, but has adopted an action plan on the control of deforestation and a program on alternative energy sources. Key issues for Brazil are eliminating deforestation; correcting the direction of the country's energy base, which will become dirtier in future years; and maintaining leadership in the biofuels sector. Brazil has a long history of fuel ethanol use and a current government mandate of 25 per cent ethanol blending in gasoline. Brazil accounts for 17 per cent of global ethanol production, and has increased export levels (mainly to the United States) since 2000 (Nexant Chem Systems, 2007).

The EU is Brazil's main trading partner, and trade with the EU represented 22.1 per cent of Brazil's external trade in 2005 and around 1.7 per cent of total EU trade in 2006 (European Commission, 2007a). Brazil was the EU's main trading partner in Latin America and the 12th trading partner worldwide in 2006.

The EU and Brazil have agreed to work together to promote common strategies on various global issues, including climate change and energy security. The EU and Brazil met in their first-ever Summit in Lisbon on July 4th, 2007 to launch a Strategic Partnership based on a range of areas, which included close cooperation on global challenges such as environmental issues (particularly climate change, forests, water management and biodiversity), sustainable energy resources, as well as enhancing stability and prosperity in Latin America (CEC, 2007f). At the Lisbon summit, agreement was reached on an EC-Brazil Regular Energy Policy Dialogue. The aim is to strengthen energy cooperation through bilateral action in the areas of biofuels and other renewable energy sources, low-carbon energy technologies and the improvement of energy efficiency.

Particular emphasis is placed on biofuels with the joint declaration calling for the promotion of a multilateral framework for tackling climate change, as well as standards and open markets for biofuels and for the raw materials used in

their manufacture. Since a significant part of the EU's plans for tackling climate change is a legally-binding requirement that 10 per cent of all fuel for transport should come from biofuels, Brazil could play a key role as the current world leader in the production of biofuels. The joint declaration finishes with a number of recommendations, including: i) establishing standards for biofuels that allow for the efficient international trade of biofuels; ii) opening markets for the renewable raw materials used in the production of biofuels, as well as providing market access and stable rules to the trade of biofuels, especially ethanol; and iii) rethinking the policy framework surrounding renewable resources (1st EU-Brazil Business Summit, 2007).

2. India

The National Council on Climate Change is in the process of developing a comprehensive national policy on climate change issues, including a "Green India" reforestation program. India's economy is growing at a rate of eight to nine per cent a year and contributes four per cent of global GHGs—an amount that is growing between two and three per cent annually (Mok, 2007). India suffers from higher rates of poverty than the other BICSAM nations, suggesting the need for different strategies of engagement. India's large rural population depends on climate-sensitive sectors (agriculture, fisheries, forests) and is extremely vulnerable to shifts in weather systems and ecosystems.

The EU is India's largest trading partner and main source of inward foreign investment. Trade with the EU represents almost 20 per cent of India's exports and imports and India ranks as the EU's ninth trading partner, but India only accounts for 1.8 per cent of EU exports and imports, and 1.3 per cent of the EU's global investments (EC, 2007a).

In June 2000 the EU and India launched EU-India summits, which provide regular platforms for high-level discussions. There is a formal EU-India strategic partnership with a joint action plan (adopted in September 2005) including environment, climate change and energy (CEC, 2004). This includes an EU-India initiative on clean development and climate change, largely concentrating on practical yet voluntary measures such as the promotion of clean technologies in the context of the CDM. An EU-India energy panel staffed with high-level officials regularly discusses matters such as security of energy supply, energy efficiency and renewables, coal and clean coal conversion technologies, fusion energy issues, as well as environmental/climate change considerations and energy market reforms. At their inaugural meeting in June 2005, the panel decided to set up three working groups in coal and clean coal conversion technologies, energy efficiency and renewable energies, and fusion energy including India's participation in the ITER project.

3. China

While the other BICSAM nations are influential, China is in a league of its own in regard to the magnitude of its economic growth, impact on global aggregate emissions and its ability to attract interest from the EU and other developed countries on climate change issues. With 20 per cent of the world's population and continued rapid economic growth (between eight and 12 per cent for the past decade), the expected rise in emissions could potentially dwarf any reductions made by developed countries. China has surpassed the United States in CO_2 emissions to become the world's leader and with sustained high growth rates will open the gap even further.

The targets of the 11th Five Year Plan of the National People's Congress include increasing per capita GDP to US$3,000 in 2020 and maintaining annual growth rates of at least 7.5 up to 2020 (China.org.cn, 2005). If China grows at 7.5 per cent for the next 10 years, its economy will double in size, and its GHG emissions can be expected to close to double as well. There is speculation that as China's economy expands, it will turn increasingly to coal for electricity (Saunders 2007).

Chinese leaders recognize the importance of climate change, and the potential devastating impacts it can have on the country. In 2007, Beijing released China's National Climate Change Programme which sets out a series of policies and measures to address climate change in the overall context of sustainable development (National Development Reform Commission, 2007). It intends to deal with GHG emissions through energy savings, changes to agricultural practices and planting forests. Previously announced government goals include improving overall energy efficiency by 20 per cent by 2010 compared to 2005 levels, and increasing the use of renewable energy up to 10 per cent by 2020.

In 2006, China was the EU's second largest trading partner and displaced the United States as the largest source of EU imports. Bilateral trade is worth upwards of €254 billion. The rapid growth of China opens an expanding market for EU exports, and EU investment in China will be a key factor in ensuring global competitiveness for EU services and industrial operators. At the same time, the EU trade deficit with China has reached an unprecedented level of €128 billion in 2006 and China's export capacity is putting increased competitive pressure on certain industrial sectors and employment in Europe (EC, 2007b).

Since April 1998, the EU and China have held annual summits. As well, bilateral sectoral agreements and dialogues have been struck that cover the environment, energy, standards and regulation for industrial goods, and science

and technology. At the conclusion of the 8th EU-China Summit in Beijing in September 2005, China and the EU signed a partnership on climate change. The partnership's centrepiece focuses on clean coal technology with the aim of demonstrating, in China and the EU, advanced "zero-emissions" coal technology by 2020. Under the agreement, the EU would give China technology and help invest in a new power station. Another objective—also to be reached by 2020—is to significantly reduce the cost of key energy technologies and promote their deployment and dissemination. Other areas for cooperation are energy efficiency, renewable energy and energy conservation, methane recovery and use, hydrogen (fuel cell), and power generation and transmission.

On the same occasion, both sides concluded Memoranda of Understanding on transport and energy strategies which should lead to concrete actions in areas such as energy regulation, renewable energy (including alternative transport fuels), energy efficiency, natural gas and other new technologies in the energy sector. A new Euratom agreement with China focuses on research into the peaceful use of nuclear energy and grants researchers from both sides access to each other's facilities. The EU and China both participate in the international ITER program.

In March 2005, the Commission's Directorate-General for Transport and Energy and the Chinese Ministry for Science and Technology also signed an Action Plan on Clean Coal and terms of reference for an Action Plan on Industrial Cooperation on Energy Efficiency and Renewable Energies. Still in the area of energy policy, the EU and China established the Energy Environment Programme to promote sustainable energy use, with activities taking place under four components: energy policy development, energy efficiency, renewable energy and natural gas.

4. South Africa

South Africa is Africa's largest energy consumer, second largest energy producer and the largest emitter of GHGs. The economy grew at five per cent in 2006, and is undergoing the longest expansion on record. The South African government finalized a GHG inventory in 2006, which would inform the country's first long-term national climate policy, expected to be published in 2008–09. The African National Congress, South Africa's ruling party, released a *Resolution on Climate Change* in December 2007. The resolution called for setting a target for GHG emission reductions and achieving that target through energy efficiency improvements, diversifying energy sources away from coal, establishing a price for carbon, allocating funding for technology R&D, developing CCS, introducing a tariff system that promotes the efficient use of electricity and promoting affordable public transport.

The EU was South Africa's largest trading partner, the main source of FDI and the leading provider of development aid to South Africa in 2005. Europe accounts for 44 per cent of total FDI flows to South Africa, and six out of the top 10 foreign investors in South Africa are members of the EU (Embassy of the Republic of South Africa, 2005).

Over 12 years South Africa and the EU have developed a comprehensive partnership, of which one important pillar is the Trade, Development and Co-operation Agreement. In October 2006, the EU proposed a strategic partnership. Although the proposed partnership touches, amongst others, upon development and environmental cooperation, it is primarily a political statement on the importance of the relations between South Africa and the EU that should translate into deeper political dialogue, more common political positions and joint political action at the regional, African and global levels.

To implement the Strategic Partnership, the EU Council of Ministers on May 14th, 2007 approved a Joint Action Plan. Both parties agreed to establish a new overarching umbrella structure, the Mogôbagôba Dialogue, to bring together existing areas of cooperation, and develop cooperation in new areas, including the environment and climate change. As part of the Mogôbagôba Dialogue, South Africa and the EU agree to establish a high-level dialogue on the environment. Possible areas to be covered include climate change, biodiversity, waste management, air pollution, renewable energy, support for South-South cooperation and environmental governance.

5. Mexico

Mexico's economy experienced strong growth in 2005 partly because of high global oil prices, and GDP increased by three per cent. Oil generated over 10 per cent of the country export earnings and one-third of government revenues in 2005 (EIA, 2007a). Mexico released its National Strategy for Climate Change in May 2007, which is comprised of adaptation and mitigation initiatives (Presidency of the Republic, 2007). An official climate plan for the country is under development, and recent policies have focused on expanding renewables and increasing energy efficiency.

The EU is Mexico's second main trading partner and an important contributor to Mexico's FDI. Trade relations between the EU and Mexico have been close, with the balance of trade heavily in favour of the EU with a deficit of €7,839 million for 2004 (EC, 2007a).

Since 2000, bilateral relations between the EU and Mexico have been governed by the Economic Partnership, Political Co-operation and Co-operation Agreement (or "Global Agreement") (Council of the EU, 2004). The Global

Agreement institutionalizes a regular political dialogue at the highest level: Summits at the presidential level and Joint Council meetings at the ministerial level.

The Global Agreement includes an article (Art. 23) on cooperation in the energy sector, concentrating on the promotion of technology transfer, the exchange of information about the respective legislation of the Parties, the training of human resources, the design of more efficient energy-generation processes, the promotion of the rational use of energy and of alternative renewable sources of energy protective of the environment, and the promotion of recycling and processing residues for use in generating energy. Although the environment is not one of the priority sectors in the partnership, the EU and Mexico have agreed to reinforce their political dialogue on new areas of cooperation such as security of energy supply and climate change. On the occasion of the fifth Joint Council held on April 19th, 2007, the EU and Mexico identified three priority sectors for cooperation for the period 2007–2013, namely: social cohesion; sustainable economy and competitiveness; and education and culture. Another top priority is the EU-Mexico Free Trade Agreement.

Bibliography

Batson, Andrew, 2006. "Chinese Entrepreneur Makes Good at Home," *Wall Street Journal*. October 12.

Biermann, Frank and Rainer Brohm, 2003. *Implementing the Kyoto Protocol without the United States: The strategic role of energy tax adjustments at the border*. Potsdam: The Global Governance Project.

Brack, Duncan, 1996. *International Trade and the Montreal Protocol*. London: The Royal Institute of International Affairs (Chatham House), pp. 51–58.

Capoor, Karan and Philippe Ambrosi, 2007. *State and Trends of the Carbon Market 2007*. Washington, D.C.: World Bank.

Centre for International Governance Innovation, 2007. "BRICSAM." *Shifting Global Economic Power*. <http://www.cigionline.org>.

Charnovitz, Steven, 2003. "Trade and Climate: Potential conflicts and synergies," in *Beyond Kyoto – Advancing the international effort against climate change*. Washington, D.C.: Pew Center for Global Climate Change.

China.org.cn, 2005. "The New 11th Five-Year Guidelines." *China.org.cn*. <http://www.china.org.cn/english/features/guideline/157519.htm>.

Commission of the European Communities (CEC), 2008. "20 20 by 2020: Europe's climate change opportunity." Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions. Brussels, January 23, 2008, COM(2008) 30 final.

CEC, 2007a. "An Energy Policy for Europe," Communication from the Commission to the European Council and the European Parliament, the European Economic and Social Committee and the Committee of the Regions. January 10, 2007, COM(2007) 1 final.

CEC, 2007b. "Limiting Global Climate Change to 2° Celsius: The way ahead for 2012 and beyond," Communication from the Commission to the Council, the European Parliament, the European Economic and Social Committee and the Committee of the Regions. January 10, 2007, COM(2007) 2 final.

CEC, 2007c. "Mid-term Review of Industrial Policy: A contribution to the EU's Growth and Job Strategy," Communication from the Commission to the Council, the European Parliament, the European Economic and Social Committee and the Committee of the Regions, July 4, 2007, COM(2007)374.

CEC, 2007d. "Results of the Review of the Community Strategy to Reduce CO_2 from Passenger Cars and Light-commercial Vehicles," Communication from the Commission to the Council and the European Parliament, February 7, 2007, COM(2007) 19 final.

CEC, 2007e. "Sustainable Power Generation from Fossil Fuels: Aiming for near-zero emissions from coal after 2020," Communication from the Commission to the Council, the European Parliament, January 10, 2007, COM(2006) 843 final.

CEC, 2007f. "Towards an EU-Brazil Strategic Partnership," Communication from the Commission to the Council and the European Parliament, May 30, 2007, COM(2007) 281.

CEC, 2006a. "A European Strategy for Sustainable, Competitive and Secure Energy," Green Paper, March 8, 2006, COM(2006) 105.

CEC, 2006b. "External Action: Thematic programme for environment and sustainable management of natural resources including energy," Commission Communication of January 25, 2006, COM(2006) 20 final.

CEC, 2006c. "An Innovation-friendly, Modern Europe," Communication from the Commission to the European Council, (Informal Meeting in Lahti – Finland, October 20th, 2006), October 12, 2006, COM(2006) 589 final.

CEC, 2005a. "Working Together for Growth and Jobs. A new start for the Lisbon strategy," Communication to the spring European Council, February 2, 2005, COM(2005) 24 final.

CEC, 2005b. "The 2005 Review of the EU Sustainable Development Strategy: Initial stocktaking and future orientations," February 9, 2005, COM(2005) 37 final.

CEC, 2005c. "Winning the Battle Against Global Climate Change: Background paper," Commission staff working paper. February 9, 2005, COM(2005) 35 final.

CEC, 2004. "An EU-India Strategic Partnership," Commission to the European Council and the European Parliament, and the European Economic and Social Committee, June 16, 2004, COM(2004) 430 final.

CEC, 2003. "Climate Change in the Context of Development Cooperation," Communication from the Commission to the European Council and the European Parliament, March 11, 2003, COM(2003) 85 final.

CEC, 2001. "A Sustainable Europe for a Better World: A European Union Strategy for Sustainable Development," Communication from the Commission of May 15, 2001, (Commission's proposal to the Gothenburg European Council) COM(2001) 264.

CEC, 2000. "Integrating Environment and Sustainable Development into Economic and Development Cooperation Policy – Elements of a comprehensive strategy," Commission Communication of May 18, 2000, COM(2000) 264 final.

Cordis, 2007. *List of International Cooperation Partner Countries*. <http://cordis.europa.eu/fp7/partner-countries_en.html>.

Cosbey, Aaron and Richard Tarasofsky, 2007. *Climate Change, Competitiveness and Trade*. A Chatham House Report. London: Chatham House.

Cosbey, Aaron, Sérgio Saba and Lucas Assunçao, 2003. *Implications, Including for Development, of the Interface between Environment and Trade Policies for Oil Exporting Countries*. Geneva: UNCTAD.

Council of the European Union, 2007. *Presidency Conclusions: Brussels European Council, March 8–9,* 7224/07.

Council of the European Union, 2006a. *Council Conclusions on Integrating Development Concerns in Council Decision-making*. October 17, 14072/06.

Council of the European Union, 2006b. *Review of the EU Sustainable Development Strategy (EU SDS) – Renewed Strategy*. June 9, 10117/06.

Council of the European Union, 2004. "Economic Partnership, Political Coordination and Cooperation Agreement between the European Community and its Member States, of the One Part, and the United Mexican States, of the Other Part," *Official Journal of the European Union*.

Egenhofer Christian and Kyriakos Gialoglou, 2004. *Rethinking the EU Regulatory Strategy for the Internal Energy Market*. CEPS Task Force Report, December. <http://shop.ceps.be/BookDetail.php?item_id=1181>.

Embassy of the Republic of South Africa. 2005. *Background: South Africa's relations with the European Union*. <www.southafrica.be/President's%20 visit/BACKGROUND%20SA-EU.doc>.

Energy Information Administration (EIA), 2007a. *International Data*. <http://www.eia.doe.gov/international>.

EIA, 2007b. *International Energy Outlook 2007*. <http://www.eia.doe.gov/oiaf/ieo/index.html>.

European Centre for Development Management and Policy, 2007. *Evaluation Study on the EU Institutions & Member States' Mechanisms for Promoting Policy Coherence for Development.* Final Report, May 2007.

European Commission, 2008. "Intelligent Energy – Energy," *Energy*. <http://ec.europa.eu/energy/intelligent/index_en.html>.

European Commission, 2007a. "Bilateral Trade Relations," *Trade Issues.* <http://ec.europa.eu/trade/issues/bilateral/index_en.htm>.

European Commission, 2007b. *External Relations*. <http://ec.europa.eu/external_relations/delegations/intro/index.htm>.

European Commission, 2006. *FP7: Tomorrow's answers start today*. <http://ec.europa.eu/research/fp7/pdf/fp7-factsheets_en.pdf>.

Federal Government of Germany, 2007. *Heiligendamm Process.* <http://www.g-8.de/nn_92160/Content/EN/Artikel/__g8-summit/2007-06-08-heiligendamm-prozess__en.html>.

1st EU-Brazil Business Summit, 2007. *The 1st EU-Brazil Business Summit: Joint Declaration of Brazilian and European Business*, July 4th. <http://ec.europa.eu/external_relations/brazil/docs/2007_joint_decl_040707_en.pdf>.

Fujiwara, Noriko and Christian Egenhofer, 2007. "Does Regional Integration Hold Lessons for Climate Change Regime Formation? The case of differentiated integration in Europe," in Carlo Carraro and Christian Egenhofer (eds.), *Climate and Trade Policy*. ESRI Studies Series on the Environment. Cheltenham: Edward Elgar.

G8, 2007. *Chair's Summary: Heiligendamm, June 8th, 2007*. <http://www.g-8.de/Content/DE/Artikel/G8Gipfel/Anlage/Abschlusserkl_C3_A4rungen/Chairs-summary,property=publicationFile.pdf>.

Global Environment Fund (GEF), 2007. *Climate Change*. <http://www.gef.org>.

Intergovernmental Panel on Climate Change (IPCC), 2007a. *Fourth Assessment Report. Climate Change 2007: Synthesis Report*. Geneva: IPCC.

IPCC, 2007b. *Climate Change 2007: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*. M.L. Parry, O.F. Canziani, J.P. Palutikof, P.J. van der Linden and C.E. Hanson (eds.). Cambridge and New York: Cambridge University Press.

International Energy Agency (IEA), 2007. *Key World Energy Statistics*. Paris: IEA.

IEA, 2006a. "Part III: Greenhouse Gas Emissions," in *CO_2 Emissions from Fuel Combustion 1971–2004*. Paris: IEA. pp. III.1–III.41. <http://www.mnp.nl/bibliotheek/digitaaldepot/IEA2006-CO2-Part3.pdf>.

IEA. 2006b. *World Energy Outlook 2006: Summary and Conclusions*. Paris: IEA.

Jansen, Jaap C., Kyriakos Gialoglou and Christian Egenhofer, 2005. *Market Stimulation of Renewable Electricity in the EU. What degree of harmonisation of support mechanisms is required?* Brussels: CEPS.

La Rovere, Emilio Lébre, Amaro Olimpio Pereria, André Felipe Smioes, André Sanrio Pereira, Amit Garg, Kirsten Halsnaes, Caroline Burle Schmidt Dubeux and Ricardo Cunha da Costa, 2007. *Development First: Linking energy and emissions policies with sustainable development for Brazil*. Roskilde, Denmark: UNEP Risoe Centre.

Lodefalk, Magnus, 2004. *Climate and Trade Rules – Harmony or conflict?* Stockholm: Kommerskollegium (National Board of Trade).

Manning, Richard, 2006. "Will 'Emerging Donors' Change the Face of International Cooperation?" *Development Policy Review*. Vol. 24(4): 371–385.

Martinot, Eric, 2006. *Renewables Global Status Report: 2006 update*. Renewable Energy Policy Network for the 21st Century. Washington, D.C.: Worldwatch Institute.

Meadows, Damian, 2006. *An Update on the EU ETS*. Presentation at the SBSTA meetings, Bonn, May 24.

Miller, Alan S., 2007. "Financing Integration of Climate Change Mitigation into Development," submitted to *Climate Policy*.

Mok, Kimberley, 2007. "India Announces New Climate Change Strategy," *ExpressIndia.com*. <http://www.expressindia.com/news/fullstory.php?newsid=89455>.

National Development and Reform Commission (NDRC), 2007. *China's National Climate Change Programme*. Beijing: People's Republic of China.

Netherlands Environmental Assessment Agency, 2007. *China now no. 1 in CO_2 Emissions; USA in second place*. Climate change dossier. <http://www.mnp.nl/en/dossiers/Climatechange/moreinfo/ChinanowNo1inCO2emissionsUSAinsecondposition.html>.

New York Times, 2006. "French Plan Would Tax Imports from Non-Signers of Kyoto Pact," *New York Times*, November 14, p. 6.

Nexant Chem Systems and Expetro. 2007. *Brazil's Biofuels: Outlook for a global leader*. New York: Nexant.

Nilsson, Måns and Lars. J. Nilsson, 2005. "Towards Climate Policy Integration in the EU: Evolving dilemmas and opportunities," *Climate Policy*. Vol. 5: 363–376.

OECD, 2007. *International Development Statistics Online Databases on Aid and Other Resource Flows*. <http://www.oecd.org/dataoecd/50/17/5037721.htm>.

Ogonowski, Matthew, Jake Schmidt, Haibing Ma, Mark Houdashelt, Diana Movius and Ned Helme, 2007. *Greenhouse Gas mitigation in China, Brazil and Mexico: Recent Efforts and Implications*.Washington, D.C.: Center for Clean Air Policy.

Osava, Maria, 2007. "Climate Change-Brazil: Once and future environmental leader," *IPS News*. <http://www.ipsnews.net/news.asp?idnews=37827>.

Porter, Michael and Claas van der Linde, 1995. "Toward a New Conception of the Environment-Competitiveness Relationship," *Journal of Economic Perspectives*. Vol. 9(1): 97–118.

Presidency of the Republic, 2007. "Mexico Announces Climate Change Strategies," *Mexidata.info*. Press release, May 25. <http://www.mexidata.info/id1385.html>.

Reuters, 2007. "France's Chirac Says Wants EU Carbon Tax Post-2012," Reuters. January 5, 2007.

Saunders, Paul J., 2007. "Why Climate Change Can't Be Stopped," *Foreign Policy*. September. <http://www.foreignpolicy.com/story/cms.php?story_id=3980>.

Sierra, Katherine, 2006. "An Investment Framework for Clean Energy and Development," speech at the *Dialogue on Climate Change, Clean Energy and Sustainable Development*, October 3–4, Monterrey, Mexico.

Stern, Nicholas, 2006. *Stern Review: The economics of climate change*. Report presented to the Prime Minister and the Chancellor of the Exchequer on the Economics of Climate Change. <http://www.hm-treasury.gov.uk/independent_reviews/stern_review_economics_climate_change/sternreview_index.cfm>.

Tirpak, Dennis and Helen Adams, 2007. "Trends in Official Bilateral and Multilateral Development Assistance in the Energy Sector: Has the DA community responded to the United Nations Climate Change Convention?" submitted to *Climate Policy*.

Union of Industrial and Employers' Confederations of Europe, 2007. *Business Key Messages on Energy Policy*. Note, press conference on 10 January linked to the presentation of the Commission Energy Package. <http://212.3.246.117/docs/1/DPEHJMNDAIIMMHAJIJBOKIHNPDB39DBDPG9LI71KM/UNICE/docs/DLS/2007-00029-EN.pdf>.

United Nations (UN), 2006. "China to Double Aid to Africa," *Integrated Regional Information Networks*. <http://www. worldpress.org/Africa/2554.cfm>.

United Nations Conference on Trade and Development (UNCTAD), 2007. "Part 7: International Finance," *UNCTAD Handbook of Statistics 2006–07*. New York: United Nations.

UNCTAD, 2006. *World Investment Report 2006: Overview*. New York and Geneva: United Nations. <http://www.unctad.org/en/docs/wir2006overview_en.pdf>.

United Nations Development Programme (UNDP), 2006. *Human Development Report 2006. Beyond scarcity: Power, poverty and the global water crisis*. New York: UNDP.

UNEP Risoe Centre, 2008. *CDM Pipeline*. updated January 8, 2008. <http://uneprisoe.org/>.

UNFCCC, 2007a. *Bali Action Plan*. Decision adopted by COP 13 and CMP 3. December 2007. <http://unfccc.int/files/meetings/cop_13/application/pdf/cp_bali_action.pdf>.

UNFCCC, 2007b. *Investment and Financial Flows to Address Climate Change*. Bonn: UNFCCC Secretariat.

UNFCCC, 2004. *Report on the UNFCCC Workshop on Innovative Options for Financing the Development and Transfer of Technologies*. Note by the secretariat. FCCC/SBSTA/2001/1.

UN News Centre, 2006. "China Emerges as World's Third Largest Food Aid Donor, UN Agency Says," *UN News Centre*. <http://www.un.org/apps/news/story.asp?NewsID=19253&Cr=China&Cr1>.

van Schaik, Louise, Christian Egenhofer, Michael Kaeding, Alan Hudson and Jorge Núñez Ferrer, 2006. *Policy Coherence for Development in the EU Council: Strategies for the way forward*. Brussels: CEPS.

Vis, Peter, 2006. *Implementing the Emissions Trading Directive: Lessons learned*. Presentation at the first meeting of the CEPS Task Force on the EU ETS review. <http://www.ceps.be/Article.php?article_id=409>.

World Bank, 2007. *Clean Energy for Development Investment Framework: The World Bank Group Action Plan*. DC2007-0002, March 28. Washington, D.C.: World Bank.

World Bank 2006. *An Investment Framework for Clean Energy and Development: A progress report*. DC2006-0012, September. Washington D.C.: World Bank.

World Trade Organization (WTO), 1998. *United States—Import prohibition of certain shrimp and shrimp products*. October 12, 1998, Report of the Appellate Body WT/DS58/AB/R ("US-Shrimp I").

Furthering EU Objectives on Climate Change and Clean Energy: Building partnerships with major developing economies

The European Union has demonstrated resolve to remain at the forefront of global efforts to reduce greenhouse gas emissions, but achieving the EU's goals in the areas of climate change and energy will depend significantly on what happens outside the EU, including in developing countries with major and growing economies. Foreign policy can help to promote and strengthen EU objectives on climate change and clean energy through progressive partnerships with developing countries. This report scopes out and analyzes potential for collaborative action in the foreign policy areas of finance and investment, development cooperation and trade. The focus is how the EU can more effectively strengthen partnerships with the major developing economies—China, India, Brazil, Mexico and South Africa—in supporting a global transformation to cleaner energy systems over the first half of this century.

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