

Climate Action
A Challenging Opportunity

Global Leadership for Climate Action
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Climate change is one of humanity's greatest challenges, affecting both current and future generations. Without urgent and concerted action, it will impact human welfare, damage fragile ecosystems and threaten global security through migration pressures and conflicts over resources. The environmental, economic and social costs of inaction will far exceed the cost of taking immediate steps to address climate change.

The global community took initial steps in 1992 (United Nations Framework Convention on Climate Change - UNFCCC) and then again in 1997 (Kyoto Protocol) to collectively curb global greenhouse gas emissions. However, these attempts have produced only modest gains in a handful of countries. The resulting emission reductions are nowhere near where they should be in order to halt or slow the pace of climate change. On the contrary, emissions have been increasing in parallel with the growth of the world economy. In the meantime, nations that did not significantly contribute to global emissions are being adversely impacted by climate change. Helping them adapt to climate change is thus an equally urgent concern.

At the 2007 UN Climate Change Conference in Bali, Parties to the UNFCCC decided to launch formal negotiations toward a strengthened international agreement on climate change, to be concluded by the end of 2009 in Copenhagen. At the G8 Summit in July 2008 in Japan, governments of major world economies agreed to reduce global GHG emissions by at least 50% by 2050. Globally, this would allow GHG levels to stabilize at about 450-550ppm CO₂e while enabling the world economy to keep growing.

Given that global demand for energy continues to grow and could more than double by 2050, reducing emissions by 50% from 1990 levels will require a technological transformation of how we produce and use energy. Such a transformation presents a difficult challenge but is also a tremendous opportunity for innovation and technological development, not only in the energy sector but throughout the economy.

Technology is Key

Technology will be a key element of a global effort to combat climate change. Widespread diffusion and adoption of currently available low-carbon technologies and development of new technologies both are needed to achieve the target of cutting global emissions in half by 2050.

Many technological options to address the climate problem are available today. According to *Energy Technology Perspectives 2008*, a report of the International Energy Agency (IEA), emissions could be brought back to current levels by 2050, using technologies that are already known, at a cost of no more than US\$ 50 per ton of CO₂ saved. However, most of these technologies were developed in industrialized countries and are not readily available in developing countries. In order to tackle climate change at the requisite scale, clean energy technologies should be made available to and utilized by all countries. According to the IEA,

more than three quarters of the global growth in CO₂ emissions in the first half of the 21st century will be in developing countries. Therefore, in order to reach global emission reduction targets, it is essential to support diffusion of clean technologies in developing nations.

Many additional mitigation technologies in the energy, transport, building, industry, agriculture, forestry and waste management sectors are still under development or not yet commercially available on a wide scale. Existing technologies such as solar, wind, biofuels, hydrogen, and carbon capture and storage need additional cost reductions that will only be made possible with an infusion of public funds for R&D, as well as innovative public-private initiatives to encourage investments in post-R&D phases of these technologies.

The questions that policy makers are facing around the world are:

- How to develop clean technologies quickly, at large scale, and at an acceptable cost.
- How to increase public and private R&D for new clean, low-carbon technologies.
- How to enable and speed up commercialization and diffusion of clean technologies in developing countries.
- How to fund the additional costs of diffusion of clean technologies to developing countries.

The Cost

According to the IEA, achieving the goal set by the G8 will require US\$ 45 trillion (about 1.1% of average annual global GDP over the period) in additional clean technology investments, including energy efficiency improvements in all sectors, fitting fossil fuel fired power plants with CO₂ capture and storage technology, installing nuclear and renewable energy capacity, and substantially reducing the carbon intensity of the transport sector.

The UNFCCC has estimated that, in 2030, an additional US\$ 76-77 billion per year will be needed for mitigation in developing countries, and an additional US\$ 28-67 billion per year will be needed for adaptation.

Global Leadership for Climate Action (GLCA), in its *Framework for a Post-2012 Agreement on Climate Change*, estimates that about US\$ 50 billion per year will be needed for activities in developing countries in support of mitigation and adaptation.

The Financing

There is a tremendous disparity between the amount of financing required by developing countries and the scale of commitments to date. Using even the most optimistic estimates, the mechanisms that exist today, such as the Clean Development Mechanism, Global Environment Facility and the Adaptation Fund of the Kyoto Protocol will not be able to provide the necessary investment. Official development assistance (ODA) has also been declining since 2005. Additional sources and mechanisms for both public and private finance must be put in place to finance and incentivize the global transition to low-carbon economy and to help cover the costs of adaptation.

Financial Crisis

The current global financial crisis and the threat of a global recession have called into question the feasibility of raising significant financial resources for climate action around the world.

However, as some global leaders have already pointed out, the financial crisis should not be viewed as an excuse for inaction on climate change. In fact, addressing climate change at the requisite scale can be an integral part of the solution to the financial crisis. The transition to a low-carbon economy can support global recovery by creating new opportunities across a wide range of industries and services. Former US President Bill Clinton, for example, has stated that creating a low-carbon, clean energy economy presents the greatest economic opportunity for the United States since World War II. US President-elect Barack Obama has promised that under his administration, the US will spend US\$ 15 billion per year to catalyze private investment in renewables, nuclear and clean coal technologies. He said that these efforts would not only benefit the planet, but also help steer the US out of recession by generating 5 million new jobs. The EU countries are following suit by proposing to stimulate the economy through public spending on green cars, green appliances, more efficient lighting, renewables, etc.

Investment Opportunity

Indeed, addressing climate change should be seen as an opportunity and not a burden. According to the REN21 2007 Global Status report, there are already 2.3 million jobs in the renewable energy industry worldwide. The same is true for energy efficiency. California's energy efficiency policies created 1.5 million additional jobs from 1977 to 2007 with a total payroll of over US\$ 45 billion. The *Stern Review* estimated that markets for low-carbon energy products and services will be worth at least US\$ 500 billion per year by 2050, employing over 25 million people.

Globally, US\$ 148.4 billion of new money was raised for sustainable energy investments (renewable energy, biofuels, low-carbon technology, the carbon markets, etc.) in 2007, an increase of 60% over 2006. Asset finance – investment in new renewable energy capacity – was the main driver, rising 68% to reach US\$ 84.5 billion in 2007, fueled mainly by the wind sector. Public market investment also raced ahead in 2007, with investments of US\$ 23.4 billion in 2007, more than double the US\$ 10.5 billion spent in 2006. There were 1246 venture capital/private equity funds worldwide in 2006, chasing opportunities in clean energy, with 627 in the Americas, 501 in Europe, the Middle East and Africa, and 118 in Asia and Oceania.

Turning Opportunity into Action

Given existing market opportunities, the private sector will take on the majority of investments in low-carbon energy technologies. Governments around the world should guide and leverage these investments in the right direction by providing an enabling environment with a stable regulatory framework and necessary incentives. Proactive environmental policies which place a price on carbon, eliminate subsidies for fossil fuels, and require (or incentivize) the use of low- or no-carbon products and processes will lead to further growth of clean technology investments by providing assurances to investors that a long-term market will exist for these technologies.

Market instruments such as taxes (harmonized carbon tax, international maritime emission reduction scheme, air travel levy, etc.) and cap and trade systems with auctions of allowances can raise significant funds. In addition, developed countries should continue to support the efforts of developing countries by increasing ODA, especially for adaptation. Funds, channeled through bilateral and/or multilateral means, can help create enabling environments, build institutional/technical capacity and regulatory frameworks, finance R&D and demonstration projects, leverage private-sector investments via financial incentives, risk-sharing arrangements, and guarantees, and facilitate diffusion of clean technologies in developing nations.

The questions that policy makers are facing on this front are:

- What should be the scale of new financing, and where will it come from?
- What types of market-based mechanisms would be most effective?
- How could funding through the carbon market be expanded?
- What policies and public financing instruments are necessary to remove barriers and leverage large-scale private investment?
- How to deal with the proliferation of funds?
- Is there a need for a global governance structure to ensure effective allocation of funds?

Mobilizing Political Will

Striking a deal at COP 15 in Copenhagen in 2009 will depend on a number of factors, including a recognition of the urgency of tackling climate change, bringing together both developed and developing countries around a comprehensive agreement that addresses both mitigation and adaptation, adequate funds to implement the new agreement, and political leadership. The current financial crisis should not be an excuse for inaction on climate change; indeed, addressing climate change can be an important driver in dealing with the financial crisis. GLCA's *Framework* and its *2008 Update* can make a substantial contribution to the formulation of a comprehensive new agreement.