WORLD ECONOMIC FORUM

COMMITTED TO IMPROVING THE STATE OF THE WORLD

Task Force on Low-Carbon Prosperity

Summary of Recommendations

The views expressed herein represent a collation of various viewpoints emerging from a series of discussions among the participants in the Task Force on Low-Carbon Prosperity. Although the observations and proposals in this document enjoy broad support, they do not necessarily reflect the views of every individual participant nor do they necessarily reflect the individual institutional viewpoints of any of the companies or institutions that took part, or of the World Economic Forum.

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Preface

The World Economic Forum is pleased to release this summary of recommendations of its Low-Carbon Prosperity Task Force, a business-led multistakeholder collaboration that has engaged over 80 Forum Industry Partners and experts from nearly 40 academic, non-governmental organizations and public sector institutions over the past six months.

In January, at the World Economic Forum Annual Meeting 2009 in Davos-Klosters, Switzerland, United Kingdom Prime Minister and Group of 20 Chairman Gordon Brown appealed for "business to formulate with us the economic and policy conditions that will incentivize their investment and that will bring the low-carbon economy into being." To this end, he called on the Forum to facilitate a "new business-led mission in support of an ambitious climate agreement in Copenhagen, focused on the policies that will lead to business investment in a low-carbon recovery."

In response, the Forum organized six multistakeholder working groups to examine how the transition to a low-carbon growth could be accelerated in key areas. These industry executives and experts collaborated in a series of workshops and virtual meetings on the Forum's WELCOM platform. The implications of their work are profound. Their proposals constitute a potential new dimension of the emerging international architecture on climate change – a series of practical public-private collaborations to enable faster progress within the overarching framework that governments negotiate.

This report builds on two prior phases of work that Forum Members have undertaken on climate change in cooperation with governments. The first was a task force of 24 CEOs that issued initial policy suggestions to G8 leaders before their 2005 Gleneagles Summit at the invitation of Prime Minister Tony Blair. The second was a detailed set of recommendations on the design of a long-term policy framework developed as part of the Gleneagles Dialogue and endorsed by over 100 CEOs from every region and industrial sector. Transmitted in June 2008 to G8 Leaders before their summit in Hokkaido-Toyako, these CEO recommendations were the starting point for the Task Force's work.

The World Economic Forum would like to express its gratitude to all Task Force participants and their organizations for their deep commitment and continued engagement, as well as to PricewaterhouseCoopers, which served as the project adviser to this initiative. Although the observations and proposals in this document enjoy broad support, they do not necessarily reflect the views of every individual participant. A full list of the current participants in the Task Force can be found at end of this document.

We also wish to thank Prime Minister Brown and the UK government for their inspired leadership and support. That so many of our Industry Partners and non-business constituents responded to his challenge is a testament to the growing support within the international community for an effective international strategy to address climate change.

Special thanks are also due to those in the Forum's Environmental Initiatives team who manage the various working groups, including Brindusa Fidanza and Shruti Mehrotra, as well as Martijn Broekhof, seconded to the Forum from PricewaterhouseCoopers.

We hope that these recommendations will stimulate a wider debate among economic, environmental and foreign affairs officials about the contribution that public-private collaboration can make to the achievement of a prosperous, low-carbon future, including in developing countries. The full report of the Task Force can be found at http://www.weforum.org/climate.

Sincerely,

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Background

In June 2008, over 100 CEOs from every industrial sector and region of the world transmitted a set of detailed recommendations to G8 leaders for the design of a post-Kyoto Accord long-term climate framework that would be both environmentally effective and economically efficient[1]. At the heart of the recommendations was a call for public-private collaboration to construct enabling mechanisms in such areas as investment, energy efficiency, technology development and common metrics to help catalyse private investment and innovation on a scale necessary to transform energy systems around the world over the next few decades. The CEOs argued that this "bottom-up" climate architecture is needed to facilitate achievement of the "top-down" national commitments and global goals that governments are seeking to establish in a new United Nations climate accord.

At the World Economic Forum Annual Meeting 2009, Prime Minister Gordon Brown of the United Kingdom asked the Forum to facilitate a business-led Low-Carbon Prosperity Task Force to build on the CEO recommendations by detailing *how* this bottom-up enabling architecture should be designed and implemented[2]. He requested that a first report of specific proposals and policy recommendations be delivered to governments by September 2009 for economic, finance and environmental officials to have time to consider them in relation to the crucial United Nations Framework Convention on Climate Change negotiations in Copenhagen (COP15) in December 2009[3].

Over 80 Forum Industry Partners from all sectors and regions have answered Prime Minister Brown's call. Representing close to 20% of the market capitalization of all publicly-traded corporations in the world, these companies have delegated senior executives and specialists to work with counterparts from over 40 NGOs, universities, think tanks, international agencies and governments. In total, over 200 professionals worldwide are contributing to the Low-Carbon Prosperity Task Force.

Over the past six months, this extraordinary constellation of many of the world's leading experts on low-carbon growth has developed concrete proposals in the seven areas requested by the prime minister: energy efficiency; technology development; investment; common metrics; deforestation; market mechanisms; and adaptation.

Summary of Recommendations

A successor to the Kyoto Protocol that establishes stronger national targets and international mechanisms for emissions reductions is essential in order to send clear signals to investors, managers and consumers. But, while agreement among governments in Copenhagen on the shape of a new UNFCCC climate protocol is necessary to place the world economy on a low-carbon trajectory as recommended by the scientific community, it will not be sufficient.

An unprecedented shift in private sector investment and behaviour will be required within the next 10-15 years to meet the goal of avoiding dangerous climate change[4]. Based on current trends, national policies and measures (such as cap and trade programmes or other carbon regulations) are unlikely to be ambitious enough to provoke such a major economic transformation within this short time frame.

For this reason, the new climate regime should have a very different geometry than its predecessor. In addition to top-down elements such as binding national commitments, other mechanisms and initiatives are needed to stimulate a shift in private sector behaviour more directly and rapidly.

Governments must create clarity about the successor to the Kyoto Protocol in Copenhagen but they should also build a complementary enabling architecture capable of accelerating progress within the private sector over the next five to ten years in those areas with greatest potential to lower the carbon intensity of economic growth, such as energy efficiency, technology development, low-carbon infrastructure investment and deforestation, especially in developing economies.

Adding such a bottom-up dimension to the global climate agreement would be in the political interest of all governments for three reasons:

1) A more direct, results-oriented push on energy efficiency, technology, investment, deforestation and adaptation is essential to add credibility to the mid-term targets set by a new United Nations accord.

2) Given the scale of investment required and recent deterioration of public finances in many countries, only by building mechanisms that leverage increased public resources with much larger amounts of private sector capital will promises by developed countries to provide financial and technical assistance to developing countries be credible.

3) Since it will take time to agree on the details and implement a new global climate deal, it is important to press ahead with concrete actions. An official initiative to build an effective set of mechanisms that engages the private sector and speeds the pace of low-carbon technology deployment, development and related investment in economies around the world would provide the international community with an insurance policy so that political momentum on climate change is maintained, even if the climate negotiations are not fully resolved by the end of this year.

Accordingly, the Task Force recommends that UNFCCC parties agree at COP 15 to create a set of public-private initiatives in close consultation with business and other non-governmental experts. This would create a bottom-up dimension to the world's climate strategy that would complement and enable the new negotiated agreement. It would engage finance, economic, energy and environmental officials in substantive dialogue with business and other non-governmental experts over the next two years. The Major Economies Forum offers one possible platform for organizing this public-private collaboration for the benefit of the wider United Nations process, which the Task Force would be pleased to assist if requested. Alternatively, a process of variable geometry could be considered in which discussions on individual proposals are pursued in the most relevant fora.

This summary report presents highlights of the concrete proposals the Task Force has developed, which could serve as a starting point for these discussions. Detailed descriptions of recommendations are contained in the full papers of each corresponding working group, which form an accompanying report.

In brief, the Task Force proposes a suite of substantive, international public-private initiatives to include:[6]

Energy Efficiency

- A **global platform for intra-industry cooperation on energy efficiency** via the addition of a private sector dimension to the International Partnership for Energy Efficiency Cooperation (IPEEC) at the International Energy Agency

- As part of this, development of a set of **globally-accepted, minimum energy-efficiency standards** on a limited but critical range of energy-intensive industrial and consumer goods, as well as with respect to the retrofitting of old and construction of new buildings

Technology Development

- An international public-private portfolio of **10 large-scale integrated smart grid demonstration projects** across different regulatory regimes

- An international public-private portfolio of up to **25 carbon capture and sequestration demonstration projects** between 2013 and 2025

- A network of **regional energy research and innovation centres** modelled on the Consultative Group on International Agricultural Research (CGIAR) to help developing countries accelerate the uptake of renewable energy technologies to help implement their low-carbon growth plans

- An **international public-private dialogue to prepare the ground for an international agreement to remove environmentally harmful energy subsidies**, for formal consideration by governments during 2011

- **An informal international public-private dialogue to discuss the role of nuclear power** in the low-carbon economy and how the related policy architecture should be designed to reflect its contribution

Investment in Developing Countries

- A suite of **public-private, low-carbon infrastructure investment funds** in each developing country region, ready for business by 2013 and able to mobilize up to US$ 75 billion per fund every three years to 2030

Common Standards and Metrics

- **A joint project of the International Accounting Standards Board (IASB) and the Climate Disclosure Standards Board (CDSB) to develop a principles-based international financial reporting standard** for corporate climate disclosure suitable for ultimate adoption by regulators

- **A global standard for the labelling of emission footprints** on consumer products, building on work currently underway in the non-governmental organization community

Avoided Deforestation and Land Use Change

- An **international public-private dialogue to "Build REDD+"** launched at COP15, hosted by key forest nations and involving international organizations, the scientific community, civil society and the private sector

Market Mechanisms

- A transparent and structured **public-private expert dialogue to help develop the rules and institutions necessary to create efficient, linked carbon markets**

Adaptation

- **A major public-private dialogue on adaptation** hosted by developing countries and involving the private sector, international organizations, bilateral aid agencies and civil society at COP15 or shortly thereafter

1 Energy Efficiency

The most effective strategy available for quickly shifting the carbon profile of major economies is to scale the application of best available technologies. Improving energy efficiency represents the largest, most cost-effective and immediately available way to mitigate GHG emissions. For example, in the International Energy Agency's (IEA) 2008 *World Energy Outlook*, energy efficiency gains account for over 50% of the abatement potential in its 450 ppm policy scenario[7].

Project Catalyst estimates that investments in energy efficiency could provide 35% of the emission reductions required by 2020[8]. Moreover, most of these reductions could pay for themselves. Recent analysis by the McKinsey Global Institute suggests that 6.5-8 Gt of abatement could be achieved at an average internal rate of return of 17%[9].

To capitalize more fully on this opportunity for progress, the Task Force Working Group on Energy Efficiency proposes creation of:

- **A scalable platform to enable worldwide progress on energy efficiency within individual industry sectors**. Specifically, the May 2009 agreement among G8+5 countries to create an International Partnership for Energy Efficiency Cooperation (IPEEC) at the International Energy Agency[10] should be given an explicit, new private sector dimension, providing an officially sanctioned and supported global platform for voluntary intra-industry discussions and cooperation on energy efficiency within many sectors. This initiative would be aimed at replicating many of the features of the Japanese government's successful Top Runner programme in which various industries were encouraged to make continuous progress towards best-in-class efficiency benchmarks[11].

  Such intra-sectoral cooperation might take the form of creating common measurement and benchmarking methodologies; negotiating arrangements to share or transfer technology; recommending standards for government procurement; establishing industry-wide emission targets, standards and/or product labelling frameworks; or a combination of some or all of the above. The process would be open to companies from all countries.

- **An initiative to create a set of globally-accepted energy performance standards on a limited but critical range of energy-intensive industrial and consumer products, potentially combined with a globally coordinated early retirement programme**. Implementation of global product energy performance standards would deliver significant energy and financial savings for consumers and businesses and would benefit manufacturers by harmonizing existing national standards, reducing trade barriers and opening up new market opportunities. This initiative could build on the strong experience and learning that has been achieved from the Top Runner programme and other successful standard setting methods in the US and EU on the most energy-intensive products. In addition, product energy performance standards could be combined with national measures to promote early retirement of inefficient goods, which could further deliver a win-win effect across the world economy, simultaneously driving lower energy consumption, lower overall costs to businesses and consumers and giving manufacturing activity a boost in critical industries. This early retirement programme could be repeated over time to produce successive waves of improvement within given product categories until the potential for efficiency gains within them with best available technology was mostly exhausted.

The process would be structured as a business-government dimension of IPEEC, linking the voluntary industry discussions proposed above with the intergovernmental dialogue the IPEEC member governments have already planned to establish.

- **As part of this public-private, standard-setting process, a special sectoral initiative to set standards relating to the retrofitting of old and construction of new buildings**. The built environment is the sector with one of the highest potentials for energy efficiency reductions[13]. This initiative would seek to implement common energy performance certification and labelling methodologies; adopt and enforce binding zero net energy targets for all new and existing buildings; finance and deliver whole building efficiency retrofits to existing buildings; and drive innovation through voluntary programmes and public funding for research and development.

- **A set of regional, energy-efficiency capacity building centres to support the diffusion of best available technologies in developing countries**. Based on positive experiences of semi-governmental agencies such as the Carbon Trust in the United Kingdom[14] and foundations such as the Energy Foundation in the United States[15], these centres would provide advice, support and capacity to national governments, especially in developing countries, to help formulate effective energy efficiency policies as well as offer practical advice and technical services to businesses and consumers on how to implement energy efficiency measures. These activities could form part of the set of energy innovation centres discussed in section two below, thus creating an international network of applied energy efficiency expertise.

2 Accelerating Investment in Low-carbon Technologies

The international community's ability to transform energy systems to meet future demands for growth and lower GHG emissions will ultimately depend on a burst of technological innovation over the next few decades. The potential of key low-carbon technologies is now well known – the latest microeconomic analysis suggests they can offer up to 11% of GHG abatement potential to 2030; and up to 27% by 2050[16].

Technology's biggest contribution to a low-carbon future will be its ability to expand low-carbon choices and make the options ever cheaper. This requires driving technologies down the cost curve through advancements in science, engineering and mass deployment. The long-term, risky and often very costly nature of research, development and deployment of potentially revolutionary technologies requires intensified and better coordinated public and private sector efforts.

To this end, the Task Force Working Group on Accelerating Investment into Low-Carbon Technologies proposes creation of:

- **A public-private initiative to create an international portfolio of 10 large-scale integrated smart grid demonstration projects across different regulatory regimes**. There is a need for public-private partnership investment and risk sharing via a series of proof point demonstration projects to help transcend the current challenges facing the smart grid industry and to clearly illustrate the value proposition to investors and governments[17]. Creating a number of well designed pilot projects 2010 onward across 10 cities in the European Union, China, South Asia and the United States to represent a range of implementing environments, and sharing the learning in an open source platform will enable the smart grid industry to reduce its risk premium on capital and operating costs to a level that makes its investment case more viable.

Within the 10-city context, linkages to programmes designed to reform utility pricing incentives and implement building standards and electrified transportation networks could also be pursued, creating a set of integrated low-carbon city demonstration projects. As the G20 chair for 2010 and leader of the smart grid technology working group of the Major Economies Forum, South Korea would be well positioned to help catalyse such an international initiative.

- **A public-private initiative to create an international portfolio of up to 25 carbon capture and sequestration (CCS) demonstration projects between 2013 and 2025**. Demand for coal has been growing faster than any other energy source and is projected to account for more than one-third of incremental global energy demand to 2030[18]. The development and testing of competing CCS technologies could be accelerated through a coordinated series of large-scale targeted demonstration projects over the coming decade. These demonstration projects would be jointly funded by governments and companies, with the financing of the incremental cost for CCS being supported by developing countries, multilateral development banks and available carbon financing mechansims.

  Partnership arrangements could be struck on bilateral or plurilateral basis among the United States, China, European Union, Australia, South Africa, India and other countries. Once the technical viability of various CCS approaches is better established through this global initiative, developed and developing country governments could consider whether to establish a comprehensive global strategy to deploy the best technologies at scale by introducing into the post-Kyoto framework a sector-based approach on coal-fired power plants and/or including various financing mechanisms such as an international carbon sequestration unit within the Clean Development Mechanism (CDM).

- **A network of regional energy research and innovation centres modelled on the Consultative Group on International Agricultural Research (CGIAR)**[19]. The Consultative Group on International Energy Research (CGIER) would facilitate applied research programmes on locally-relevant low-carbon energy solutions through open source collaboration among academics, businesses and other actors, similar to the multistakeholder GreenTech model in China[20].

  In addition, they could develop full life-cycle views on regional technology innovation, offering regional “pull” models for technology diffusion; facilitate regional intellectual property rights mechanisms, such as patent trading platforms; stimulate research and dialogue on pathways to reductions in harmful energy subsidies; and promote efforts to bring to scale solar photovoltaic (PV) technology (especially across the US, Japan EU, India and China), distributed models of solar PV (especially across India, the Middle East/North African and sub-Saharan Africa) and advanced wind and biofuel technologies.

  Funding for the centres would be drawn from a range of public, private and philanthropic sources. Their main purpose would be to support nationally appropriate mitigation action plans through the mobilization of multistakeholder networks of expertise both inside and outside the region in question.

- **An informal intergovernmental dialogue on energy subsidies**. According to recent OECD modelling, eliminating the US$ 310 billion of annual energy subsidies to developing country consumers would reduce emissions in some countries by over 30% by 2050, and reduce global GHG emissions by about 10% by 2050 while at the same time raising economic efficiency[21]. For example, the OECD suggests that energy subsidy removal would lead to an increase in household real income by 2.5% in India and by 0.7% in China by 2050.

  A platform should be created early in 2010 to enable the major energy producing and consuming economies to engage in an informal intergovernmental dialogue, informed by private sector and expert representatives, to develop a potential international agreement on energy subsidies, for formal consideration by Parties to the Conference, or the G8/G20 during 2011 or 2012.

- **An informal international public-private dialogue on the role of nuclear power in the low-carbon economy**. A platform should be created early in 2010 to enable governments and experts to discuss the role of nuclear power in the low-carbon economy and how the related policy architecture should be designed to reflect its contribution, including the establishment of international procedures frameworks and targets, such as for safety, standardization and security issues.

3 Investment in Developing Countries

Seventy-seven per cent of the energy infrastructure that will be needed by 2030 has yet to be built[22]. The IEA forecast that the majority of these projects will be in emerging economies, particularly India and China.[23] Cost estimates vary, but developing countries are estimated to require hundreds of billions of dollars of low-carbon energy investment in the coming 10-15 years to avoid being locked into high-carbon infrastructure for the next half-century. Carbon markets and international offset schemes like the CDM will not be able to deliver sufficient financial flows to meet these investment needs within this time frame. And, while developing economies are justifiably demanding large increases in official development assistance (ODA) from richer countries for this purpose, this is not likely to be feasible at the necessary scale, especially given current levels of public debt among OECD governments and the large funding gap for the Millennium Development Goals they are struggling to close.

Thus, mechanisms are needed to leverage the climate-related increases in ODA that developed countries do provide with larger amounts of long-dated debt and patient equity from private investors, allowing for flows from an international offset market to grow over time. By far the largest potential source of such long-term private investment is institutional investors, such as public and private pension funds, insurance companies, sovereign wealth funds, endowments and private banks. Most institutional investors invest in funds managed by private investment management firms.

This allows them to access a wide variety of investible projects in markets far from their centre of operations, exercise effective governance, achieve targeted “exit” returns and, most importantly, diversify their risk. There is growing interest among such investors in low-carbon infrastructure in developing countries[24], but the volume of investment by them remains low because of the considerable risks and uncertainties involved and the related fact that few large, diversified funds exist for this purpose.

The investor community has confidence in multilateral and bilateral development finance institutions and values in particular their ability to enhance the creditworthiness of transactions by participating in or providing credit enhancement to investments. Private investors sometimes require the involvement of the World Bank or regional multilateral development banks (MDBs) before they enter new markets and investment classes in a material way. Accordingly, MDBs and bilateral development finance agencies have an opportunity to play a transformational role in stimulating private energy investment in emerging and developing economies if they find a way to scale their credit support for such transactions.

A public-private investment model in which public credit enhancement and regulatory capacity building is combined with private institutional capital has the potential to unlock significant investment flows for low-carbon energy systems in developing countries, far beyond what can be financed directly from foreign aid budgets.

Accordingly, the Task Force Working Group on Accelerating Investment into Low-Carbon Technologies proposes the creation of:

- **Public-private, low-carbon infrastructure investment funds in each developing country region** (ASEAN and Pacific, China, India, Latin America, Middle East/North Africa, sub-Saharan Africa), which draw in equity from institutional end-investors such as pension and sovereign wealth funds and use a new generation of public finance (risk mitigation) mechanisms from multilateral and bilateral development finance institutions[25]. An initial, streamlined model (MDB Low-Carbon Challenge Funds) could catalyse up to US$ 10 billion per region per three-year cycle, ready for business by 2011.

  A second, more ambitious model (Regional Low-carbon Cornerstone Funds) could catalyse US$ 50-75 billion per region each three years and could be ready for business before the start of the second commitment period in early 2013. In this way, the increased official development assistance that developed countries provide in connection with a new agreement under the UNFCCC could be structured to mobilize the maximum possible amount of low-carbon financing for developing countries.

  - **MDB Low-carbon Challenge Funds**[26]. Multilateral and bilateral development finance institutions would bid out preferential access to regional packages of their public finance mechanisms. Leading global (or regional) fund management firms would tender for the bids, explaining how they would leverage the mechanisms on offer to create a new fund (or strengthen an existing one) and generate enhanced investment flows as a result. The credit support packages of development finance institutions would improve the risk/return ratio of projects within these low-carbon infrastructure funds. Based on the reputation and track record of the bidding fund manager, institutional investors could join the fund management firm's bid, offering the multilateral finance institution more confidence about its offer.

    The packages of credit support could also be opened to bids from end-investors themselves, who would select their preferred fund managers to administer them. Fund managers would be paid a negotiated fee to manage the fund. The funds could work on a three-year cycle, and the right to access the public finance mechanisms could be re-tendered every five to seven years. The development finance institutions providing the public finance mechanisms would not be involved in specific investment decisions.

  - **Regional Low-Carbon Cornerstone Funds**[27]. Regional cornerstone funds for low-carbon infrastructure would be created and administered by the IADB, AfDB, AsDB, EBRD and EIB or through establishment of specialized institutions modelled on the US Overseas Private Investment Corporation. They would raise anchor equity (*e.g.* US$ 5 billion) from major institutional investors as well as official and philanthropic donors and then invite leading global and regional fund management firms to establish low-carbon energy funds, clean infrastructure funds, low-carbon building funds, green-tech funds, etc. by bidding for a distribution of part (*e.g.* US$ 1 billion) of the anchor equity. These firms would then galvanize their investor network to raise a further US$ 4 billion each from the wider universe of secondary institutional investors who invest in global emerging markets.

    Multilateral and bilateral development finance institutions active in the region would establish an agreement with these funds to provide preferential access to a tailored package of their risk mitigation instruments. Since most of the funds' investments would have infrastructure-style investment characteristics, they could then borrow from banks and debt capital markets to secure at least a 66% debt-to-equity ratio for their project portfolios. In this way, across the five funds, US$ 25 billion of public and private investor equity could

finance US$ 50-75 billion of projects on a three-year investment cycle and be re-tendered every five to seven years. During the period 2013-2030, roughly six investment cycles could occur, representing a potential investment flow of up to US$ 300-450 billion in each of the six regions.

The UN or negotiating parties are invited to ask a group of leading investors, financial experts and industry representatives to work with finance ministers and their officials to develop these ideas. Such a public-private climate finance discussion process could be launched prior to the COP15 meeting in December. It could progress over the next six to twelve months, linked to a suitable international forum. Events such as COP15 and the World Economic Forum Annual Meeting 2010 in Davos in January can provide useful early milestones for the process.

4 Common Metrics

Despite the increase in the number of company reports and shareholder requests for information in recent years, climate-related corporate disclosure in mainstream reports remains the exception rather than the rule. The information that is disclosed varies widely in format from company to company, is typically not globally consolidated and has no common public repository or repositories.

In the absence of a generally-accepted reporting framework, comparative analysis by the investment research community and the dynamics of peer and stakeholder pressure through public benchmarking have yet to fully materialize. With shareholders and managers constrained in their ability to assess relevant, carbon-related risks, financial markets are unable to fully internalize this crucial aspect of environmental sustainability in the allocation of capital.

Moreover, regulators in many jurisdictions are introducing GHG accounting rules that focus on measurement and monitoring of “direct GHGs”, i.e. those emitted directly from facilities owned and controlled by certain companies. A large multinational company operating in Australia, Canada, New Zealand, the United Kingdom, European Union and the United States, for example, is likely to be subject to up to 20 existing or imminent legislative provisions specifically aimed at regulating GHG emissions and energy use. These national differences in approach are producing variations in the quality, quantity and relevance of disclosure, and are fostering uncertainty among preparers about what they should report and how to comply with user needs.

In other words, a lack of comparable, comprehensive and reliable climate-related information from corporate emitters is a significant impediment to the transition to a low-carbon model of economic growth. Fortunately, a *de facto* standard for the preparation of corporate/entity level GHG inventories has already emerged from the cooperation of the business and environmental NGO communities in the form of the GHG Protocol[28]. And work is already underway in these communities through the Climate Disclosure Standards Board to create a generally accepted framework for the disclosure of emission inventories, carbon-related risks and management strategies in the annual reports of corporations[29]. The direct emissions component of this framework is based on the GHG Protocol.

Governments should direct their securities and accounting regulatory bodies to engage in these path breaking processes with the ultimate goal of creating a generally accepted set of international accounting principles that can be adopted by securities and other regulators for inclusion in policy responses to climate change that require monitoring and reporting of climate risks, opportunities, strategies and GHG emissions.

To this end, the Task Force Working Group on Universal Standards and Metrics proposes the creation of:

- **A joint project of the International Accounting Standards Board (IASB)[30] with the Climate Disclosure Standards Board (CDSB) to develop a principles-based international financial reporting standard for corporate climate disclosure suitable for ultimate adoption by regulators**. The output of the joint project should include:

  - A comparative review of national regulatory policy responses to GHG disclosure requirements, drawing upon initial work being conducted by the industrial, accounting, financial and environmental communities through the CDSB

  - A practical and technical assessment of the complementary effect on standards of the International Assurance Engagement Standard on GHG statements being developed by the International Federation of Accountants through the International Auditing and Assurance Standards Board

  - An impact assessment identifying the types of organizations for which monitoring and reporting is likely to be material and the associated cost-benefit analysis

- **The Task Force Working Group on Universal Standards and Metrics also recommends prioritization of a global standard for the assessment and reporting of product carbon footprints to enable better transparency of emissions associated with their production and consumption.** While numerous initiatives are already underway in the World Business Council for Sustainable Development (WBCSD)/World Resources Institute (WRI) and the International Standards Organization (ISO), this process could be facilitated by one or more international organizations such as the WBCSD/WRI, ISO, OECD, UNEP or IEA/IPEEC

5 Avoided Deforestation and Land Use Change

Forest-based mitigation offers a substantial win-win abatement opportunity by 2020. Achieving half of the reductions available from terrestrial carbon, mainly through avoided deforestation, will deliver 4 to 5 Gt of abatement by 2020 – around one-quarter of the abatement required to reach a 450 ppm trajectory[31]. These efforts are cheap relative to the abatement prize: according to analysis by Project Catalyst, achieving approximately 60% of this abatement by 2020 is likely to be on the order of 15-35 billion euros with each tonne costing well below 15 euros[32].

Frontloading forest-based mitigation in this fashion would buy time, as currently expensive clean technologies are demonstrated and made ready for large-scale deployment from 2020 onward. Furthermore, investment in forest-based mitigation would create alternative livelihoods and support sustainable development for forest populations, more than half of which live in extreme poverty.

It is clear that public financing will be necessary to build the foundations at the international and national levels for the large-scale implementation of REDD+ activities[33]. This “readiness for REDD+” phase will require 3 billion euros over five

years at minimum for capacity building alone. According to analysis by Project Catalyst, subsequent implementation at scale will cost an annual average of 8-18 billion euros per year between 2010 and 2020. Some estimates, such as the Eliasch Review, suggest more[34]. The earlier readiness is built, the faster private finance can be deployed to take over this burden from the public sector. Depending upon the project type and geography, and on the scale of demand created for REDD+ credits through carbon markets, the private sector will be able to meet a portion of the financial flows required by 2020.

Several policies are required to attract private sector finance to REDD+ activities:

- Parties should include forest carbon in the new climate agreement through a mechanism such as REDD+ and ensure adequate stability of such regulation over the long term

- Within such an agreement, these projects must produce carbon credits of compliance grade that are tradable as offsets and fully fungible with other credits in international carbon markets

- Measurement, reporting and verification (MRV) procedures must be robust and include the use of systems that can ensure reliable calculations of the carbon value of projects

- Forest-based mitigation efforts should be made available for investment at a project level, but placed within the context of national baselines and forest nations' Nationally Appropriate Mitigation Actions (NAMA) Plans

- A risk management framework for this new asset class will be required to mitigate risks such as unforeseen reversal

The development of each of these policies will require a process of extensive dialogue between the public and private sectors. Accordingly, the Task Force Working Group on Avoided Deforestation and Land Use Change recommends the creation of:

- **An international public-private dialogue to "Build REDD+" hosted by key forest nations involving the private sector, international organizations and civil society**. Launched at or immediately after the COP15 meeting, this process would work to build the international and national architectures required for REDD+ to become an applicable national strategic planning mechanism and to be ready for private sector engagement by 1 January 2013. It would encompass the following workstreams:

  - *Enabling national policies:* to enable forest nations to develop nationally appropriate mitigation action plans or low-carbon growth strategies that incorporate policies to attract private sector finance as soon as possible after "readiness for REDD+" public measures are undertaken

  - *Designing appropriate carbon markets and credit systems:* to develop the designs for forest-based credits, including mechanisms to address the issue of permanence and a risk management framework, taking into account the lessons learned from forestry projects in the CDM and voluntary carbon markets, all ready for business by 1 January 2013

  - *Building robust monitoring, reporting and verification systems:* to develop the necessary level of sophistication of systems required for accurate REDD+ monitoring, reporting and verification, a major public-private initiative is required to develop comprehensive Earth Observation systems and field measurement and monitoring systems to be ready for use by 1 January 2013

- *Developing public-private partnership models for REDD+:* to attract and absorb the necessary levels of private capital through carbon markets, and to attract investor capital in its own right, an international process is required to develop scalable, replicable and bankable models for REDD+ projects across the forested nations, within the next 24 months, including undertaking specific demonstration projects as early actions to validate these models

6 Market Mechanisms

A new international framework should allow national governments to employ market-based domestic policies best suited to their own national circumstances; however, it should also facilitate the linkage of explicit or implicit carbon values established at various national and regional levels. This would enhance the economic efficiency of efforts to combat climate change and stimulate low-carbon investment, especially in developing countries.

A global carbon market will need to be broad, deep and liquid to be effective. This is best achieved through ambitious and coherent national emissions reduction targets; early and effective linking of national and regional schemes; and the development and scaling up of systems for the crediting of project-based and sectoral emissions reductions.

Governments need to set a target date for linking existing and emerging emissions trading systems. They must agree on a broad set of principles to ensure that the system design does not impede subsequent linking, and that will ensure the environmental integrity of the system. The most important areas for policy harmonization are target-setting, the use of international and domestic carbon credits, rules for monitoring reporting and verification, mechanisms for avoiding excessive price fluctuations and the role of financial intermediaries.

A new framework needs to encourage greater participation in the carbon markets from unrepresented regions, and should set out the path for participating CDM countries to transition to sector- and national-level targets. Approaches beyond the existing mechanisms could, if well designed, help to deliver emissions reductions in sectors (e.g. reforestation, avoided deforestation, energy efficiency) and projects (e.g. carbon capture and storage) currently not effectively targeted by international climate policies.

The most promising ideas that have emerged include:

- *Sectoral approaches:* where emission targets are agreed at a sector level; targets could be set at a national or international level

- *Simplified programmatic CDM:* where establishing additionality is no longer on a case-by-case basis, thereby reducing the project development costs to participants

- *Inclusion of forestry credits (REDD+):* as forest-based mitigation becomes a vital part of a global deal on climate change, incorporating the forestry sector into carbon markets will be important to drive investments into this area

Any new mechanisms should be designed to stimulate and scale-up private sector flows of finance. For example, there should be clarity about the carbon instruments being created through each mechanism and the degree of fungibility of new instruments with existing instruments. Since the private sector is more accustomed to engaging at the project, sub-sectoral and sub-national levels

where project boundaries are clear and risks are easier to quantify and manage, one of the critical challenges will be providing well-conceived incentives – commensurate with the different inherent risks – for engagement at the sectoral or national level.

While governments have the responsibility for setting emissions reduction targets in line with what the science suggests is necessary to avoid the dangerous effects of climate change, the business community has special competencies relevant to the design of carbon markets and other market mechanisms.

For this reason, the Task Force Working Group on Market Mechanisms recommends creation of:

- **A transparent and structured public-private-expert dialogue to support the development of the rules and institutions necessary to create efficient, linked carbon markets**. The Carbon Market Dialogue would explore common design criteria to enable linkage and ensure a shared level of environmental integrity across schemes; improvements to the offset market; design approaches for reducing price fluctuations without distorting markets; and use of revenues from auctioning. Launched within the next six months, the Dialogue could report its interim findings into the Conference of the Parties in 2010 and its final conclusions and recommendations, together with a future roadmap for the emergence of an international carbon market in 2011.

7 Adaptation

Adaptation to climate change is a global imperative that must be tackled as a priority in a post-Kyoto accord. The global private sector – which includes not only large multinational and national entities, but also millions of small and medium-sized enterprises, informal sector businesses, small-scale farms and fisheries – will be significantly impacted by climate related changes. There is a potential to unlock significant new and additional actions for adaptation from these private sector actors through well-designed international and national policies.

Understanding and supporting the private sector role in adaptation does not absolve developed country governments of their responsibility to fund international adaptation efforts. Rather, such understanding and support is crucial for ensuring that public funds and associated policy instruments leverage the maximum adaptation actions possible by the private sector and avoid perverse incentives that would promote maladaptation on their part.

There are several public policies required to accelerate and enable these actions, including incorporating the private sector into adaptation planning; strengthening incentives for effective adaptation by business; taking advantage of opportunities for public-private partnerships and mainstreaming for adaptation; and making international frameworks the springboard for engaging business in adaptation.

The role of the private sector in adaptation is a relatively new field that requires further analysis and study. Policy suggestions need to be discussed and developed. Specific propositions to help raise additional financing for adaptation efforts will require further exploration and development.

For this purpose, the Task Force Working Group on Adaptation recommends creation of:

- **A major public-private dialogue hosted by developing countries and involving the private sector, international organizations, bilateral aid agencies and civil society launched in COP15 or shortly thereafter**. This initiative should focus on three key areas:

  - *Development of innovative public-private financing mechanisms for adaptation*: Innovative public-private financing mechanisms for adaptation should be explored that build on the successful previous experience with similar mechanisms such as the Global Fund and Stop TB or IFFm from the health sector

  - *Further development of the national policies required to engage the private sector in adaptation*: The aforementioned national policies to catalyse private sector engagement need to be further developed; challenge funds to spur private sector innovation for adaptation and public-private partnerships for infrastructure are options that require additional development in particular, among others

  - *Specific analysis of how to engage the private sector in support of adaptation efforts in least developed countries*: As least-developed countries represent some of the most difficult areas to engage business support for adaptation, there is a need for further substantive analysis to develop the public-private partnership models that can be successful in these countries

Conclusion

National economic policies, business strategies and a post-Kyoto climate accord can and should be aligned to stimulate a new era of low-carbon prosperity over the next few decades. But to make a new paradigm of low-carbon economic growth possible, the international community will need to expand its conception of international climate change architecture.

Transforming energy systems at this scale and over this time frame will require several new public-private institutional enabling mechanisms to be built and linked to the new regime, effectively a bottom-up dimension to the world's climate strategy.

This report proposes specific ways to construct these new pieces of climate architecture. It is the Task Force's hope that, in recognizing the potential of such an approach, governments will engage in a wider discussion among themselves and with business and non-governmental communities to build a practical enabling environment. This environment should be conducive to catalysing a step change in private sector action to raise energy efficiency, develop and deploy revolutionary existing and new technologies, reduce deforestation and make sustainable investment choices at scale and speed.

The Task Force calls upon governments to launch this set of initiatives at the COP15 meeting in December 2009. The aim should be to achieve their implementation before the start of the second commitment period on 1 January 2013. For reasons of efficacy, this process should not be limited to the UNFCCC. Rather, it should have a variable geometry, encompassing the most relevant and competent international institutions.

The Task Force's companies and non-business experts are planning to deepen their investigation of these issues and proposals in the context of their ongoing activities at the World Economic Forum and elsewhere. They stand ready to contribute to and support the intergovernmental process as requested.

Endnotes

1 The *CEO Climate Policy Recommendations to G8 Leaders* (July 2008) were facilitated by the World Economic Forum in partnership with the World Business Council on Sustainable Development as part of the G8 Gleneagles Dialogue on Climate Change, Clean Energy and Sustainable Development. http://www.weforum.org/documents/initiatives/CEOStatement.pdf

2 The Task Force on Low-Carbon Prosperity was launched at a press conference on Tuesday 31 March in London, on the eve of the G20 April Summit. The open letter sent to the G20 and signed by the companies and experts involved in the task force can be found at http://www.weforum.org/climate

3 On 7-18 December 2009, the parties of the UN Framework Convention on Climate Change will meet for the 15th annual Conference of Parties in Copenhagen to negotiate a new international agreement on climate change policy, *i.e.* the successor to the Kyoto Protocol.

4 The 2°C limit was first suggested by the European Union in 1996 and adopted in the IPCC Third Assessment Report (2001). http://www.ipcc.org

5 For example, National Appropriate Mitigation Action (NAMA) and so called Low-Carbon Development Plans.

6 This report is available on http://www.weforum.org/climate

7 *World Energy Outlook 2008*, International Energy Agency. http://www.iea.org

8 Analysis carried out by Project Catalyst, 2009. Project Catalyst is an initiative of the ClimateWorks Foundation. It was launched in May 2008 to provide analytical and policy support for the United Nations Framework Convention on Climate Change (UNFCCC) negotiations on a post-Kyoto international climate agreement. http://www.project-catalyst.info

9 *How the world should invest in energy efficiency*, July 2008, McKinsey & Company.

10 The International Partnership on Energy Efficiency Cooperation (IPEEC) was launched at the G8 Energy Ministers meeting, which took place in Rome, Italy, on 24-25 May 2009. IPEEC aims to promote energy efficiency worldwide by providing a high-level intergovernmental forum for discussion and information exchange. For the full declaration see http://www.enecho.meti.go.jp/topics/g8/ipeecsta_eng.pdf

11 For a comprehensive evaluation of the Top Runner programme, see www.aid-ee.org/documents/018TopRunner-Japan.PDF

12 The Collaborative Labeling and Standardising Program (CLASP) published a comprehensive overview of various standard setting methodologies, including the “Engineering/Economic Approach”. http://www.clasponline.org/files/Chapter6_GB2ndEdition.pdf

13 McKinsey & Company estimates the reductions from buildings by 2020 at 2.4Gt (1.7 Gt residential, 0.7 Gt commercial), compared to transportation 0.9Gt, industrial 3.2Gt, and transformation 1.5Gt. Source: *How the world should invest in energy efficiency*, July 2008, McKinsey & Company.

14 For more information see http://www.carbontrust.co.uk

15 For more information see http://www.ef.org/home.cfm

16 *Enabling Technologies for Low-Carbon Growth*, 2009, The Climate Works Foundation.

17 More information on smart grids is provided in a white paper published by the World Economic Forum in partnership with Accenture. *Accelerating Smart Grid Investments*, July 2009, World Economic Forum. http://www.weforum.org/pdf/SlimCity/SmartGrid2009.pdf

18 *World Energy Outlook 2008*, International Energy Agency.

19 For more information on CGIAR, see http://www.cgiar.org

20 For more information on The China Greentech Initiative, see http://www.china-greentech.com

21 *Economics of Climate Change Mitigation: Policies and Options for Global Action Beyond 2012*, 2009, OECD.

22 *Towards a Global Climate Agreement - Synthesis paper*, 2009, Project Catalyst. http://www.project-catalyst.info

23 *World Energy Outlook 2008*, International Energy Agency.

24 For example, the P8 group, which brings together senior leaders from some of the world's largest public pension funds to develop actions relating to global issues and particularly climate change. It is an initiative of the University of Cambridge Programme for Sustainability Leadership and HRH Prince of Wales supported by the Environmental Capital Group, the Nand & Jeet Khemka Foundation and the Zennstrom Foundation. The P8 Group represents over US$ 3 trillion of investment capital.

25 As suggested by the UNEP Finance Initiative. *Financing a Global Deal on Climate Change*, 2009, UNEP FI. http://www.unepfi.org/fileadmin/documents/FinancingGlobalDeal.pdf

26 This model is introduced in a recent paper by the International Investors Group on Climate Change (IIGCC). The IIGCC is a forum for collaboration between pension funds and other institutional investors on issues related to climate change. IIGCC seeks to (i) promote better understanding of the implications of climate change among our members and other institutional investors; and (ii) Encourage companies and markets in which IIGCC members invest to address any material risks and opportunities to their businesses associated with climate change and a shift to a lower carbon economy. For more information see http://www.iigcc.org

27 This model has evolved from discussions involving the Nand & Jeet Khemka Foundation and the

Environmental Capital Group, with other pension funds and sovereign wealth funds, including the P8 initiative.

[28] The GHG Protocol is a decade-long partnership of the World Resources Institute and World Business Council on Sustainable Development, see http://www.ghgprotocol.org

[29] The Climate Disclosure Standards Board is a consortium of the Carbon Disclosure Project, CERES, The Climate Group, The Climate Registry, International Emissions Trading Association, World Economic Forum and World Resources Institute that, in cooperation with major accounting firms and associations as well as industrial and financial services firms is developing a generally accepted framework for climate change-related corporate disclosure. The first exposure draft of this framework was officially launched for comment on 25 May 2009 at the World Business Summit on Climate Change in Copenhagen, Denmark, see http://www.cdsb-global.org

[30] The IASB (International Accounting Standards Board) is an independent standard-setting board. The IASB cooperates with national accounting standard-setters to achieve convergence in accounting standards around the world.

[31] *Towards the inclusion of forest-based mitigation in a global climate agreement,* May 2009, Project Catalyst.

[32] *Ibid*: note that Project Catalyst analysis calculates the forest-based abatement costs in euros, which this report directly quotes. An approximate conversion for the reader could be 1 euro: US$ 1.50.

[33] REDD+, or REDD-Plus, refers to Reduced Emissions from Deforestation and Forest Degradation (REDD) combined with efforts for conservation, sustainable forest management, and enhancement of forest carbon stocks through programmes such as reforestation and afforestation. The proposition here is for this full suite of forest-mitigation up to agro-forestry to be included in a Copenhagen agreement, though the various subsets (REDD, reforestation, afforestation, agro-forestry, *etc.*) can be dealt with through separate mechanisms as deemed appropriate.

[34] *Climate Change: Financing Global Forests*, October 2008, Eliasch Review.

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Disclaimer
The views expressed herein represent a collation of various viewpoints emerging from a series of discussions among the participants in the Task Force on Low-Carbon Prosperity. Although the observations and proposals in this document enjoy broad support, they do not necessarily reflect the views of every individual participant nor do they necessarily reflect the individual institutional viewpoints of any of the companies or institutions that took part, or of the World Economic Forum.

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