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Investment grade policy

**Report produced for Working Group 1 of the
Capital Markets Climate Initiative (CMCI)**

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1. Main messages

This report is the first in three reports for Working Group 1 of the Capital Markets Climate Initiative. Working group 1 has been set up to support the development of a knowledge tool to help governments identify best practice approaches for mobilising private capital. These three reports have been written to help understand the approach that investors take in assessing the invest-ability of low carbon solutions and will feed into the development of a set of principles, and ultimately toolkit, that will allow policy makers to develop policy that will meet the objective of scaling up private sector capital flows into these solutions.

‘Investment grade’ policy is critical for scaling up investments into low carbon solutions. Such policy needs to be embedded in the wider economic policy of a country and not be seen as a stand alone ‘option’. Investors need to be confident that governments are serious – policies need to be ‘*Long, Loud and Legal*’. Significant international public finance is needed to help build strong domestic markets underpinned by long term policy frameworks. Only then will additional capital market risk management mechanisms (public-private partnerships) be useful in driving more capital into these projects.

Most low carbon technology solutions are currently more expensive than business-as-usual and therefore, until the market for these technologies exists at scale reducing their cost, policy interventions are needed to cover the additional cost. Policy should be used to help generate cash flows so we have Net Present Value positive projects that are then financeable and reduce risks associated with climate change related projects to lower the cost of capital. This first of the three reports identifies three areas that need to be tackled to incentivise investments into low carbon solutions in developing/emerging markets.

Domestic policy

- Long, loud & legal
- Eliminate perverse incentives
- Carbon pricing
- Lower cost debt
- Subsidies with sunset clauses
- Regulation and standards
- MRV and governance

Domestic market support

- R&D support
- Technical assistance and capacity building
- Pilot/showcase projects
- Infrastructure support
- Adaptation risk

Capital cost and availability

- Lower cost of lending/debt;
- Lower risk on equity investments;
- Offer capital market de-risk mechanisms;
- Offer project subsidies, grants and technical assistance;
- Provide policy support and technical assistance;
- Support for technology transfer and adaptation projects in developing countries;
- Funding of basic research & development

‘Investment Grade’ Policy

Public policy will play a critical role in mobilising significantly scaled-up investment in ‘low carbon’ assets such as renewable energy and energy efficiency. To be effective such policies need to be ‘investment grade’, in other words financing issues need to move to the heart of policy development.

Central role of risk and return

Risk and return are central to evaluating options for investment. To shift more capital the investment opportunities must be commercially attractive compared to alternative uses of capital, with different capital providers having different appetite for risk and expectation of the return for that risk.

As policy has the ability to create more attractive conditions, it is itself a risk: policy changes can impact and even wipe out returns, for example a change in government or response to economic conditions. This explains the central focus on the stability and durability of any framework. Confidence in underlying market drivers, and the fact that governments are serious about delivering (enforcing) the policy are also key to the perception of durability.

The risk-return equation also means that a target, an incentive, or availability of public finance alone will not be sufficient if there are cumulative high risks associated with other factors in closing a deal. ‘Investment grade’ policy means that all relevant factors within the boundary of a deal or investment need to add up from a finance perspective (obviously within the set of country, currency and broader business environment factors).

Identifying the characteristics of the parts of the finance sector that policy needs to target to achieve objectives will further help resolution in policy design.

Policy & Public Finance: an integrated package

There is a considerable track record of using public finance to leverage greater private capital. In general, private financiers are looking for well-targeted, well-designed and scaled public finance that fits actual gaps on the ground, including underserved areas like smaller deal size (SME level).

Integration is needed between policy development and availability of targeted public finance tools: a well designed policy environment can be one of the most effective ways of reducing risk for investors; or put another way it is likely to be more effective tackling policy-related risk (or gaps in policy) through policy development, rather than by buying down those risks through public finance.

Clarifying how systems are likely to change, at what scale and over what timeframe, will help financiers anticipate market opportunities.

(Text provided by Kirsty Hamilton, Chatham House)

2. Background

The Capital Markets Climate Initiative (CMCI) is a UK-led initiative spearheaded by Minister Greg Barker in the Department for Energy and Climate Change (DECC). CMCI seeks to support the scale up of private finance flows to developing countries through the creation of an open-source platform that shares the expertise and experience of financial sector experts with governments in identifying why, where and how public action can leverage climate-friendly private finance and investment.

Working Group 1 (WG1) is one of two work streams identified under CMCI set up to develop a set of principles and toolkit to enable the development of 'investment grade' policy and appropriate public finance mechanisms. Working Group 2 (WG2) will identify, develop and share lessons from in-country experiences.

This first phase of WG1 focuses on analysis to identify and draw together lessons from a wide-range of cross-country experiences identified by CMCI members, the emerging experience and lessons from WG2, and existing work on the potential supply of climate-friendly private investment and public finance instruments to leverage this. This phase aims to help understand the approach that investors take in assessing the invest-ability of low carbon solutions and will feed into the development of a set of principles, and ultimately toolkit, that will allow policy makers to develop policy that will meet the objective of scaling up private sector capital flows into these solutions.

Therefore, while a number of policies and frameworks are listed here this is not intended to be a prescriptive list of 'must haves'. Rather this will feed into the subsequent phase of CMCI to help understand how to assess policy development through the lens of the capital markets.

Three reports have been prepared containing conclusions which will be used to develop subsequent phases.

- Identification of investment grade policy
- Current investment practice
- Best use of public sector finance

The key challenge CMCI was set up to explore is the ability to mobilise \$100 billion a year from developed to developing/emerging countries by 2020 as agreed under the UNFCCC process. However, the three CMCI reports explore the best use of public policy to make investments into climate solutions more attractive and therefore also address the larger estimated \$1 trillion per year in global incremental investment by 2030 that is required to meet the climate change challenge. CMCI recommendations should therefore be seen in a wider context than the UNFCCC agreements.

CMCI brings together private sector representatives to understand their approach to investing. The intention of these reports, and CMCI, is to identify the priorities for best use of international public finance to support the ability of developing countries to attract private sector capital. Therefore, CMCI does not intend to come up with the ideal solution to all of the barriers in this space but help identify a way of starting the process of scaling capital flows in the short term.

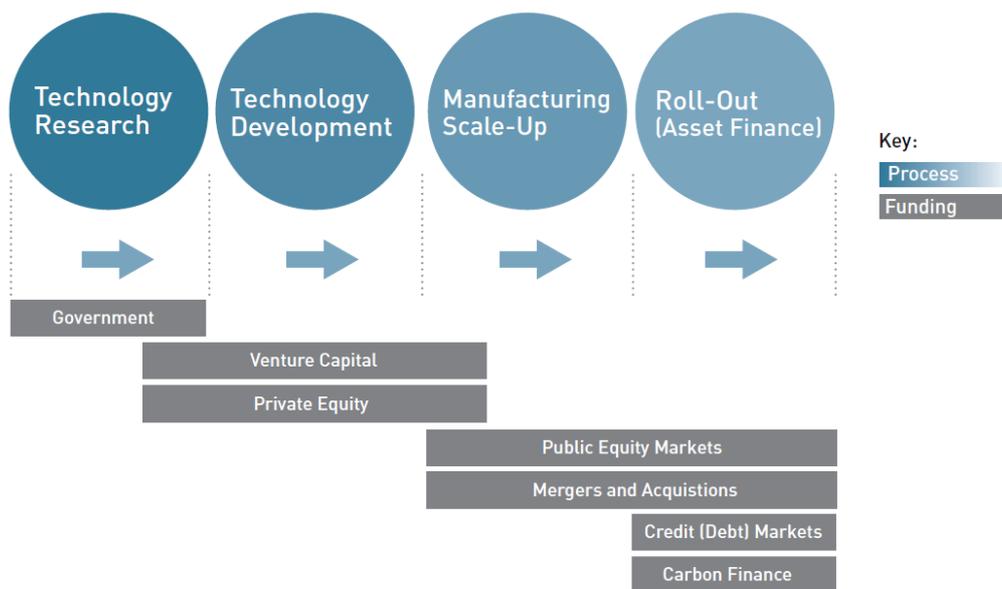
It should also be noted that an increased focus on ‘investment grade’ policy within the developed countries is needed for them to meet their own international emission reduction targets under processes such as the UNFCCC.

This document is the first of the three reports. This report includes a mapping and analysis of existing private sector principles and a review of public calls for policy change from national (pro-active) business groups in developing and developed regions. This aims to identify key criteria for ‘investment grade’ policy as defined by the finance sector.

There are three parts of the financial system that form the investment supply chain:

- Capital providers (e.g. institutional investors including pension funds, mutual funds, sovereign wealth funds, insurance funds and hedge funds)
- Capital facilitators (e.g. banks, asset managers, brokers and advisors)
- Project developers (e.g. companies)

Therefore, policy calls from each of these groups have been examined for this report and when designing policy it is important to know which of these groups are being targeted.



Sustainable Energy financing continuum (UNEP, SEFI & BNEF, 2009)

‘Low carbon’ potentially covers a very broad field of investment options, depending on the definition.

Different risk characteristics of renewable energy sub-sectors and energy efficiency, or indeed other options, as well as the infrastructure or system needs of the range of technologies, mean policy needs to be precise and well designed. For this reason, a carbon price alone is unlikely to overcome specific market risks associated with differing technologies, nor will it drive investment to underlying infrastructure requirements in the near term.

One-size does not fit all in 'low carbon' and at national level policy makers will need to be clear about objectives, and expectations, of what parts of the finance community need to be mobilised, over what timeframe.

'Climate finance', a useful term for policymakers, will need clarification. For example, does it relate to how policies to deliver emissions reductions intersect with policy to drive investment into underlying assets? Grid and distribution infrastructure do not in themselves deliver near-term emissions cuts, but may be essential to an energy system equipped to deliver higher penetration of renewables, and greater flexibility on the demand side.

This also highlights the importance of early attention to the sequencing, planning and integration of underlying infrastructure planning and financing, and may benefit from a cross-border or regional approach (e.g. power sector) as financiers look for growth potential.

The report is drawn from a number of sources (see references) and as such it is not possible to reference every source of information in the text. What is included here is those areas that are common across each of the reports and publications referenced.

This report should be read alongside report 2 (current investment practice) which brings together more evidence around existing instruments and policy interventions. Report 3 then assesses the best use of public sector finance to underpin and encourage the scaling of capital investments into climate solutions. Reports 2 and 3 make recommendations on the best way forward to help identify key areas for discussion with CMCI members and to feed into the development of a set of principles and toolkit.

2.1 Capital availability

One issue that has been highlighted is the possible restriction on capital available for these types of investment vehicles due to changing legislation aimed at tackling risks in the finance sector. There is a perception in climate financing that there is plenty of capital available for investment in low carbon projects: *'build it and they will come'* however this needs to be tested in the context of new legislation.

Following the recent turmoil in global financial markets caused by bad risk management in the finance sector, government's have naturally reacted to reduce the risks of such events happening again in the future. However, one consequence of new legislation could be a reduced availability of capital for long term climate change investments. For example, the requirement that banks have increased Tier 1 capital under Basel III may limit balance sheet lending (for example, senior debt) and restrictions on equity investments potentially limits the pool of available capital for private equity vehicles.

Within Europe Solvency II will have a similar impact on insurance sector investments. Also The Pension Protection Act of 2006 has put increasing pressure on defined benefit pension funds, linked with mark-to-market accounting, to focus more on shorter-term assets and matching their liabilities with government bonds. The US Dodd-Frank Wall Street Reform and Consumer Protection Act will have similar impacts in the US investment market.

There also remain a number of quantitative and qualitative investment restrictions on pension funds that could limit the amount of available capital (for example, restrictions on geographies or asset classes in which they can invest). Some investors also view carbon as a commodity and are restricted by legislation from investing in it.

As a next step, CMCI will seek appropriate views from the finance sector on the likely impact of such legislation to the availability of capital.

However, capital availability in some emerging markets is significant (for example, sovereign wealth funds in China and Korea). While mobilising this source of capital for low carbon solutions would meet the overall objective of reducing the risks from climate change, and there are some positive examples of South-South partnerships, it would not meet the specific objective of the UNFCCC to mobilise \$100 billion a year from developed to developing countries.

3. Principles and voluntary actions

There are a number of principles, voluntary actions and stakeholder groups that influence the approach of policy development and private sector responses to climate change. This section summarise some of these.

3.1 Stakeholder groups and projects on climate finance

Some of the key projects set up to explore the issues of climate finance are:

- **Overseas Development Institute, European Climate Foundation & Climate Policy Initiative**
The State of Global Climate Finance report will provide a 'state of the art' assessment of climate finance at the global and selected national levels.
- **World Economic Forum, International Finance Corporation & United Nations Foundation**
The Critical Mass Initiative sought to catalyse public-private collaborations to help pioneer a new wave of bankable and scalable transactions in low-carbon infrastructure, in developing and emerging economies.
- **UNEP SEFI**
SEFI is the UNEP Sustainable Energy Finance Initiative - a platform providing tools, support, and a global network.
- **World Resources Institute**
Leveraging private climate finance project to explore various case studies of public-private partnerships.
- **Joint EFC-EPC Working Group on the International Financial Aspects of Climate Change (EU group)**
The purpose of the joint European Economic and Financial Committee-Economic Policy Committee (EFC-EPC) Working Group is to bring together expertise on international climate finance and consider practical solutions to outstanding issues in this area in preparation for the COP 17 in Durban in December 2011.
- **Green Climate Fund Transitional Committee**
The Transitional Committee comprises 40 members, with 15 members from developed country Parties and 25 members from developing country Parties, with members having the necessary experience and skills, notably in the area of finance and climate change.
- **OECD**
Various work streams within the OECD feed into this space including Mobilising investment for low carbon/climate resilient growth: policy frameworks and instruments.
- **Renewable Energy Finance Project (Chatham House)**
This project works directly with leading mainstream renewable energy financiers on their perspective of the policy conditions required for accelerating investment into renewable energy.

In addition relevant reports have been published by the World Bank, IFC, ADB, KfW Development Bank, OECD, GEF, Climate Policy Initiative, UNEP FI, Global Climate Network, Center for American Progress, Overseas Development Institute, LSE Grantham Research Institute, World Resources Institute, Chatham House, Bloomberg New Energy Finance, Institutional Investors Group on Climate Change (IIGCC), Investor Network on Climate Risk (INCR), Mercer, KPMG, PwC, McKinsey, E3G, WWF, Brookings Institute, Pew Centre, Carbon

War Room, Climate Change Capital and the UN Foundation as well as a number of leading banks, financial organisations and asset managers.

3.2 Public sector principles for climate finance

Further work is being undertaken by the OECD working group (see above) on the effectiveness of public sector principles. However, a summary of the OECD *Principles for Private Sector Investment in Infrastructure* (OECD 2007) is included for reference. The *Principles* focus on five main areas of policy making and include the following recommendations, which are also relevant for green projects:

- Ensure the financial sustainability of projects through an assessment of long-term revenue flows, affordability for government and the costs and benefits of alternative modes of financing. Incentives and guarantees may be necessary to make returns on green projects comparable to 'brown';
- Provide a sound institutional and regulatory environment for infrastructure investment, including facilitating access to capital markets through the phasing out of unnecessary obstacles to capital movements and restrictions on access to local markets and removing regulatory barriers. For green investments, providing a stable policy environment around carbon pricing is required;
- Ensure public and institutional support for the project and choice of financing;
- Make the co-operation between the public and private sectors work by promoting transparency and appropriate contractual arrangements. Including environment performance criteria into contractual specifications / calls for tender could specifically assist the development of green growth related projects;
- Promote private partners' responsible business conduct.'

3.3 Private sector principles

The financial sector as a whole has several initiatives that aim to help organisations incorporate sustainability and environmental challenges into their business decisions. The following initiatives cover climate finance in some way:

- Carbon Principles
- Climate Principles (Climate Group)
- The Equator Principles
- UN Global Compact
- London Accord
- UN Principles for Responsible Investment
- ClimateWise (insurance sector)

A number of investors support the following initiatives:

- Carbon Disclosure Project
- Global Reporting Initiative
- OECD Guidelines for Multinational Enterprises

In addition to voluntary codes and/or principles some investors are members of, or support, the following finance groups:

- Investors Network on Climate Risk (INCR) (run by Ceres)
- UNEP Finance Initiative

- Institutional Investors Group on Climate Change (IIGCC)
- Investor Group on Climate Change (IGCC)

A number of the investors are also represented on various sustainability or climate change business groups such as the World Business Council for Sustainable Development (WBCSD) and those listed below.

There are also a number of business lobby groups on climate change around the world including:

- EPC (Business for the Climate), Brazil
- Lideres Empresariales para el Cambio Climatico, Chile
- The Prince of Wales's EU Corporate Leaders Group on Climate Change, EU
- German CEOs for Climate Protection (2 degrees), Germany
- Climate Change Business Forum, Hong Kong
- Irish Corporate Leaders on Climate Change, Ireland
- Japan Climate Leaders' Partnership, Japan
- Climate Change Centre, Korea
- Business Leaders Group on Climate Change, Mexico
- Corporate Leaders Group on Climate Change, South Africa
- SE Asian Corporate Climate Initiative, South East Asia (based in Singapore)
- The Climate Platform, Turkey
- The Prince of Wales's UK Corporate Leaders Group on Climate Change, UK
- Business for Innovative Climate and Energy Policy (BICEP), USA
- United State Climate Action Partnership (US CAP), USA

The Millennium Development Goals (MDGs) are also often referred to in investment reports however investors are not 'signed' up to the MDGs. One of the defining aspects of the MDGs is that they outline targets that are time bound (2000-2015) whereas the majority of the principles, actions and groups above are process based. The MDGs therefore set a level of ambition for change (it remains to be seen whether these targets will be met).

Each set of principles or group usually identifies climate risk (or environmental risk) as a strategic issue that signatory organisations need to set up processes to handle. In particular the main themes they encourage signatories to implement include:

1. Have an internal policy for climate risk management
2. Have the capacity/capability to identify the risks in, and impacts of, their business operations
3. Have a management process and clear line of responsibility (usually to board level)
4. Monitor and review.

Each initiative will articulate and create a structure for implementing the above in different ways. It should be noted that in none of these initiatives have the organisations that have signed committed to making more climate-related finance available. However, they are putting in place systems and processes that will allow them to manage these investments once policy allows them to do so. Each of these groups, and in particular the business and investment membership groups, are very active in articulating the need for policy change.

The following sections summarise some of the calls from these groups.

4. Risks and Risk Regulation

Low carbon projects face a combination of risks from policy risks and project (economic) risks. The majority of project risks will be tackled through scaling the market for these investments while policy risks need to be more actively managed. This section explores some of the key risks that need to be managed in low carbon projects.

Low carbon projects usually involve high capital costs and long term financing. However, managing the financial risks is secondary to a strong domestic policy environment and having the necessary infrastructure in deploying low carbon solutions. Specific climate change objectives outline the 'direction of travel' for policies and should create a driver in specific policy areas.

Some of these risks are specific to low carbon investments while others relate more generally to the investment 'environment'. However, both of these need to be managed together and therefore climate change policies and finance should be aligned with general international development support and activity to ensure maximum synergy. One country may have a good investment environment (has a strong track record in attracting international capital) but has not developed good climate specific policy and therefore does not attract climate specific investment. Another country may have good climate policies but a poor investment environment (does not usually attract any forms of international capital) and will therefore also struggle to attract climate specific investment. Both of these issues need to be explored within each country context and Working Group 2 of CMCI will explore methods for dealing with this in practice.

4.1 Domestic policy risk

The first risk analysis that will be undertaken on a low carbon project is the risk associated with domestic policy in the country where the project is to be implemented. The issues that will contribute to the risk analysis include:

- Policy certainty (longevity) including overall governance issues in-country
- Policy complexity
- Transaction costs/bureaucratic hurdles (complying with policy/licensing/reporting requirements)
- Land allocation, access and security of ownership
- Policing and enforcement of obligations and incentives

4.2 Domestic market risk

Secondly investors will explore the domestic market ability to support the particular project as it is developed. The issues include:

- Human and operational risk (lack of trained people)
- Limitations of evacuation infrastructure or support infrastructure
- Capacity of domestic project developers
- Domestic equity funding structures
- Long term viability of state utilities
- Operational track record of particular technology/project in country
- Source and accessibility of spares or feedstock
- Competitor risks

In addition (although not widely included in risk analysis at present) the physical risk from climate change itself will play an important role. Changes to expected rain fall and water availability, as well as rising sea levels, will potentially have a significant impact on investments in the energy space. For example, Ceres (2010) shows that several US utilities have a large exposure to potential water shortages which could impact on their valuations and their ability to pay long term bonds.

4.3 Financial risk

There are several challenges when investing in low carbon solutions in emerging and developing countries. The first two relate to general risks involved in investing in other countries:

- Country risk: possibility of defaults or other factors leading to non-return of invested capital including economic risks such as inflation.
- Currency risk: Exchange rate fluctuations making returns volatile.

Other risks, above and beyond the domestic policy and market risks, are more directly related to low carbon investments:

- Deal flow problems: insufficient number of commercially attractive deals making diversification in investment portfolios difficult.
- Complexity risks: difficulty evaluating multiple, overlapping risks making it easier to invest in business-as-usual investments.

5. Public policy for risk management

Delivering a strong, simple and clear economy-wide strategy for low carbon growth is the first step in creating an enabling environment which will attract international capital investment. There is no one solution that can work in all countries as national circumstances (degree of market liberalisation, renewable energy potential, land ownership, energy infrastructure) will determine the best policy framework to deliver low carbon investments. This section is based on analysis of the areas in which the policy lobby groups of businesses and investors listed in section 4 broadly agree on.

Investors would welcome an international system that could register, review and support national climate change action plans (mitigation and adaptation). This would give investors greater confidence over the long-term nature of such policies and start to provide a common platform of understanding. In addition one clear message is that retrospectively changing policy undermines investor confidence in any market and therefore ensuring that introduced policies are as effective and efficient as possible so that unplanned retrospective changes do not occur is vital.

As noted previously risks associated with investing in low carbon solutions cannot be tackled in isolation from general investment and country risk and therefore integrated development policy and climate change action is required to ensure maximum synergy and efficiency.

5.1 Domestic policy

To make low carbon related investments attractive, governments need to make high carbon investments less attractive through mechanisms such as eliminating fossil fuel subsidies and introducing carbon pricing.

5.1.1 Long, Loud and Legal and TLC

To underpin any national policy framework clear emission targets are needed alongside a strong adaptation strategy. Most policy documents from the investment community will start with a similar call to governments: the need for long term and predictable policy. Whether this is referred to as long, loud and legal or transparency, longevity, certainty and consistency (TLC) the key message is the same.

The key criteria are:

- Investment timescales and policy timescale must align and need to be predictable (long) – typically 10-15 year timescales
- Policy must make deals more commercially attractive than business-as-usual investments (loud/consistency)
- A clear legally binding framework set over a long period that can build confidence in the underlying policies (legal/certainty/transparency)

Predictability of policy should not be taken as writing a blank check for investors. In fact, a 'sunset' clause for policies which is predictable is as important as any initial subsidy put in place. This gives investors confidence that the policy will not be retrospectively changed and therefore investments can be made into high capital cost projects.

While policy makers often dismiss this call as non-specific the important thing to note is that investors currently do not believe policy is delivering this certainty. In fact a number of surveys of business leaders and investors have shown very low levels of confidence in the

policy making process even when policy has been implemented. For example, a recent IIGCC/Norton Rose survey showed less than 10% said that the EU Emissions Trading Scheme (EU ETS) provided a strong enough price incentive to switch to less carbon-intensive investments and no one felt the EU ETS had provided the necessary long term certainty.

Therefore, a clearer and more consistent policy signal is required. This includes addressing all aspects of a policy environment (not just climate change specific policies). For example, without an energy system wide view, regulations in planning, energy and consumer markets may not stand the test of a full risk assessment for investment. An integrated approach to energy, transport and land-use policy is needed.

Delivering a low carbon economy needs sub-sector strategies and improved integration of the different levels of government required to deliver the objectives (for example, closer links between planning regulations and infrastructure banks. In addition governments need to show their long term commitment by providing support for new industries, technologies, infrastructure and practices on the basis of a comprehensive and long term policy framework including emission reduction targets. However, this level of policy integration and analysis, while difficult, should not be allowed to delay implementation and action.

Of course even with long, loud and legal policy frameworks in place if there is perceived to be little or no appetite to implement the regulations required to deliver on commitments in these frameworks then investor confidence will not be increased. For example, the UK Climate Change Bill has not in itself resulted in a large scaling up of capital investments into low carbon solutions but requires further policies and incentives to be implemented.

5.1.2 Eliminate perverse incentives

The first policy tool which should be addressed is a plan for the elimination of perverse incentives. Taking into consideration the necessary austerity measures it is difficult to increase the subsidies for renewable energy worldwide (currently \$57 billion) without reducing the subsidies on fossil fuels (currently \$312 billion). Eliminating perverse incentives is required to create a level playing field for low carbon investments.

USA federal Subsidies and Support to Electric Production by Selected Primary Energy Sources			
Primary Energy Source	FY 2007 Net Generation (billion kilowatthours)	Allocation to Electric Generation (million FY 2007 dollars)	Subsidies and Support per Unit of Production (dollars/megawatthour)
Natural Gas and Petroleum Liquids	919	227	0.25
Coal	1,946	854	0.44
Hydroelectric	258	174	0.67
Biomass	40	36	0.89
Geothermal	15	14	0.92
Nuclear	794	1,267	1.59
Wind	31	724	23.37
Solar	1	174	24.34
Refined Coal	72	2,156	29.81
Energy Information Administration, <i>Federal Financial Interventions and Subsidies in Energy Markets 2007</i> , SR/CNEAF/2008-1 (Washington, DC, 2008).			

5.1.3 Carbon pricing

A carbon price delivers a clear accounting tool. However, unless it is set at a high level (for example, \$100 per tonne) it is not transformational and will not overcome market inertia away from high carbon investments (unless the price is significantly higher than currently anticipated).

A carbon price can be delivered through many different policy routes such as a cap-and-trade system or carbon tax. Each different policy framework will work better in different conditions and may be more acceptable to certain industries/stakeholders. A cap-and-trade system is seen as an efficient market mechanism for uncovering the optimal carbon price for a set emissions cap although the ability for a market to respond to very steep emissions caps has not yet been tested. A carbon tax is much simpler to implement but is less flexible. Therefore, a tax is likely to be better for driving carbon accounting across organisations that are not carbon intensive.

It should be noted that where a carbon price is applied can have a large impact on technology or behaviour change. For example, a price on fuel at the forecourt may reduce car usage, a price on carbon content in fuel may drive a move to lower carbon sources/mixes, while a price on the efficiency of cars (possibly through a road tax) may drive a change in vehicle types.

A carbon price can also be revenue generating which, when linked to low other financial incentives (see subsequent sections), can help drive the market towards low carbon solutions.

5.1.4 Lower cost debt

In the first stages of developing a low carbon project access to low cost debt is vital. This is true for large scale energy projects, energy efficiency service companies, transport projects and land-use projects. The creation of loan guarantees, low interest rate loans, grants or even creating new national entities that can specifically focus on deploying lower cost debt such as national infrastructure banks should be a high priority.

However, over the long term the cost of debt from the general 'market' will mainly be driven by the financial attractiveness of the underlying projects and general macro-economic trends (which will impact the cost of debt for high carbon investments as well).

5.1.5 Subsidies with sunset clauses

The use of subsidies to encourage the deployment of new technologies until they become cost-competitive is necessary. Investor and business groups, however, differ in their choice of subsidy.

As far as possible any subsidy should be technology agnostic and should focus on the carbon content (it is better to regulate for a generic carbon content mix for fuel than to specifically focus on biofuels for example). Exceptions to this come when technologies are immature and require higher subsidies initially to make them cost competitive. For example, earlier stage technologies such as solar will need higher levels of support than widely adopted technologies such as wind.

A number of different subsidy regimes have been implemented (see report 1 for further details):

- Feed-in-Tariff (FiT)
- Power Purchase Agreements
- Trade-able Renewable Certificates
- Auctions
- Tax credit
- Low carbon vehicle subsidies
- Differential tax regimes on carbon content (on buildings, products, cars etc)
- Accelerated depreciation of assets

There is currently not enough evidence to show whether any of the above subsidy regimes offers a more effective (scale of deployment resulting from the policy) and efficient use of public money. Current implementations are based on very small deployment levels compared to the scale of deployment required. Therefore, different businesses, business groups and investor groups support different forms of subsidies although Feed-in-Tariffs are the most common.

Ensuring appropriate 'sunset' clauses (lowering the subsidy as technologies become more cost competitive through increased deployment) and demonstrating the predictability of certain subsidies would increase investor confidence. This would increase the long term certainty in such subsidies which is key to attracting finance as well as reduce moral hazard and limit adverse selection. This also encourages innovation and moves technologies more quickly towards cost competitiveness. Therefore, a transparent review process for any subsidy is required.

It is likely that a mix of subsidies will be needed in different countries depending on the availability of grid infrastructure, technology maturity and market effectiveness. Building the capacity to design and deploy these incentives should be a high priority.

Underpinning these subsidies could be an effective and efficient way of deploying international finance and there are a number of ways to do this.

5.1.6 Regulation and standards

While not directly effecting short term financial returns regulations and standards within a market can vastly reduce the risks of the long term viability of projects. Improving building codes, equipment and appliance standards (including supporting 'smart' equipment measures), transportation policies (such as low carbon fuel standards), carbon sink legislation (to support land-use changes) and measures to influence consumer behaviour (including labelling and efficiency standards) are all key to develop a long term and stable market for low carbon products, enabling a larger role out of renewable energy infrastructure and supporting a transition to a lower carbon transport system. Such policies ultimately also make high carbon investments less attractive.

Particular policies can be used to create an ongoing demand for innovation within the low carbon sector including the use of Japanese 'top-runner' style standards where the best in class low carbon technology becomes the minimum standard in future markets. With a changing market it may also be necessary to examine changing demands on market regulators and potentially merge/reform some of these to address new challenges.

5.1.7 MRV and governance

A key aspect to lowering the risk of any investment is the ability to demonstrate that returns will find their way back to the project or investor. The economic strength of a particular country will be the main driver of any risk assessment.

The overall governance environment of a country is the first factor that most investors will explore. If there is little evidence of a strong rule of law then any investment will be difficult. If there is evidence of countries changing the terms of deals or not enforcing contractual agreements (or favouring domestic partners over international capital providers) then investment will be difficult. The ability to assign some of the contractual arrangements (such as power purchase agreements) directly to lenders or investors may go some way to manage these risks in the short term.

However, strong and dedicated institutions with clear responsibilities for implementing policies are a better way to lower the perception of risk. Measurement, reporting and verification (MRV) systems at the national level for carbon savings or renewable obligations, where revenue is dependent on these factors, needs to be in place before projects will get financed. Over the medium term a move to mandatory disclosure standards for companies and projects will assist in simplifying the risk assessment process.

Therefore, synergies with international development activities and policies should be sought wherever possible.

Other factors within the governance of a country that need to be well understood before investments take place include land rights and tenure, bureaucracy associated with devolved power (city, region, state and national), grid access rights, import tariffs and any restrictions on the repatriation of investment returns.

With appropriate MRV mechanisms in place a subsequent mandatory requirement for risk disclosure to investors from companies should be implemented.

5.2 Domestic market support

While addressing policy risk will attract capital investments into low carbon solutions there also needs to be a focus on the enabling environment in which the investment is to be made. Non-economic barriers have a significant impact on the risk analysis of projects irrespective of policy frameworks that are in place.

5.2.1 R&D support

Government support for research and development in the low carbon space is a strong indicator of future commitment to growing this sector. Support should be in place from the discover and develop phase through to deployment (through the '*valley of death*'). In particular energy storage technologies would benefit from increased research activity however research investment should be related to national conditions and expertise.

There are a number of ways governments can encourage the R&D sector from directly investing through research grants to signalling growing future markets for new products by the use of government procurement and 'Forward Procurement Commitments'. For example, government procurement for public transport can support innovation in low carbon vehicle technology. Forward procurement commitments are government tenders for new low carbon goods and services that do not currently exist but require further research and development to meet the required standards by the time the tender is delivered.

5.2.2 Technical assistance and capacity building

The ability for governments and domestic companies to develop low carbon products is often not strong. Providing technical assistance for policy development, financial market product development and implementation and to help develop state-owned power utilities is very important.

5.2.3 Pilot/showcase projects

Investing in pilots and showcase projects is often a good way to demonstrate the ability of a country to develop low carbon projects and to build confidence in the market. A reform of the Clean Development Mechanism to allow more pilot projects to be implemented at scale would be very useful.

5.2.4 Infrastructure support

The development of local and diversified infrastructure (whether electricity grids, low carbon urban transport or agricultural supply chains) is vital in supporting the overall enabling environment for such low carbon projects. Without the ability to connect low carbon projects to the ultimate source of financial return (the consumer) no long term financing is possible. Domestic policy can be used to help drive private capital into infrastructure investment using the domestic policy mechanisms outlined above.

5.2.5 Adaptation risk

The insurance sector are leading research efforts into adaptation and are keen to encourage governments to support proposals that catalyse adaptation efforts through risk management, loss prevention and risk transfer, particularly in those countries most vulnerable to the impacts of climate change. These include appointing a national risk officer with the mandate to develop a holistic risk management culture, facilitating community, regional and state level loss reduction activities, climate-proofing existing infrastructure investments, putting in place appropriate zoning and building codes and enforcing these, providing a suitable enabling environment for risk management, including insurance.

5.3 Capital cost and availability

The financial mechanisms for risk management will be discussed in more detail elsewhere (CMCI report 3 highlights some of the international financial mechanisms). However, it is important to re-emphasise that international financial mechanisms are not a substitute for national policy and regulation – without clear, consistent and long term policy frameworks no amount of financial mechanisms will reduce the risk of investments to a investable levels. In fact complex financial mechanisms aimed at compensating market drivers from domestic policy will only put off investors further and are costly to implement.

International financial support should therefore be firstly targeted at underpinning and strengthening the ability of national governments to set up, implement and enforce national policy frameworks (for example, by providing capital to support or guarantee Feed-in-Tariff prices or to underwrite a minimum price of carbon credits).

To summarise the critical financial instruments that are required will address the following:

- Lower cost lending/debt;
- Lower risk on equity investments (public sector first loss etc);
- Capital market de-risk mechanisms (guarantees, insurance, MIGA etc)

- Project subsidies, grants and technical assistance (e.g. direct assistance for FiTs or future carbon price guarantees or paying for due diligence or deal aggregation)
- Policy support and technical assistance (assistance in creating FiTs, tax credits and capacity building across the board including domestic financial organisations and project developers);
- Support for adaptation projects in developing countries;
- Funding of basic research & development in key technologies to bring them towards commercialisation.

Any instruments should complement and not substitute for private investment and support needs to be available to funds and not just individual projects.

6. Measuring government policy effectiveness

There are a number of criteria used to measure the effectiveness and efficiency of government policy (for example, Deutsche Bank, S&P, IEA and others all have recent reports assessing the impacts of various policy interventions). Reports 2 and 3 under CMCI will explore some of these issues in more detail.

However, when developing the toolkit (phase 2 for CMCI) it will be important to provide a clear and consistent framework to help governments understand how the private sector would view and analyse the likely success of investments in particular countries and technologies. A country 'analysis' of policy delivery is complex and the overall perception of a country's commitment to this agenda is quite often key. For example, anecdotal feedback from investors indicate that the back-and-forth debates in Australian politics have weighted their investment appetite in low carbon technologies towards emerging markets where policies are seen to be more stable (such as in Brazil).

The complexity of this issue is highlighted by looking at the UK as an example. The UK Government has put in place a clear long term policy framework – namely the Climate Change Bill. This is a significant development which puts in place bold and ambitious targets. Indeed Deutsche Bank place the UK 3rd 'best-in-class' for climate policy (behind China and Germany) based on the presence of a binding emissions target, renewable electricity standard, long term efficiency plan, feed-in-tariff, the proposed Green Investment Bank, tax incentives and a long-term grid improvement plan. Total clean energy investment in the UK during 2009 was US\$11.2 billion (£7.3 billion) (comprising both institutional and non-institutional investors), the third-largest amount of the G-20 countries. UK clean energy investment between 2005-2009 has focused chiefly on wind (57%); other renewables (20%); biofuels (11%); and efficiency and low carbon technologies / services (10%).

The key incentives for clean energy investment in the UK are:

- Renewable energies being exempt from a climate change levy;
- A renewable energy standard, with permit trading; and
- Mandatory procurement of 3.5% of all fuel consumption from biofuels through Renewable Transport Fuel Obligation.

(The Pew Charitable Trusts, 2010)

However, further regulatory innovation is required to deliver against the bold long term targets and while there is some development here the investor community has not seen enough to build its confidence in the long term stability of their investments over the full range of climate change solutions. For example, a recent survey (Centre for Low Carbon Futures, 2011) showed that only 14% of UK businesses that responded (from a self selecting group of the most progressive businesses) are highly or very highly confident in the UK Government's 2050 targets.

Therefore, understanding the approach to analysing the full breadth of climate related policy is important if the significant targets that have been set are to be reached. A narrow focus on one or two sectors (such as renewable energy), while welcome, will not deliver against the full ambition.

7. Conclusions

Most solutions to climate change require capital investment at scale. Currently the majority of these investments do not compete well with high-carbon investments (or the 'do nothing' option in the case of energy efficiency). This is mainly due to incorrect policy incentives, un-priced externalities and non-economic barriers driving investment decisions in the markets away from low carbon solutions.

Before addressing which particular capital market intervention should be deployed in a particular country addressing the policy framework is vital. With a clear and long term policy framework in place then financial mechanisms can be deployed efficiently, including removing subsidies for high carbon alternatives and incentivising new technologies until they become cost competitive. Three areas need to be tackled to incentivise investments into low carbon solutions in developing/emerging markets including domestic policy risk, domestic market risk and capital market (finance) risk. The following summarises the key interventions to be made in each of these areas.

Domestic policy

- Long, loud & legal
- Eliminate perverse incentives
- Carbon pricing
- Lower cost debt
- Subsidies with sunset clauses
- Regulation and standards
- MRV and governance

Domestic market support

- R&D support
- Technical assistance and capacity building
- Pilot/showcase projects
- Infrastructure support
- Adaptation risk

Capital cost and availability

- Lower cost of lending/debt;
- Lower risk on equity investments;
- Offer capital market de-risk mechanisms;
- Offer project subsidies, grants and technical assistance;
- Provide policy support and technical assistance;
- Support for technology transfer and adaptation projects in developing countries;
- Funding of basic research & development

With a limited history of implementation the effectiveness and efficiency of policies to lever private sector investment is still relatively untested, or at least it is difficult to disentangle multiple factors that may have influenced investor decisions. There are some examples of good implementations (as well as bad) of each type of policy which could be built on (see report 2). With the right policy environment in place there will be less need for direct capital market finance risk management mechanisms and therefore high leverage ratios will be possible with the limited public funding available.

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