



STRUCTURAL APPROACHES TO EMISSIONS MITIGATION AND THE ROLE OF BUSINESS

June 2011 Discussion Document

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As the international climate change negotiation process moves forward, a framework for action involving all nations is emerging. It is far from complete and much work remains, but progress is being made.

This paper, developed by Shell, sets out an approach for the role of the private sector in this developing framework. The paper highlights the experience gained in Europe, where the policy framework for tackling climate change is arguably the most advanced. It also spells out the need for a greater role for the private sector, working in partnership with government with details for how key bodies might function in the coming years.

The role of the private sector should not be underestimated. Large scale change is required to make substantial cuts in global emissions and the majority of the investment needed will be delivered by the private sector. We believe that the early involvement of business in developing climate change mitigation measures can accelerate the pace of change and deliver the technologies needed.

This paper proposes that business take a seat at the table as Nationally Appropriate Mitigation Action (NAMA) plans are developed globally and that a number of technology platforms, akin to the Zero Emissions Platform (ZEP) in the European Union (EU), are established early in the process. These platforms will be designed to advise on local and regional infrastructure issues related to the NAMA (e.g. grids, CO₂ pipelines) and coordinate the use of the UNFCCC market, finance and technology mechanisms in the rapid implementation of the required projects. A more integrated solution bringing the public and private sector to cooperate on tackling climate change will yield faster and more effective results.

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Group CO₂

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A Framework for Action

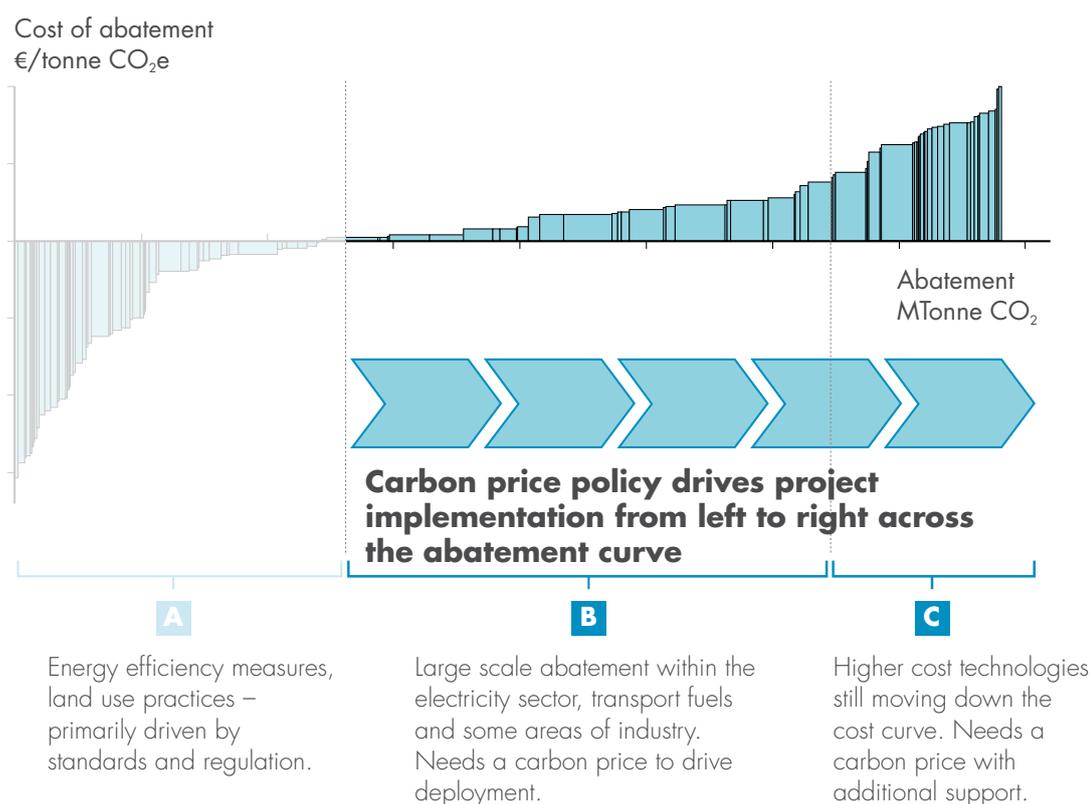
Reducing global emissions requires a broad range of actions, from improving the energy efficiency of buildings, to wide scale implementation of Carbon Capture and Storage (CCS) in the power generation sector. In all economies the task at hand can be represented by an abatement curve, which shows the cost of a given reduction opportunity (in terms of €/tonne CO₂e) against its size and therefore relative position in terms of priority of action. The most cost effective policy framework will result in action on the left hand side of the abatement curve first, progressively moving to the right until all opportunities for reduction are exhausted.

The reality in most cases will be to operate at various points of the abatement curve simultaneously, rather than simply addressing the problem in series. As such, the abatement curve can be looked at in three parts as illustrated in Figure 1:

- A.** Measures within the economy that should be happening anyway simply based on their payback in terms of energy use. Various market failures may be contributing to the lack of action in this area. The solution may be to impose various national standards, such as building codes or vehicle efficiency requirements to ensure take up.
- B.** Large scale abatement opportunities in sectors such as power generation and transport. These require the application of a carbon price to drive implementation.
- C.** The deployment of a set of existing, but currently higher cost technologies will make up the principle abatement projects in years to come. These technologies are in need of rapid maturation in the medium term through technology “push” policies and would include for example CCS, which the IEA estimates could contribute up to one fifth of the CO₂ emissions mitigation effort needed by 2050.

The above framework for action is applicable in all countries, both developed and developing, although implementation will differ.

Figure 1 A policy framework to consider



The structure of the post-Kyoto international agreement for emissions mitigation is looking increasingly like a “pledge-and-review” approach. This will see each developed country (or region in the case of the EU) offer a specific reduction target and developing countries, which may also indicate an emissions trajectory, offering a series of national action plans (NAMA or Nationally Appropriate Mitigation Action) related to energy and emissions management.

The agreement will also comprise a number of fit-for-purpose building blocks including a climate fund, a technology mechanism, market based mechanisms and the essential support of measurement, reporting and verification (MRV). These are particularly targeted at developing countries, to assist in the finance of projects and support the underlying technologies involved.

Although much remains to be defined and the transition from a “Kyoto world” to a “pledge world” is still very contentious, this basic structure is now largely agreed and it is therefore the structure that business must embrace and function within. Action needs to be taken and although the current framework remains imperfect, we need to make progress now.

For most emerging economies, those areas categorized by section A of the abatement curve in Figure 1 will constitute the wholly nationally implemented actions – that is, with little or no assistance from the UNFCCC structure and the mechanisms that it offers. As noted, these actions largely improve the efficiency of energy use which may or may not lead to absolute emission reductions. In most cases the technology is widely available (e.g. appliances, insulation, lighting, vehicle choice, use of public transport) and its application a matter of improved housekeeping at a national level. Some nations may seek low interest loan packages to build related infrastructure and hasten deployment, but in general there will be little need for access to a climate fund, the Clean Development Mechanism (CDM) or a technology mechanism. Existing relationships with business (e.g. national business bodies, national Business Council for Sustainable Development (BCSDs) & Business Council for Sustainable Energy (BCSEs) etc.) should suffice with regards implementation.

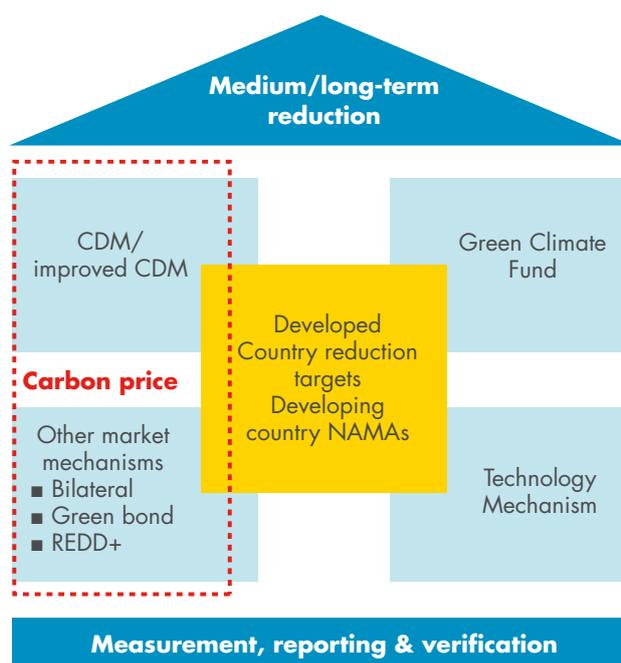
Sections B and C require the driver of a carbon price and the need to mature and implement technology that may not be readily available or even accessible domestically. These parts of the abatement curve broadly cover the areas of power generation and the provision of fuels in the transport sector. This is where the international agreement can be most effective in driving change and reducing emissions on a large scale.

Demonstration and deployment in emerging economies at such a scale will require access to the Green Climate Fund (GCF) and a robust carbon price through instruments such as the CDM. In this regard the CDM (or equivalent) must be tailored to specifically target projects in the power generation and transport fuel sectors, rather than simply be open to a broad swathe of opportunities at much lower points on (the left of) the abatement curve.

Within the EU a comprehensive policy framework has been required to begin to deliver the necessary emission reductions and there has been considerable business involvement. One particular example stands out that could be the model for business involvement more widely. In support of the EU need to see CCS develop more rapidly (an “EU NAMA” in effect), an advisory body was created to involve business, academia and civil society – the European Technology Platform for Zero Emission Fossil Fuel Power Plants (ZEP). ZEP serves as advisor to the European Commission on the research, demonstration and deployment of CCS (see Case Study). ZEP brought a tight business focus onto this “EU NAMA” and charted a way forward, using the tools available within the EU policy framework (e.g. EU ETS, EU SET Plan, EU Recovery Budget).

Such an approach within the UNFCCC framework and applied to NAMAs would address the dual coordination issues of the use of implementation tools (GCF, CDM, Technology Centre etc.) available to a NAMA and the regional infrastructure development associated with a number of major projects

Figure 2 The emerging international framework



Case Study: The Development of Carbon Capture and Storage in the European Union

Over the past five years a growing collaboration between business and government has seen the development of an implementation framework for Carbon Capture and Storage (CCS) in the European Union. The elements of this collaboration are the same as those required for business involvement in the delivery of large scale mitigation under the UNFCCC framework.

In 2005, following submissions by business and an increasing recognition of the importance of CCS in any future mitigation pathway, the European Technology Platform for Zero Emission Fossil Fuel Power Plants (ZEP) was created. ZEP serves as advisor to the European Commission on the research, demonstration and deployment of CCS.

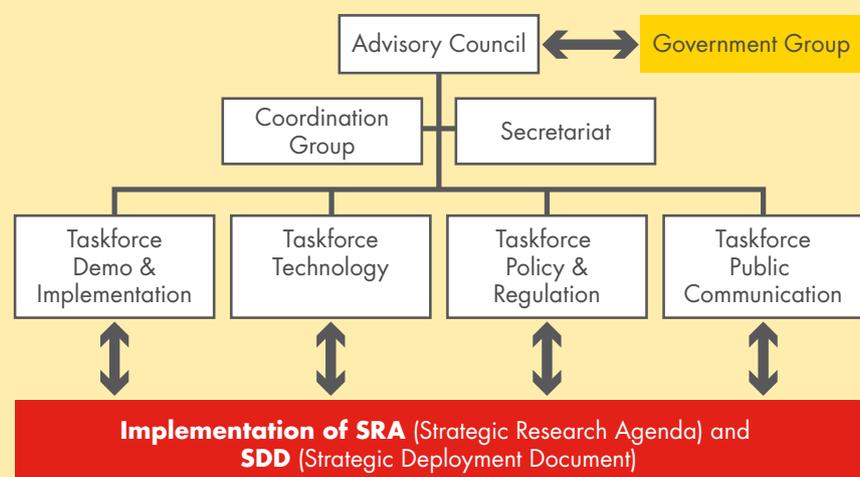
The European utilities, petroleum companies, equipment suppliers, scientists, academics and environmental NGOs that together form ZEP have three main goals:

1. Enable CCS as a key technology for combating climate change.
2. Make CCS technology commercially viable by 2020 via an EU-backed demonstration programme.
3. Accelerate R&D into next-generation CCS technology and its wide deployment post-2020.

Although ZEP is formally a technology platform, its mission extends far beyond a focus on the technology itself. As an advisor to the EU, it has been instrumental in the creation of the core elements of the EU CCS programme.

1. A clear goal to develop some 10 commercial scale CCS projects across the EU as a demonstration of the effectiveness of CCS and the economics of the technology.
2. A funding mechanism to support the implementation of CCS demonstration projects and bridge the gap between the early cost of CCS and the prevailing carbon economics in the EU.
3. A legal framework for the geological storage, measurement, reporting and verification of carbon dioxide.
4. A process for the submission and selection of projects eligible for the funding mechanism.
5. A technology research and development programme that supports the longer term deployment of CCS technologies in the EU. This is a sub-set of the EU Strategic Energy Technology Plan (SET Plan).

ZEP is funded jointly by the EU and its members and has a small secretariat to administer its operations and run the communication programme. It holds regular coordination meetings, council meetings and an annual general assembly. A number of technical and policy work stream teams meet as necessary to develop ZEP advisory positions.

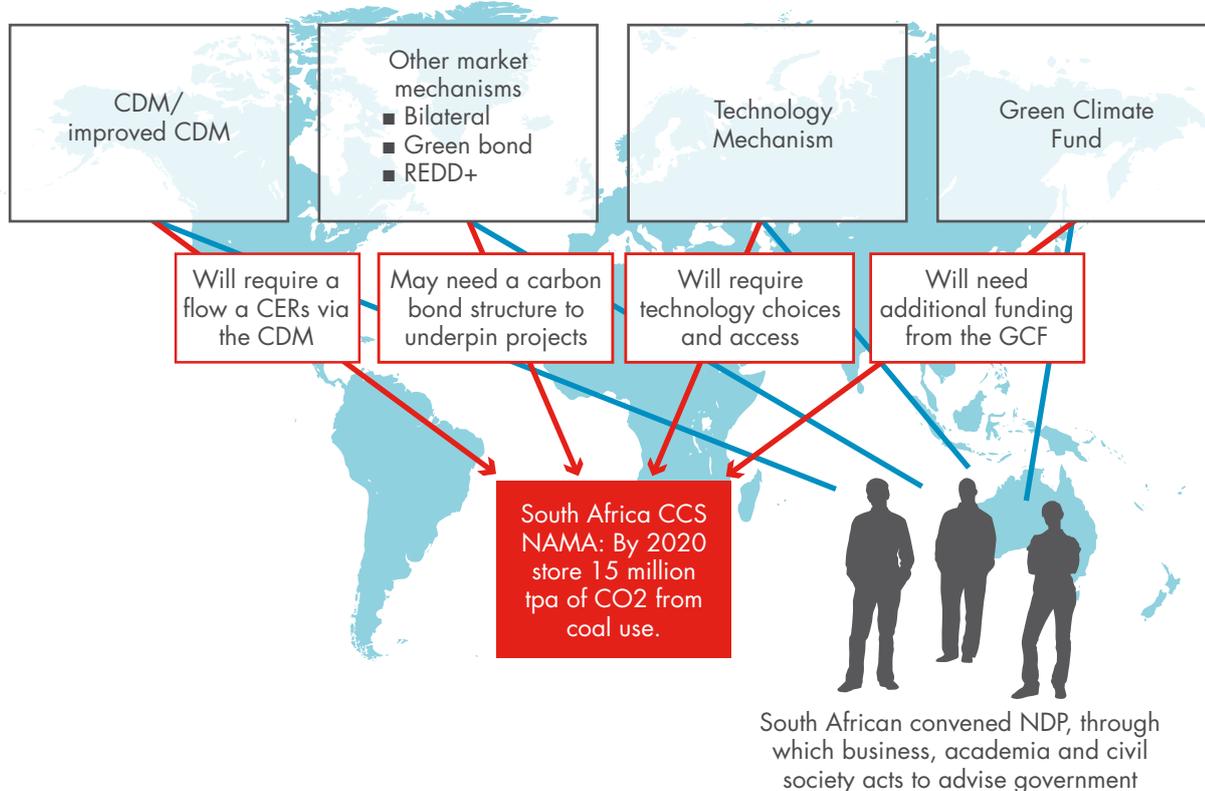


Business Involvement in the Development and Implementation of NAMAs¹

As the ZEP experience in the EU clearly shows, business can play a valuable and constructive role in the development and implementation of NAMAs. Today's emerging international framework already has many of the building blocks necessary to support NAMA activity, but there is a potential lack of coordination in directing these plans towards the necessary activity in individual economies or regions. This is the role played by ZEP in the EU for the CCS goals. Such an approach should form part of the international framework as NAMAs are developed and rapid implementation becomes required in order to meet various 2020 goals and aspirations. In addition, such a body would advise on the development of local and regional infrastructure (pipelines, grids etc.) associated with the projects within the NAMA.

An individual emerging economy NAMA (e.g. implementation of a portion of a national reduction goal utilising a particular technology set) which focuses on the right hand side of the abatement curve will require technology access and development, early demonstration then larger scale deployment, funding to bridge the required carbon price, proposals for project submission and clear communication of all the above. Each NAMA, or potentially a regional group of NAMAs, should be supported by a NAMA Development Platform (NDP) to perform the necessary coordination role. This would be funded primarily from the technology mechanism, but also with business contribution. At a minimum, the NDP would act in an advisory capacity to government with regards implementation. Its membership would include business, academia, civil society and civil servants from relevant national ministries (e.g. Department of Energy).

Figure 3 An example of a South African NAMA supported by business through a NAMA Development Platform



¹ In the context of this discussion a NAMA represents a large scale implementation of technology based projects (e.g. a number of offshore wind farms, large scale application of CCS) across a nation. Its goal is to drive significant emissions reduction within a given country.

Key deliverables in the near term

The further development of the proposal outlined in this document will require a number of important up-front deliverables through 2012:

1	The Business Role: Clarity from the UNFCCC that the business role must go beyond observer status at meetings or “special invitations” to contribute via ad-hoc roundtables and interactions. Agree on those parts of the overall process where business input should be focused. An immediate step would be to give parties the opportunity to be exposed to the proposals of businesses through in-session workshop(s) and/or facilitate meetings between businesses and the key negotiating groups (G77, Cartagena, Umbrella, etc.). Side events are not serving the business community well.
2	The Green Climate Fund: While recognising the importance of improving access to energy, agree that the principal mitigation focus of the Green Climate Fund is large scale emissions reduction in the power generation and transport sectors in emerging economies.
3	The CDM: Identify a clear way forward for the CDM, such that this one instrument able to project carbon pricing into developing countries is preserved, irrespective of the fate of the Kyoto Protocol. In tandem, clarity on the role of bi-lateral carbon pricing instruments.
4	The Technology Mechanism: In association with the business community, establish a body through the technology mechanism which can support and fund the creation of local and regional technology platforms tied to NAMA delivery.
5	Carbon Capture and Storage (CCS): Ensure that CCS is confirmed as eligible under the CDM so that this essential technology is available to emerging economies for inclusion in their NAMAs.

As a means of “learning by doing”, the UNFCCC should consider an early demonstration of a NAMA Development Platform. This would be established in an emerging economy intent on tackling large scale emissions reduction in its power generation sector over the coming decade.

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