

Creating Carbon Assets

The strategic positioning of your organisation in an economy that is increasingly characterised by carbon constraints will enable you to create tangible and intangible “carbon assets”. These can be understood as the value to your bottom line which is derived from low-carbon activities, investments and reputation.

The most relevant subset of carbon assets currently available to South Africa organisations are the carbon credits generated under the Clean Development Mechanism (CDM) of the Kyoto Protocol. This mechanism involves undertaking a greenhouse gas emission reduction projects, establishing the validity of these reductions and their status as “carbon credits”, and finally selling them on the international “carbon market”, which is operational today. The first step in any analysis of carbon assets is to establish your organisation’s carbon (or greenhouse gas emissions) profile.

There are six gases identified in the UNFCCC and the associated Kyoto Protocol, of which three are “major” contributors to global warming. They are:

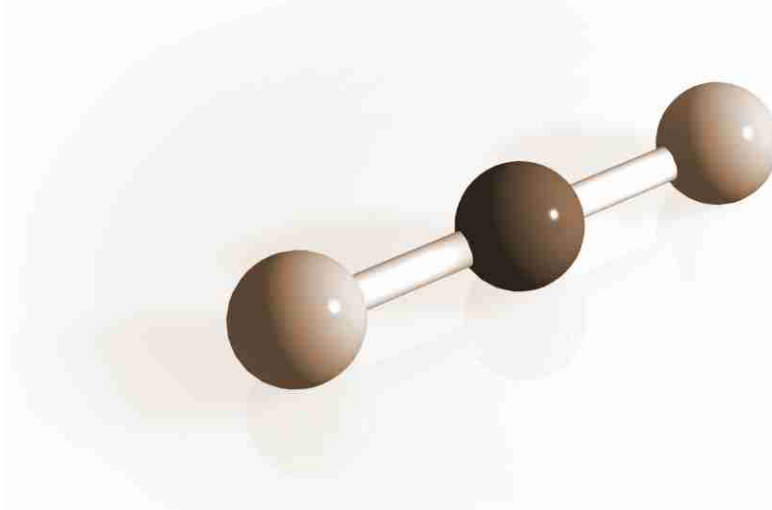
- **Carbon Dioxide** (CO₂), comprising 70% of the total greenhouse effect.
- **Methane** (CH₄), comprising 20% of the total greenhouse effect and with an impact on global warming 21 times that of CO₂.
- **Nitrous Oxide** (N₂O), comprising 6% of the total greenhouse effect and with an impact on global warming 311 times that of CO₂.

Reductions of these three gases probably represent over 95% of the opportunities for CDM projects in South Africa.

Regardless of whether or not they qualify for CDM, there are numerous emission reducing projects which could provide financial benefits to your organisation. These

projects. Specialised companies will do this for you through the internet, calculating your emissions (or the emissions related to a specific activity such as a conference, or air travel), charging you a rate per tonne of CO₂ equivalent, and then investing this money for you in emission reduction projects elsewhere.

Finally, by taking a longer term view of the carbon constrained future, you will be able to identify good investment opportunities and innovative infrastructure solutions. For example, investments in renewable energy including wind, solar, biomass and even tidal power represent a major opportunity to diversify your investment portfolio, whilst adding to your energy independence, and simultaneously generating carbon credits through CDM to pay for part of the costs. In the same way, improving the energy efficiency of your operation and/or capturing and utilising waste including methane from landfills or digesters or “off-gases” from smelting or other industrial processes may result in “projects” which reduce greenhouse gases and thereby qualify for carbon credits that will substantially improve your return on these investments.



Climate Change

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projects may also help to defray the risks arising from future potential regulation of greenhouse gases. However, if they also meet the criteria for CDM, they will attract “carbon credits”, which are in high demand in industrialised countries; the sale of which could significantly defray the overall costs of implementing the overall project.

In addition to carbon credits, intangible “carbon assets” can be created by branding your organisation as climate-friendly. As the physical impacts of climate change become more evident, climate change become more evident, customers, investors and the general public will increasingly value companies and municipalities that are ‘doing something about it’. They will also start penalising those that aren’t. Already institutional investors representing assets in excess of US\$10 trillion have called for the companies they invest in to disclose their greenhouse gas emissions and management strategies annually called the Carbon Disclosure Project.

Apart from managing and reducing your carbon profile, there are many other ways in which your organisation can begin branding itself as climate-friendly. An example is to ‘offset’ your remaining emissions by investing in external greenhouse gas reduction

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Today, we can see with our own eyes what global warming is doing. In that context it becomes truly irresponsible, if not immoral, for us not to do something.”

Joseph Lieberman quotes

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What is Climate Change?

“Climate Change” describes the problem of increased global warming which results from the release of greenhouse gases into the upper atmosphere. Studies have shown that the majority of these releases are a direct consequence of human activities such as emissions from the burning of fossil fuels like coal, oil etc. As its name suggests, the term “global warming” refers to the rise in temperature that ensues when the increase of greenhouse gases in the atmosphere trap more of the sun’s energy than the earth is able to cope with, causing global average temperatures to rise. This creates extreme changes in weather patterns and climatic conditions that include droughts, hurricanes, typhoons, floods, and damage to biodiversity.

Climate Change in a South African Context

For South African managers, climate change can no longer be treated as an esoteric concept, reserved for debate only by scientists and academics. It is now recognised as a serious threat which could have significantly adverse effects on the competitiveness and effectiveness of South African business.

If you are responsible for key management and/or financial decisions in your institution, you should be considering the following three areas where climate change can have a significant effect:

Impacts

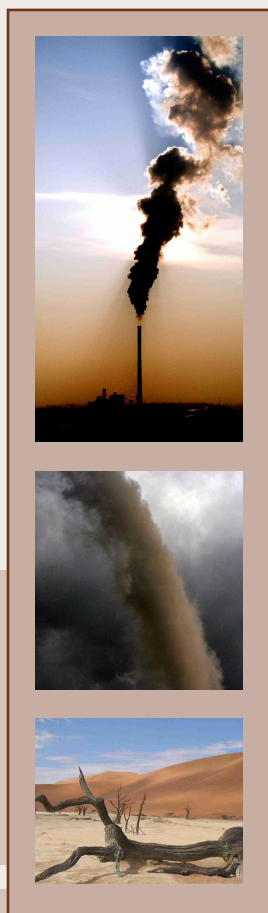
This refers to the direct physical effects of climate change on your activities, e.g. scarcity of inputs due to decreased agricultural production, reduced water supply due to droughts, or destruction of fixed assets due to flooding. Where it is possible to forecast these impacts, the astute manager can design measures to meet the challenges.

Response Measures

These are the measures adopted by others in response to the threat of climate change - whether international, national, or local in origin - that may affect your business. These measures will range from international treaties such as the United Nations Framework Convention for Climate Change (UNFCCC) and the Kyoto Protocol, and include market responses such as increases in insurance premiums, or national government regulations forcing you to reduce your emissions of greenhouse gases. Their effect could be to increase your operating costs, or your risk profile.

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Apart from its potentially negative effects, climate change also presents you with an opportunity to create and realise value. If your business contributes to global climate change through the direct or indirect emission of greenhouse gases, you can act to reduce these emissions and pay for the reduction costs in part by generating an emissions reduction credit which is a tradable asset. Of course, reducing these emissions is part of good corporate citizenship anyway, but if you can monetise your carbon reduction assets at the same time, you will be generating additional value for your organisation far in to the future.



Formulating a response to Climate Change

- 1 Read this executive guide to obtain an overview of the issues relating to climate change.
- 2 Assess how urgent the risk of climate change is to your business or organisation.
- 3 Find out more! Investigate these issues in greater depth; or, assign this task to an appropriate person within your organisation.

Adapting to the Impacts

Have you looked at your institution’s exposure to extreme weather events lately or considered what a temperature increase could do to your cost base? The physical effects of climate change could have an impact on three major areas:

- **Your physical assets (buildings, pipelines, vehicles, farmland etc).**
- **Your outputs (fuels, perishables, service provision, insurance of others’ assets).**
- **Your inputs and supply chain, including transport (cost of electricity, reduced supply of water).**

In South Africa, water shortages are one of the most likely physical impacts of climate change. These could, for example, affect both your suppliers, along with your ability to provide agreed service levels, or your inputs. Climate change has already been explicitly named by many large international insurers as being the cause of billions of dollars of recent physical damage. South Africa is not exempt from these effects. As a country we are sensitive to climate change, most especially to changes in rainfall.



Certain ‘front line’ sectors such as agriculture and water supply are already experiencing the financial implications of the physical impacts of climate change. Extreme weather events could make operating in certain geographical areas impossible.

Globalisation means that you won’t only have to adapt to local impacts. Additional challenges will manifest in the form of disruptions of international supply chains, global markets and international travel. You should therefore try to assess the following:

- **How vulnerable are the sources of your inputs to disruption from climate change?**
- **How dependent are you on potentially scarce natural resources such as water, forests, and a stable temperature?**
- **Is the demand for your product dependent on climate related circumstances?**
- **Have you invested in enterprises which are significantly exposed to the physical impacts of climate change (agriculture, tourism etc)?**
- **Is your ability to provide services at risk from any of these impacts?**

Your answers may indicate the need to exit certain high risk activities sooner than initially anticipated. You may also wish to take out insurance to cover these risks. An additional strategy would be to “hedge” your current investments by making other specialised investments. A number of innovative climate related risk hedging instruments are becoming available on the financial markets, such as catastrophe (“CAT”) bonds and weather derivatives.

In all cases you will need information about climate change and vulnerability of your sector, business or region. As the science advances, studies providing such information are proliferating and improving in accuracy.

Understanding Response Measures

Understanding the impact of climate change response measures could be as important to your institution as understanding the actual physical impacts of climate change. A simple example would be the impact of increased water tariffs imposed by municipalities to reduce water usage in the face of drought. If your business uses water as a key input in production or as a source of cooling or washing, this could have a major effect on your profitability. It could also impact the municipality’s financial base and cash flow.

On a more complex level, with the commencement of the EU emissions trading scheme, it may be useful to consider the change in the investment ratings of certain EU power generators. Given that the scheme calls for mandatory reductions in greenhouse gas emissions, many participants found themselves subject to unforeseen costs. This resulted in an increased risk profile for the least well-prepared companies, and a consequent reduction in their investment ratings. Many industrialised countries have started imposing restrictions on greenhouse gas emissions already, which will doubtless have the same effect. Other examples of response measures might include price increases for emissions or energy intensive materials such as fossil fuels, cement, aluminium, and chemicals.

If legislated targets for greenhouse gas emissions emerge in South Africa, mitigating your emissions will become a costly exercise, representing a significant liability to your institution, and/or influence the way in which you deliver services. You need to be aware of this now, so that you can take the pre-emptive measures to counter costs and deal with future requirements.

Finally, you will need to consider all of the above in relation to your investment portfolio as shown in the EU emissions trading scheme.

