

Editors Column

Welcome to our sixth and final edition of The Crystal Newsletter for the year 2014. In this edition we look at the Business Council for Sustainable Development Zimbabwe Conference 2014 and some of the presentations given, we have an interesting article on Urban Gardening and a new innovative idea, a Biodegradable Urn. We also take a brief look into the New York Climate Change Week and a debate on the Carbon Capture and Storage. Finally we look at the National Tree Planting Day 2014 as has become custom in our newsletter.

We welcome your comments and environmental contributions which you may kindly send to The Editors on:

infor@blackcrystal.co.zw

Thank you and happy reading!



**The Black Crystal Team Wishes You A Merry Christmas
And A Prosperous 2015**

Black Crystal Consulting is one of Zimbabwe's leading reputable companies offering a quality service in environmental and socioeconomic consultancy services. Black Crystal Consulting believes in **caring for the environment beyond today** to ensure that biodiversity is maintained and that natural resources are not depleted for the next generation to come.

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Did you know!!!

50 million trees are destroyed in Zimbabwe every year, 7.5 million of those 50 million are destroyed in tobacco curing. Only 45% of a tree is utilized, the rest is thrown away. IDEA: Instead of cutting a tree for your Christmas celebrations, why don't you make one using recyclable materials. Please see page 6 for pictures of recyclable Christmas trees .on the last page.

Carbon Capture and Storage

What is it? CCS stands for Carbon Capture and Storage.

Fossil fuels are presently the dominant source of global primary energy demand and will likely remain so for the foreseeable future. The reason CCS gets so much attention is because it is seen as a best-of-both-worlds technology. It allows economies to continue growing and developing thanks to the huge range of opportunities that fossil fuels provide but it also allows industry to mitigate the exorbitant impact these opportunities have on the delicate climatic systems we so rely upon.

Fossil fuels currently supply over 85% of all primary energy globally, and stabilizing global temperatures at or near the 2°C warming target will likely require significant contributions from CCS. Considering this latent potential, there is quite a lot of faith being put into this technology, that, until fairly recently in the UK, had not been commercially developed. There are only 8 operational commercial-scale CCS plants globally.

CCS can be broken down into three steps:

• Capture

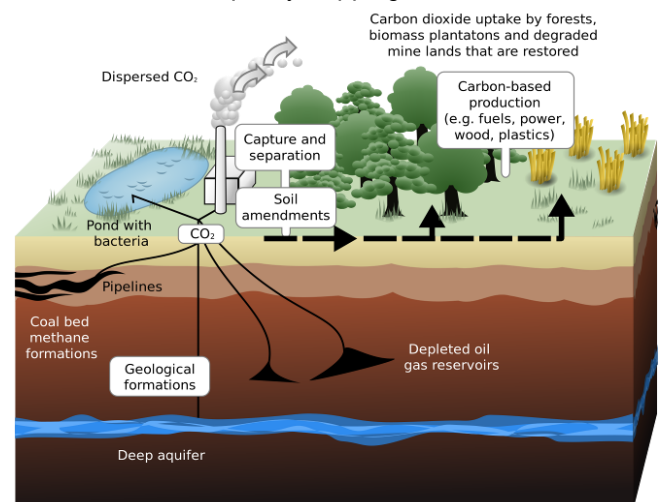
Capturing carbon dioxide (CO₂) from power plants or industry, and compressing it to a liquid state.

• Transport

Transporting the CO₂ (usually via pipelines) to deep geological storage points such as depleted oil and gas fields or deep saline aquifers.

• Storage

CO₂ is injected into deep underground rock formations, often at depths of one kilometer or more. It is then "trapped" beneath seals of low permeability rocks, dissolved in water, converted to solid minerals or by a method known as capillary trapping.



Scale - The International Energy Agency has stated that CCS can provide a fifth of the world's emission reductions needed by 2050. Considering CCS can capture up to 90% of the carbon emissions from the industrial use of fossil fuels for electricity generation, it stands to reason that, if conducted on a large enough scale, this 20% figure could be possible. Some progress needs to be made however; in order for this goal to be achieved by 2050 more than 3,000 CCS projects must be successfully constructed in this time.

So what's happening currently? - Whilst fully operational plants may be hard to find, "worldwide up to \$40 billion has been committed by governments to support CCS projects. According to the Global CCS Institute's *Global Status of CCS* report for February 2014 there are 21 large-scale projects in operation or construction around the world (including the 8 fully operational).

What are we doing about it?

Currently the UK has a set of conditions which make it a very suitable place to explore the technology:

- Extensive storage capacity under the UK seabed, particularly under the North Sea
- Existing clusters of power and industrial plants with the potential to share CCS infrastructure
- Expertise in the offshore oil and gas industry which can be transferred to the business of CO₂ storage.

The UK Secretary of State for Energy and Climate Change Edward Davey states that he would like Britain to be a leader in the technology: "*As carbon capture and storage is commercialized Britain will be in first place to export this knowledge to a decarbonizing global economy.*" In order to do this the plan is to help industry to implement an investment strategy that would enable the UK to equip itself throughout the early 2020s, a structure that they say is "one of the most comprehensive offered by any country in the world".

So, seemingly there is every reason for jumping headfirst into the world of CCS, but other groups in society hold differing opinions....

For the full article, please send your request to infor@blackcrystal.co.zw

New York Climate Week - September 23 to 26, New York, USA

Climate Week New York City is the annual international platform for governments, businesses and civil society to collaborate on low carbon leadership and innovation. This year, Climate Week NYC coincided with the UN Climate Summit, creating a unique opportunity for the world's most influential individuals and groups to come together and create urgently needed momentum ahead of 2015's critical climate talks in Paris. Climate Week NYC is the collaborative space for all related events in support of the UN Climate Summit.

In its sixth year, Climate Week NYC offered a vital platform for the bold leadership and innovative collaboration we require to secure a safer, more prosperous low carbon future. Through a busy week of high-profile events, business panels and public-facing activities happening in and around New York City, Climate Week NYC has become a key international forum for governments, businesses and civil society. Since its launch in 2009, The Climate Group has acted as Secretariat for Climate Week NYC and this year partnered with CDP to deliver the Opening Day of the summit.



President Barack Obama speaking at the Summit

Clean energy investment totaled US\$254 billion last year according to Bloomberg New Energy Finance, a company that provides energy analysis for decision-makers. Taking place in Bloomberg's New York headquarters, the 'New models for clean energy investment' session aimed to dig deeper into this investment figure and ultimately find ways to boost it. But while clean energy projects are springing up around the world, risk issues remain an obstacle to attracting new investors, so the burning issue of insurance was addressed by David Bresch, Head Sustainability, Swiss Re, who pointed out climate change has been on the company's agenda for more than 20 years.

Rasmus Helveg Danish Minister for Climate, Energy and Building agreed, calling finance “key” to overcoming the climate crisis, of which he said: “Climate change is the largest market failure known to man.” He attributed the causes of this impending loss to the fact fossil fuels are affordable, available and subsidized, but then suggested renewables are becoming competitive.

Clean energy is becoming increasingly cheaper, with a recent study even showing solar PV has reached grid parity in Germany, Italy and Spain. Keen to point out Denmark has long been ahead of this curve, the Minister said: “Denmark has been investing in renewables and energy efficiency for 40 years which has offered great stability.” He explained Denmark had also cut emissions by over 20% while its economy grew 40%, with Danish renewable exports tripling, illustrating a “huge opportunity we can't afford to miss”.

Steve Corneli Senior Vice President, Sustainability, Policy and Strategy at NRG Energy said clean energy growth is just undergoing a transition from being driven by policy and subsidy to markets and customers, and that clean energy is actually the “perfect sweet spot” for return on investment due to the continued evolution of clean technology and its growing revenue stability.

The global pattern for clean energy investment too, was highlighted by Rachel Kyte, Vice President and Special Envoy for Climate Change, who shared how the Vice President of China said the country is exponentially increasing climate smart investment, at the UN Climate Summit the day before.

While it's clear the panelists believe finance and insurance industries are finally reacting to climate change as an opportunity, emissions are still on track to rise to dangerous levels. So when all panelists were asked what single element would accelerate the process and allow clean energy investment to triple, Rachel Kyte affirmed “joined up government”, with Steve Corneli arguing the government in the US in particular should unlock utilities for distributed energy following the regulatory reforms that are currently taking place.

Risk expert, Juerg Trueb, Head of Swiss Re's Environmental and Commodity Markets Department, said the insurance industry's role is to properly analyze renewables in order to address risk and tackle related barriers.

But with the economy tipping toward a low carbon transition as exemplified by the launch of new business-centric initiatives over the last week, including We Mean Business and RE100 - whereby leading companies commit to going 100% renewable - clean energy only looks set to cement its crown as the more secure, more affordable, and absolutely critical power source for sustainable, economic growth. The event took place at Climate Week NYC, which is the collaborative space for all related events in support of the UN Climate Summit.

To read more on this: <http://www.climateweeknyc.org/>

National Tree Planting Day 2014

The National Tree Planting Day in Zimbabwe is celebrated every year on the first Saturday of December, which falls on the 6th this year. People from all walks of life are encouraged to participate in this event by planting a tree or more on this day. The theme for this year is “Forest For Food Security And Nutrition”. The tree of the year is *Bolusanthus speciosus* which is also known as Tree wisteria (English) Impaca/ Mpaca (Ndebele) Mubacha/ Mukweshangoma/ Mupaka/ Murutsa (Shona) Mushengamhara (Shona).



It is a small, deciduous tree, often multi-stemmed with drooping foliage. Bark dark, rough and vertically fissured. Leaves imparipinnate with 3-7 pairs of leaflets plus a terminal leaflet; leaflets lanceolate with an asymmetric base, up to 7 cm; midrib and lateral veins yellowish and conspicuous; margin entire or irregularly scalloped. Flowers in striking, pendulous, terminal sprays, blue to

deep mauve. Fruit a flat narrow pod up to 7 cm, straw-colored to grey-black when ripe.

Animals including monkeys, gemsbok, giraffe and grey duiker eat the pods and leaves. The wood, which is highly sought after by carpenters, makes excellent furniture. It works well on a lathe, turning out beautiful lampshades and other articles. The straight growing stems are very hard, termite resistant and used for fencing posts. The roots are used medicinally to alleviate stomach problems and the inner bark used to treat abdominal cramps. It also has excellent potential as a tree for landscaping and growing in the home garden.

NEW ON THE MARKET: Bios Urn Biodegradable Urn with Seed – Let's convert cemeteries into forests

The new Bios Urn is a fully biodegradable urn designed to convert your ashes into a tree after life. Mainly composed by two parts, the urn contains a seed which will grow to remember your loved one. Bios Urn turns death into a transformation and a return to life through nature



Thanks to Bios Urn structure, the seed germinates in the top capsule, separated from the ashes. Once the urn starts to biodegrade seed roots are already strong enough to contact the ashes. With biodegradation the entire set becomes part of the sub-soil.



Bios Urn comes in a single box with everything you need to plant your urn. For more information on this product, visit: <https://urnabios.com/product/>

Please note that we will be closing our offices for the festive season on the 19th of December 2014. The office will be reopened on the 5th of January 2015. If you have any matter needing immediate attention please contact Mellissa on +263772667121

Business Council For Sustainable Development Zimbabwe Conference 2014



This year the BCSDZ was held at the Wild Geese Lodge from the 24th to 25th of November. As is every year, the conference was very well organized. The theme for the conference was "Striving for a Circular Economy". The definition of a circular economy differs from industry to industry, however the general meaning is the use of resources within an environment in a circular manor, i.e. all resources are utilized. This encourages the concepts of reducing, reusing, recycling, composting, energy recovery and safe disposal (in the event that the first 3Rs are not possible). In a circular economy, companies work together to ensure that no resources are lost in their manufacturing/operating activities. The companies can have synergies when the waste from one company can be a resource for another.

Mr Misheck Kachere, the Chairman of the BCSDZ, welcomed everyone to the conference. In his speech he pointed out that the BCSDZ had grown and went on to mention some of the activities that the Council has been involved in in the course of the year which included a workshop on Business and Water Efficiency in line with the outcome of the Breakaway Groups' review of Action 2020, the Green Industry initiative. He noted that global leaders and proponents of sustainable development have said there is a strong business case for circular thinking and its associated substantial economic opportunities. Then the Director General for Environmental Management Agency

Mrs D.M Chasi, standing in for the Director of Environmental and Natural Resources, Ministry of Environment, Water and Climate, Mr Irvin Kunene gave the official opening address. This was followed by a DVD presentation from Mr Peter Bakker, the President and CEO of the World Business Council Sustainable Development in Switzerland.

The two day event had presentations from more than 20 guests speaking on various issues affecting industries in Zimbabwe. Some of the presentations included 'The Circular Economy', 'Implementing Sustainability Objectives' and 'Activities in Relation to the Circular Economy' presented by Mrs Juliet Ziswa from Unilever and Mrs Edith Matekaire from Lafarge Cement Zimbabwe. Dr Joseph Kanyekanye, the President of the Timber Producers Federation and Group Chief Executive Officer of Allied Timber Holdings (Pvt) Ltd delivered a presentation on 'Forest and Climate Change – the diverse roles of Forests', which included actions for mitigating climate change. Mr Abednego Chingwada, Group SHEQ Manager for Zimplats presented on renewable energy and how implementing solar power projects and practicing best energy saving practices has positively affected Zimplats.

Some of the presentations will be included in next year's newsletters so that we can all learn from other organizations and start doing our part in striving for a circular economy. Our gratitude goes to Mr. and Mrs George and Nikki Foot for an excellent job in organizing and managing the conference.

Urban Gardens

Green roofs and walls can reduce building energy bills and boost biodiversity while still being aesthetically pleasing – so why aren't they more widespread in our cities? – Louise Murray

Green roofs are not a new idea. The early Pictish inhabitants of Orkney and Shetland, the Inuit in Canada and Greenland, and the Vikings in Norway all embraced green roof technology in the form of sod (grass and the part of the soil beneath it held together by the roots) houses to keep warm in winter and cool in summer.

Green roofs come in several shapes and forms. The simplest is an extensive mixed Sedum roof, planted with several species of tough, drought resistant succulents that store water in their fleshy leaves and are highly attractive to bees. These require only 8cm of rooting substrate for the

shallow rooted plants and minimal maintenance though they cannot be walked upon to any degree. Extensive roofs need no irrigation and are the lightest of all vegetated roofs. Intensive green roofs are characterized by deeper soils up to 100cm in places to accommodate heavier, more diverse plantings with trees or larger perennial plants and shrubs and are usually designed to allow access to the occupants of the building, more of a rooftop park or garden.

Green or living, walls are the most beautiful manifestation of green infrastructure in our cities. Green walls are also not new but are becoming more common as their benefits in helping reduce urban flooding is recognized. They also have a role in shading or insulating buildings, depending on the elevation, orientation and time of year. Even cleverly planted Wisteria – a vigorous climber, can have an impact on the energy budget of a building by shading the walls and windows from full summer sun and when leafless in the winter allow sunlight onto the façade. Like green roofs, they can also enhance the local environment by absorbing airborne particulate matter and dampening noise at street level. In Zimbabwe whilst this is being effectively used on the Eastgate building in Harare there is a need for more buildings to establish green roofs and walls.



Picture showing an idea of green gardening on a rooftop

Much of the green roof research was conducted in Germany. This explains why Germany has the highest density in green roofs in Europe and growing every year. Key to understanding the benefits of green roofs, particularly in slowing runoff from storms, is the use of embedded research lysimeters (these meters record rainfall input and water loss through runoff on various types of roofs). Green roofs are so much better than non-urban systems such as grasslands or forested areas at absorbing peak rainfall and slowly releasing the moisture via transpiration from plants and surface evaporation.



Picture showing an idea of green walling

A green roof can be designed to provide attenuation (the gradual loss in intensity) for any large rainwater event using a storage layer and flow controls to limit flow off the roof. In Berlin, Germany there is active legislation to encourage installation of green roofs in both new buildings and refurbished buildings where the canal system is essentially at capacity in its ability to deal with storm water runoff. It is this involvement of urban planners, developers and architects, combined with the forces of climate change that drives the uptake of greener infrastructure: Source: Engineering and Technology – August 2014

Recyclable Material Buy-Back Centre

Where: 109 East Road, Belgravia, in the parking lot of Dance Trust Zimbabwe (formerly National Ballet)
Opening times: 10am to 1pm Monday, Wednesday and Friday

The beginning of October 2104 saw a new recycling center set up by Mr. Michael Laban who will be in attendance to buy any of eight kinds of recyclable materials: tin cans, plastic drink bottles (Polyethylene Terephthalate - PET), hard plastic (bottle lids, some cleaning material bottles like toilet duck etc.), (high density polyethylene), plastic bags. Virtually all filmed plastic, from bread bags, through to shopping bags to bin liners and bin bags (low density polyethylene), paper (not gloss), corrugated cardboard, white bond, common newsprint, IMW cardboard (not corrugated).

While the centre is only paying 1 cent per kg, Mr Laban explained that the real point is:

- To educate people about what has value, before it ends up in the waste stream

- To build community, in respect of our environmental needs and keep valuable materials from unnecessarily ending up in overfull landfills. People can join together and put specific valuable materials that are no longer wanted out for someone to collect them, and make some money
- Thus giving employment to people who have few alternatives
- The centre will produce a model for replication, figures for realistic business planning, and suggest solutions to problems so we don't all have to learn from the start.

Mr. Laban says that he is keen to make contact with others in the industry, specifically collectors, in other locations. "It would be good to form a hub, so we can educate with a bigger voice, learn from each other's experiences, and encourage more to happen, from the bottom up".

Note: The centre does not accept all waste products and recyclable materials must be clean and sorted. Thank you.

Get involved! Make a difference, and email Michael Laban on: mlaban86@gmail.com

Reusable Christmas Tree

Here are some examples of reusable Christmas trees. The two on the left are made from plastic bottles and the one on the right is made out of beer bottles.



Thank You!!!