

CSR: Water, Energy and Sustainable Development

Briefing paper Thematic Session EC+10 Event

Business leaders are invited to use the Earth Charter as a common ethical framework in their dialogue with civil society actors and other stakeholders, as well as in their effort to incorporate sustainability principles in their practices and to fulfill their corporate responsibility role. A special document **The Earth Charter, GRI and Global Compact** was developed to help business groups to see the relationship among these efforts.

The Earth Charter International encourages all businesses to use the Earth Charter in one or more of the following ways:

- ✚ **Engage** employees with the Earth Charter for the purpose of learning, training, and inspiration.
- ✚ **Incorporate** Earth Charter values and principles in the business mission statement and core operations.
- ✚ **Assess** the activities of the business in the light of Earth Charter values and principles and where possible/necessary bring them in line with the Earth Charter
- ✚ **Report** on conduct using the Global Reporting Initiative's Guidelines.

It is hoped that the Earth Charter Initiative will count with numerous stories of how business groups are using the Earth Charter in their CSR efforts.

The purpose of this session

To provide a space to reflect and dialogue about the **potential capacities and the responsibility of the private sector** to improve its management of water and energy in innovative and sustainable ways in order to more effectively contribute to building a new green economy. And to reflect on links with the Earth Charter in this process.

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Reporter (for the written report): Jaana Laitinen, ECI

Short introductory key-note speakers / participants contributions:

- Tineke Lambooy, Worldconnector
- Nelton Friedrich, ITAIPU Binational, Brazil
- Johan van de Gronden, Worldconnector and director WWF NL
- Elianne Demollin, Municipality of Heerlen, New Earth Leader
- Arianne Reis, Eth Bio energia Brazil, New Earth Leader

Special events within the session:

- Video Itaipu, Caring for Water and the Earth Charter

Documents:

- *The Earth Charter, GRI and Global Compact* (publication available at the event, also find it on our website: <http://www.earthcharterinaction.org/content/categories/Business/>)

Questions to frame the discussion:

1. What role could the Earth Charter play to enhance the efforts related to sustainable development, water, energy, and of corporate social responsibility? How are those subjects related?
2. What specific principles are proposed by the Earth Charter in relation with water and energy use, and CSR (see below certain core values cited in brief)?
3. What type of partnerships could ECI catalyse in regard of innovative collaborative partnerships between the private sector, civil society and governments?
4. What should be the strategic direction that ECI should follow in relation with the private sector, in particular with a focus on CSR?

Earth Charter Assess: relevant provisions re. business, water, energy and sustainable development

- PREAMBLE: we are one Earth community with a common destiny.
- Earth, Our Home: preserving a healthy biosphere with all its ecological systems, a rich variety of plants and animals, fertile soils, pure waters, and clean air.
- Global Situation: dominant patterns of production and consumption are causing environmental devastation, the depletion of resources, and a massive extinction of species.
- Fundamental changes are needed. We have the knowledge and technology to provide for all and to reduce our impacts on the environment. Together we can forge inclusive solutions.
- We must decide to live with a sense of universal responsibility. We urgently need a shared vision of basic values.
- With the right to own, manage, and use natural resources comes the duty to prevent environmental harm and to protect the rights of people. (provision 2)
- Secure Earth's bounty and beauty for present and future generations. (provision 4)
- Protect and restore the integrity of Earth's ecological systems, with special concern for biological diversity and the natural processes that sustain life. (provision 5)
- Adopt plans and regulations for environmental conservation.
- Establish and safeguard biosphere reserves.
- Promote the recovery of endangered species and ecosystems.
- Control and eradicate non-native or genetically modified organisms harmful to native species and the environment.
- Manage the use of renewable resources such as water, soil, forest products, and marine life in ways that do not exceed rates of regeneration and that protect the health of ecosystems.
- Manage the extraction and use of non-renewable resources such as minerals and fossil fuels in ways that minimize depletion and cause no serious environmental damage.
- Prevent harm as the best method of environmental protection and, when knowledge is limited, apply a precautionary approach. (provision 6)
- Take action to avoid the possibility of serious or irreversible environmental harm even when scientific knowledge is incomplete or inconclusive.
- Place the burden of proof on those who argue that a proposed activity will not cause significant harm, and make the responsible parties liable for environmental harm.
- Ensure that decision making addresses the long-term and indirect consequences
- Prevent pollution of any part of the environment and allow no build-up of radioactive, toxic, or other hazardous substances.
- Reduce, reuse, and recycle the materials used in production and consumption systems. (provision 7)
- Act with restraint and efficiency when using energy, and rely increasingly on renewable energy sources such as solar and wind.
- Promote the development, adoption, transfer of environmentally sound technologies.

- Internalize the full environmental costs in the selling price, and enable consumers to identify products that meet the highest social and environmental standards.
- Advance the study of ecological sustainability and promote the open exchange and wide application of the knowledge acquired: Support international scientific and technical cooperation on sustainability. (provision 8)
- Guarantee the right to potable water, clean air, food security, uncontaminated soil. (provision 9)
- Promote the equitable distribution of wealth within nations and among nations. (provision 10)
- Ensure that all trade supports sustainable resource use, environmental protection.
- Require multinational corporations to act transparently in the public good, and hold them accountable for the consequences of their activities.
- Uphold the right of everyone to receive clear and timely information on environmental matters and all development plans and activities which are likely to affect them. (provision 13)
- Remedies and redress for environmental harm and the threat of such harm.
- Eliminate corruption in all public and private institutions.
- Strengthen local communities, enabling them to care for their environments.
- THE WAY FORWARD: common destiny beckons us to seek a new beginning.
- This requires a change of mind. It requires a new sense of global interdependence and universal responsibility.
- Every individual, family, organization, and community has a vital role to play....are all called to offer creative leadership.
- The partnership of government, civil society, and business is essential for effective governance.

Information and discussion

Water

Most businesses use water (and energy). Either in agricultural processes (e.g. food, cotton, sugar cane) or industrial processes, e.g. to produce water and water-based products (e.g. soft drinks and beer), for electricity generation, in cooling processes (e.g. electricity companies), in dye and washing processes (e.g. textiles), or for making chips. Besides these purposes, water is also used for drinking purposes (workers), and energy is used for the heating or cooling of buildings.

Water can be extracted from aquifer in the ground, from rivers and lakes and – in few cases - from the sea. Sometimes the water disappears (e.g. irrigation, production of soft drinks), sometimes it is only ‘borrowed’ (e.g. electricity companies borrow water for cooling purposes), and in other processes it is used in a way that it is polluted afterwards (e.g. dyeing textile, washing beer bottles).

Fresh water levels worldwide are dropping. Lakes and rivers are drying up and sources such as glaciers and forests upstream are disappearing. Many international reports have rang the alarm bell.

Since businesses have realised that they need water for their industrial processes, they are willing to investigate how the sources can continuously renew themselves and to invest in innovative ways and new production methods that are sustainable. Interesting examples are Coca Cola and the French water company Vittel. The first started an innovative partnership and the second started to use a PES system. Another category of innovative business approaches are demonstrated by the dairy firm FrieslandFoods and the bottled water company Earth Water. Both contribute to the MDGs by their business activities. Other companies, such as Akzo Nobel and Heineken are trying to manage their water use and waste water in such a way that it least impacts the surrounding eco-systems and local communities. These examples are elaborated briefly below.

Interesting best practices

Coca-Cola has entered into a worldwide collaborative partnership with World Wide Fund for Nature (WWF) aimed at understanding watersheds (i.e. the area of land where all the water that drains off

goes into the same stream, lake or other water body¹) and the complexity of water as an ecosystem service, working with local communities, and developing a common framework to preserve water sources (Senge, 2008). WWF possesses knowledge about natural systems and Coca Cola about the water quantities it uses. On paper, this joint venture looked like a win-win, however, in practice, the first step has been reported to be a difficult one, i.e. to share information and to find a common language in which to communicate. In some locations, these organisations had fought each other for years and, in other locations, they had never met before.

Coca-Cola is also one of the partners of the 'CEO Water Mandate'. In its 2008-2009 Sustainability Review, the company stated: "In India, our goal is to be a "net zero" user of groundwater by the end of 2009 by recharging the amount of groundwater used in our operations through supporting hundreds of rainwater harvesting projects. We also support drip irrigation and other initiatives".

Perrier Vittel S.A. (Vittel) is one of the world's largest bottlers of natural mineral water. The maintenance of water quality is vital for a water bottling business. Vittel had calculated that the protection of an existing water source is more cost-effective than building a new filtration plant or transferring its operations to new sources (Perrot-Maitre and Davis, 2005). Vittel therefore decided to finance 'quality drinking water' through compensation for services of landholders located around the springs. The services provided by farmers and forest landholders entailed the improvement of agricultural practices and the reforestation of sensitive infiltration zones. The farmers agreed to adopt less intensive farming practices in order to reduce agricultural run-off of herbicides and other pollutants.² This project was claimed to be a success, because Vittel had achieved its goals. The level of non-point-source pollution³ were reduced significantly and, according to a cost-benefit analysis study, the project was economically justifiable (Perrot-Maitre, 2007). The Vittel model might however be difficult to implement in a large geographical area, or in a region with many farmers without government support.

Friesland Foods supports the development of local water supplies in the areas where it has production locations and markets its products. Since water is essential for both the consumption of dried dairy products and for the production of dairy products, it is imperative that good quality drinking water is available where Friesland Foods operates. For example, in Africa, the company contributes to programmes for clean drinking water by digging wells and installing water pumps. More than 20 wells have been dug, providing nearly four million people with access to clean drinking water (Friesland Foods, 2006).

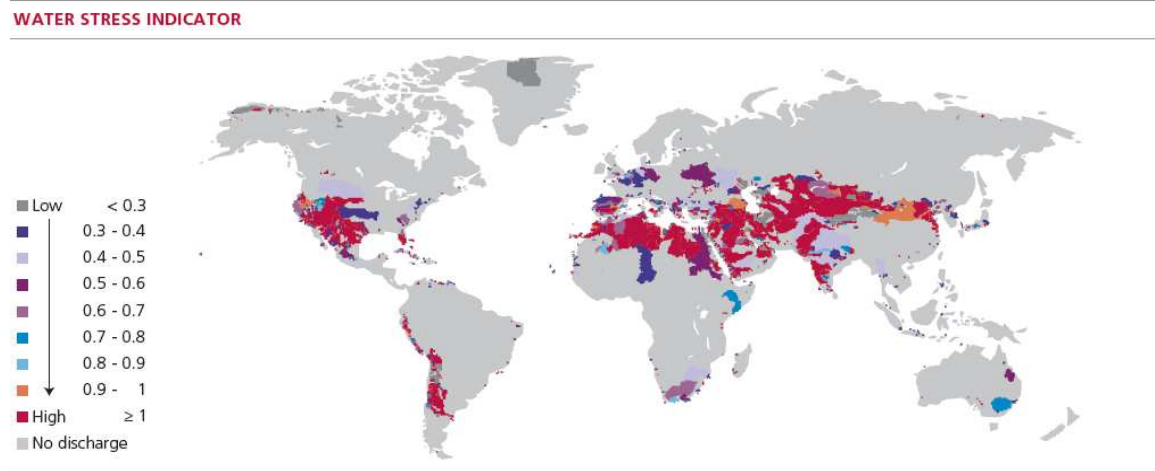
Earth Water International was created by a young university graduate student with a progressive vision: if people are going to consume bottled water, why not use those monies to help provide clean drinking water for those who do not have access to it? The company donates all of its net profits from the sale of Earth Water (available in the kiosks at all Dutch railway stations) to the Office of the United Nations High Commissioner for Refugees (UNHCR), and these profits fund projects related to "acquisition, transport, storage, and distribution of fresh clean water, focusing on both emergency provision and developing sustainable water sources for people living in poverty." Furthermore, the company is concerned with the environmental impacts of bottled water; the water and packaging are always sourced locally, i.e. the bottles are never shipped overseas. Moreover, the bottles manufactured in Canada are from biodegradable corn instead of plastic (Earth Water International, 2008).

¹ Center for Watershed Protection, at <http://www.cwp.org/Resource_Library/Why_Watersheds/index.htm> accessed on 12 September 2009.

² Vittel had financed the programme with the support of the French National Agricultural Institute (INRA), and the French Water Agencies. The total cost for the first seven years was about USD 24.5 million.

³ Non-point-source pollution usually occurs when rainfall, snowmelt or irrigation runs over land, or through the ground, picks up pollutants, and deposits them into rivers, lakes, and coastal waters or introduces them into ground water. See: <<http://www.sourcemolecular.com/definitions/definitionnonpointsourcepollution.htm>> accessed on 12 September 2009.

Akzo Nobel, one of the world's largest producers of chemicals, has indicated that its ambition is to achieve sustainable freshwater management at all of its sites by 2015. Besides the intake of freshwater, the emission of contaminated water from its sites to surface waters may negatively impact freshwater resources and ecosystems. For this reason, the company measures quantities of freshwater consumption and the emission of Chemical Oxygen Demand in its effluent to surface water, and has – if appropriate – programmes in place to reduce its impact. In 2007, Akzo Nobel mapped all of its sites to determine if they are located in water sensitive areas (figure below). The company stated that it is important to set priorities in the risk assessments of its sustainable water management at its sites. It reported in 2008 that in the sustainable water pilot, 19 sites out of 31 investigated have been determined as having sustainable water use (Akzo Nobel, 2007; Pacific Institute, 2009, p.31; Smakhtin, 2004, pp. 10-16).



Heineken took a different approach. In 2007, it commissioned a study by Leiden University – focusing on its own production sites and selecting water management as a key parameter. Using a range of analytical tools, including the World Database on Protected Areas (WDPA), the study established the precise locations of Heineken's 154 production sites and matched them to protected areas listed by WDPA. Advanced software was used to combine these two pieces of information, producing a definitive map of sites relative to WDPA areas. Because water management is Heineken's primary biodiversity impact, the map was refined to plot all sites inside or up to 50 km from a recognised Ramsar wetland area (1971 Ramsar Convention on Wetlands). This exercise produced a definitive list of 108 sites located in or near WDPA areas. Of these, 14 did not have a waste-water treatment plant. The study has allowed Heineken to match both GRI indicators concerning biodiversity and to prioritise its waste-water management programme. The company is conducting feasibility studies into the construction of water treatment plants at all 14 production sites (Heineken, 2007).

Paying for Ecosystem Services, including water: innovative business model; important for energy companies and water using companies; important to conserve ecosystems; and potentially an aid for sustainable development

The innovative business approach which Vittel used can be qualified as: **PES = Paying for Ecosystem Services**, i.e. in this case, not only paying for the water quantity used, but also for the protection of the source. PES represents a flexible compensation mechanism in which ecosystem service providers are compensated by service users (Katoomba Group, and UNEP, 2008). As regards water, i.e. in fact paying for nature's hydrological services – primarily the filtering of water through forests or wetlands.

It is interesting to note that the European Commission has commissioned an extensive study on the value of ecosystem services: The Economics of Ecosystem and Biodiversity (TEEB). Various reports

have already been published, some more are expected to come.⁴ They offer a scientific ground to base PES systems on.

For example, PES can be set up to protect a watershed. Establishing a watershed payment system serves as a mechanism for protecting a lake, river or stream by managing the entire watershed that drains into it. A watershed can cross country and state lines⁵ Typically, it concerns financial mechanisms to compensate upstream landowners so as to maintain a certain land use in order to positively affect the quality and availability of the downstream water resources. E.g. the upstream landowners can be paid *not* to build roads or *not* to log trees to keep a forest intact. It can also concern a commitment to plant trees or perform other activities that have a positive impact on the quality and quantity of water (Kiersch and Hermans, 2005). Farmers, water companies, breweries and soft drink companies that depend on the availability and the quality of water near their production sites, in a downstream area can then benefit from a continuous and regular supply of clean water. Electricity companies that also use water power to make electricity need a regular supply of water. If the quantity of water reservoirs or rivers diminishes, less electricity can be produced. If the forest would be logged, the downstream users bear the risk of suffering from dirty water due to erosion, and from a less secure supply of water (no forest means less regular rainfall). The risk of flooding will also be higher (Carroll and Jenkins, 2008).

However, the involvement of the private sector in the PES schemes for watershed management has not yet developed on a large scale. In fact, only five per cent of global private investments were directed towards the water sector, which of course also comprises many water-related business activities other than PES. The SNS REAAL Water Fund explains that a lack of involvement is related to the presumptions of investors about water investments, such as that water issues are very complex and that investments have a high-risk and low-return profile, combined with high overhead and transaction costs.⁶ High transaction costs should be understood in relation to the acquisition of legal title or use rights and capacity building in order to change unsustainable land-use practices. In order to improve the financial capacity of watershed protection businesses, private water users have to be involved.

PES markets can be discerned as: (i) compliance markets, i.e. public regulation requires the payment for the use of ecosystem services (e.g. mandatory carbon emission trading for certain industries); (ii) government-mediated markets, i.e. where the government is the intermediate party that collects payments from users and distributes them to the service providers (e.g. PES markets based on water services); and (iii) voluntary markets, i.e. in which companies voluntarily decide to compensate their impact on Biodiversity and Ecosystems by purchasing compensatory credits (e.g. voluntary carbon emission credits and biodiversity offsets) (Katoomba Group, and UNEP, 2008). The PES systems vary; they can regard payments by private water users to environmental agencies and NGOs (which contribute to ensuring the watershed protection), or direct payments by central government (which acts as user, provider or seller of the water) to private landowners who protect a watershed (Bishop et al. 2008).

The scarcity of water and water-related conflicts have played a role in setting up PES water schemes in Costa Rica and Colombia (Kiersch and Hermans, 2005). In Latin America, PES for watershed

⁴ An Interim Report, 2008. European Communities.

<http://ec.europa.eu/environment/nature/biodiversity/economics/pdf/teeb_report.pdf> accessed on 22 May 2010. The Economics of Ecosystem and Biodiversity (TEEB): Report for National and International Policy Makers, 2009.

<<http://www.teebweb.org/ForPolicymakers/tabid/1019/language/en-US/Default.aspx>> accessed on 2 May 2010.

⁵ See: <<https://engineering.purdue.edu/SafeWater/watershed/>> accessed on 12 September 2009.

⁶ This fund invests in small and medium-sized water projects in different parts of the world, <<http://www.evd.nl/zoeken/showbouwsteen.asp?bstnum=191524&llocation=>>> accessed on 8 November 2009.

protection has gained popularity (Landell-Mills and Porras, 2002).⁷ The projects are usually public schemes and supported by external financing by way of loans, grants and the expertise of international organisations, development agencies and NGOs. Some are constructed in the form of public-private partnerships (Tresierra, 2008; Martinez and Dimas, 2007; Martinez and Reyes, 2007).⁸ An example thereof is a PES system set up in Costa Rica, presented below.

Interesting new PES policy in Costa Rica in cooperation with energy company

The government of Costa Rica has developed a nationwide PES programme as a response to the country's rapidly increasing rates of deforestation. The ecosystem service providers, i.e. private owners of forest lands, are paid by the State and GEF funds⁹ as well as by water users including hydropower companies, for the maintenance of forest cover in watersheds. In 1996, Forest Law No. 7575 was enacted in order to legally set up PES schemes (Bennet and Henninger, 2008). The law provides a regulatory framework for the adoption of financial incentives for maintaining forest lands and a legal basis for the government to contract property owners to provide services originating from their land. One PES scheme is 'Energia Global'. This initiative is a public-private partnership between the hydropower company Energia Global (the main investor), the 'Government of Costa Rica Fund' (income source: mostly fuel tax revenues) and the National Fund for Forestry Financing (acts as intermediary). The ecosystem services that are being financed are: (i) the continuity of water flow for hydroelectricity generation; and (ii) biodiversity protection. Energia Global is heavily dependent on the storage of water. Two small reservoirs can only store an amount of water sufficient for five hours' generation. It is therefore fundamental for the company to increase the stream flow regularity, especially in the dry season, when prices for electricity production are highest. It is also important to reduce reservoir sedimentation.¹⁰ It was estimated that an increase in forest cover upstream will provide for these services. Energia Global's first focus was on water quantity increase; this was followed by water quality concerns. The company's ambition became to protect the basins that drain into the Rio San Fernando (1,818 hectares) and Rio Volcan (2,493 hectares), which feed their plants. Energia Global had calculated that its investment in watershed management would be a profitable venture if it would be able to obtain an extra 460,000 cubic meters of water. There are no records as to whether this goal was achieved.

PES: voluntary carbon sequestration: a potential aid for sustainable development and the protection of forests

Not only can PES be used for preserving water sources, it can also be used for the protection of forests through REDD and for providing farmers a better income. This will be explained in this paragraph.

The global demand for carbon sequestration is motivated by the Kyoto Protocol (Kyoto Protocol, 1998). Regional and national legislation have implemented policies and trading schemes. The market for carbon sequestration services has two bases: legislation¹¹ and voluntary initiatives.

Legislation requires companies to reduce their carbon emissions to the level of the permits annually allocated to them (credits). If a company exceeds such levels, it has to buy additional carbon credits on the carbon credit market. The total amount of permits issued cannot exceed the cap, limiting total

⁷ In 2002, in Latin America 18 PES water-related schemes were in place.

⁸ WWF has implemented a number of 'payment for watershed services' projects, e.g. in Guatemala, Peru, Indonesia and Tanzania. Source: Information Exchange Meeting WNF, the Netherlands, 3 March 2010.

⁹ Global Environmental Facility, see: <http://www.gefweb.org/interior_right.aspx?id=50> accessed on 1 April 2010.

¹⁰ Watershed Markets 'Costa Rica – Energia Global'

<http://www.watershedmarkets.org/casestudies/Costa_Rica_Energia_Global.html> accessed on 2 September 2009.

¹¹ The EU Greenhouse Gas Emission Trading System is based on Directive 2003/87/EC. In the US, the American Clean Energy and Security Act of 2009 can establish a similar cap-and-trade plan. Presently, this bill is in consideration in the Senate. See: <http://www.opencongress.org/bill/111-h2454/actions_votes> accessed at 23 May 2010.

emissions to that level (also called 'cap and trade' programmes). The cap is an enforceable limit on emissions that is usually lowered over time — aiming towards a national emissions reduction target. Failure to reduce emissions is often punishable by public law, e.g. by a fine that increases costs of production (Stavins and Robert, 1998). Carbon credits can be created and obtained for completing projects that cause a reduction of carbon emissions. Such projects can entail enhancing industrial efficiency programmes that result in lower emission levels. They can also constitute sequestration programmes, e.g. vegetation that absorbs carbon (planting trees). A company or even an individual can initiate a project that sequesters carbon in order to generate tradable carbon credits.

The **voluntary market** for carbon sequestration develops between private parties on a voluntary basis. Particularly in the US, it is well developed, e.g. reductions can be achieved through buying credits at the Chicago Climate Exchange (CCX). This system is based on voluntary membership; CCX emitting Members make a 'voluntary but legally binding commitment' to meet annual carbon emission reduction targets (usually a one per cent reduction per year). Those who reduce below the targets have surplus allowances to sell or bank; those who emit above the targets comply by purchasing so-called 'CCX Carbon Financial Instrument (CFI) contracts'. The Voluntary Carbon Standard Programme (VCS) provides a global standard and programme for the approval of carbon credits.¹² As forests and agriculture play an important role in carbon storage by storing carbon in plant matter and the soil, they can produce carbon credits. In 2008, VCS introduced a standardised approach for forestry and agriculture. REDD, i.e. 'Reducing Emissions through Deforestation and Forest Degradation', then became accessible to all market players. Land use projects including forestry and agriculture can now be validated and verified against VCS.¹³

Both the regulated and the voluntary dimension of the market for carbon sequestration services can entail either a bilateral project-based transaction between the company-buyer and the carbon credit-producer, or the offset can take place through trading credits in a carbon sequestration market. This is how a new market for payments for agricultural and forestry sequestration services has come into existence over the last decade.

Agriculture and climate change

Agriculture can play a major role in climate change mitigation: by reducing its own emissions and by increasing the storage of carbon in plants and the soil. Reductions would certainly make a difference because agriculture adds up "about one third of the total carbon dioxide emissions and is the largest source of methane (from livestock and flood rice production) and nitrous oxides (primarily from application of inorganic nitrogenous fertilizer)" (FAO, 2009). Certain agricultural projects are eligible for carbon credits ('PES from agriculture'). Presently, the efforts to use agriculture to reduce carbon emissions focus on 'above-ground sequestration', i.e. the absorption of carbon dioxide from the atmosphere through trees, plants and crops and ultimately storing it as carbon in biomass (Jindal and Kerr, 2007). Also reforestation can produce carbon credits. For example, when infertile lands are transformed into forest, growing trees sequester carbon dioxide from the atmosphere and store it as woody biomass and soil organic matter; as a result carbon is being sequestered. The new carbon market can aid farmers and landowners in receiving payments for land use practices that generate carbon offsets for the buyers. Yet, "around 100 megatons of carbon have been sequestered through voluntary payments to landowners in the framework of private-sector programmes, many of whom are in developing countries" (FAO, 2007).

¹² Originally, VCS was initiated in 2005 by the Climate Group, the International Emissions Trading Association and the World Economic Forum.

¹³ Voluntary Carbon Standards. See: <<http://www.v-c-s.org/181108redd.html>> accessed on 1 October 2009.

REDD

Deforestation is another important source of carbon emissions (Asner, 2008). One of the mechanisms created to address this is REDD. The idea is to generate carbon credits for maintaining existing forests. In this way, financial incentives will be provided to forest owners, companies or governments of developing countries for keeping their forests intact instead of logging them. The REDD initiative was developed in 2005 by a group of States that named themselves the 'Coalition of Rainforest Nations'.¹⁴ Two years later, the idea of REDD was taken up at the Conference of the Parties (COP) to the UN Framework Convention on Climate Change (UNFCCC) in Bali, i.e. COP-13.¹⁵ The plan was made to reach a REDD accord at the COP in Copenhagen in December 2009, i.e. COP 15, as a part of the larger post-Kyoto negotiations. It was not fulfilled (CBD Report, 2009).¹⁶ The trading potential of REDD credits depends very much on what a future REDD system will look like. However, despite the failure in reaching an international result in Copenhagen, REDD already has important implications. Currently, producing voluntary carbon emission credits from forestry projects constitutes one of the largest sectors in the voluntary markets (36 per cent of all voluntary transactions in 2006; VCS, 2009). The interesting potential of a voluntary REDD trading market is: (i) as an alternative for civil society and business for an international political agreement; (ii) as a crossing point between purely voluntary and pre-compliance carbon emission reduction efforts for companies that are moving towards regulatory caps, e.g. aviation companies in the EU; and (iii) because a demand for conservation credits is growing (preserving forests can generate conservation and carbon emission credits at the same time).¹⁷

In comparison to five years ago, when forestry carbon emission credits were generated almost entirely from reforestation activity, the forestry sector seems to be changing, particularly into REDD, but also to improved forest management practices.¹⁸ Market analysts suggest that buyers who purchase carbon credits on voluntary markets are willing to pay higher prices if there are co-benefits like biodiversity conservation (Ashford *et al* 2008; Hamilton *et al.* 2008). There are already examples of REDD projects that have been certified against the Climate, Community and Biodiversity Project Design Standards (CCB Standards).¹⁹

Interesting best practice in Brazil

One of them is **Juma Sustainable Development Reserve Project** in Brazil (Juma Project). Juma Sustainable Development Reserve in the Amazon Forest suffers from high deforestation caused by land conversion for agricultural practices and other economic activities. The Juma Project aims to stop the deforestation. It began in 2008 and is due to finish in 2050. The instrument used is the creation of financial mechanisms to generate carbon emission credits under REDD. The structure of the project is the following: (i) it is supervised by the Sustainable Amazon Foundation (Fundacao Amazonas Sustentavel), established in December 2007 by the Amazonas Government and the Brazilian Bradesco Bank; (ii) it is audited in accordance with the VCS by the German Tuv-Sud company; and (iii) the

¹⁴ REDD Monitor, NGO Networks news site, at <<http://www.redd-monitor.org/redd-an-introduction/>> accessed on 2 September 2009.

¹⁵ During the Climate Change Conference of 2007, the Bali Action Plan was drafted, at <http://unfccc.int/meetings/cop_13/items/4049.php> accessed on 10 September 2009. See Paragraph 1b(iii).

¹⁶ The Copenhagen negotiations resulted in a "Draft agreement of the Ad Hoc Working Group on Long-term Cooperative Action on reducing emissions from deforestation and degradation," 15 December 2009, at: <<http://www.carbonpositive.net/viewFile.aspx?FileID=170>> accessed on 1 February 2010.

¹⁷ The other important initiative is the Green Development Mechanism (GDM) 2010 Initiative. The GDM is a new financial structure at the global level to generate sufficient long-term resource streams to motivate owners of biodiversity-rich areas to exploit the area in a way which favours long-term conservation. The GDM will serve as an offset fund, which finances biodiversity enhancing projects, with a specific focus on activities in developing countries. For more information see: <<http://www.earthmind.net/bbb/gdm.htm>> accessed on 3 March 2010.

¹⁸ Forest News, Forest Carbon Markets Grows Despite REDD Barriers, 27 May 2009.

¹⁹ See: <<http://www.climate-standards.org/standards/index.html>> accessed on 2 September 2009.

project received the guidance of the Climate, Community and Biodiversity Alliance (CCBA, the body which sets the CCB standards). Finally, the resources generated by avoided carbon dioxide emissions through controlling deforestation will be invested in the Reserve. It is expected to improve the livelihoods of indigenous inhabitants (Case Study: Forest Now Org, 2008).²⁰

It can be argued that voluntary carbon sequestration through REDD and agricultural sequestration services represents an interesting innovative business approach because it can contribute to the mitigation of climate change, the conservation of biodiversity, and an equitable and sustainable development (REDD can direct financial flows to some of the world's poorest regions) (Brown and Bird, 2008).²¹ Furthermore, REDD supports a stabilisation of the rain required for a productive agriculture in a vast area around the preserved forests.

Energy companies

Considering the Earth Charter provisions, there are many of them that provide good advice to energy companies. As main areas can be discerned:

1. With the right to own, manage, and use natural resources comes the duty to prevent environmental harm and to protect the rights of people. (provision 2).
2. Avoid pollution, be careful and apply the precautionary principle. E.g., British Petroleum had obtained from the US government an exemption to perform an Environmental Management Assessment (EMAs) in regard to the Deep Horizon platform. A request for a categorical exemption is pending.²² Here seems room for improvement at the side of the company (and the government). How do other oil companies deal with EMAs? E.g. Petrobras?
3. Reduce the consumption of non-renewable materials. Stimulate reduction of such use. Do oil companies lobby with car companies for more efficient models?
4. Restore nature and ecosystems. Oil companies can restore nature after using it. Connected therewith, new business models are being developed: biodiversity offset programmes (Green Development Mechanism and BBOP). (Energy) companies can start using them today.
5. Invest in renewable energy sources such as water and sun. What is the level of investment by energy companies in these type of renewable?
6. Transfer technology, including about renewable, to developing countries.
7. Try to influence an equitable distribution within a country, avoid corruption and create transparency about the corporate conduct and its impact on the environment and the local people. What has been done and what can be improved? What about paying local taxes?

Nuclear energy. The EC states: Prevent pollution of any part of the environment and allow no build-up of radioactive, toxic, or other hazardous substances. How to interpret this?

²⁰ Concrete goals of the project are: (i) to generate carbon credits out of 189,767,027 tonnes of carbon emissions; and (ii) to avoid the degradation of 366,151 hectares of rainforest and hence the emission of 210,885,604 million tonnes of carbon dioxide into the atmosphere by 2050.

²¹ It is estimated that it can generate USD 53 billion per year for halving deforestation rates.

²² <http://www.washingtonpost.com/wp-dyn/content/article/2010/05/04/AR2010050404118.html>