Assessment of safeguarding policies related to CER purchases

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Executive Summary

The Clean Development Mechanism (CDM) is one of the trading mechanisms defined by the Kyoto Protocol. The countries that have committed themselves to reduce greenhouse gas emissions can use the credits generated by the CDM to comply with their commitments. Such credits are denoted Certified Emission Reductions (CERs).

The CERs are generated by concrete projects that reduce emissions. This can for example be wind power plants, energy efficiency measures or collection and destruction of methane from landfills. Because the CDM host countries are not legally obliged to reduce their emissions, an extensive system has been developed for estimating and measuring the emission reductions a project leads to. This system is governed by an independent body, the CDM Executive Board (EB) under the UN Framework Convention on Climate Change.

At the core of estimating how many credits one project should be rewarded, is the notion of additionality. According to the Kyoto Protocol, in order to qualify a CDM project should lead to emissions reductions that are additional, e.g. the project would not happen without the incentives created by the Kyoto Protocol. After a period of very rapid growth in the number of projects that apply for approval, the Executive Board has increased its scrutiny of projects they think might not be additional. This has particularly been the case for projects involving renewable energy.

Despite the fairly extensive system for calculation and control developed under the CDM Executive Board, additional measures to ensure the "quality" of CERs have been developed and introduced. For example issues addressed in the international negotiations under the Kyoto Protocol touch upon the issue of quality, i.e. positive/negative lists and the use of multipliers. However, during the negotiations there has been considerable opposition to introducing such measures and at the moment it appears unlikely that quality criteria will be developed under the Kyoto framework.

When this report was made, the European Parliament had suggested that each operator in the EU Emissions Trading Scheme (ETS) would be allowed to choose between the existing credit limit set in the allocation plans for 2008-2012, or the alternative limit proposed by the Parliament's environment committee (ENVI). The total number CERs and ERUs that can be used for compliance within the EU ETS in 2008-2020 will increase from about 1400 million ton (Mt) under the allocation plans to about 1600 Mt under the ENVIs new proposal. However, under the ENVI proposal only "high quality" CERs/ERUs could be used from 2013.

High quality in this context is not clearly defined but can be assumed to come from projects with "clear sustainable development benefits" and "no significant negative environmental or social impacts", and "originate from projects in countries which are contributing appropriately to global emissions reductions under a future international agreement which they have ratified".

The introduction of "high quality" requirements is an attempt to kill two birds with one stone: ensuring that a CDM project not only leads to emission reductions, but also fulfils other less tangible objectives such as "sustainable development" or support for renewable energy. It is somewhat of a paradox that the projects that will qualify as "high quality" CDM are the ones for which it is most difficult to demonstrate additionality. Many of the projects that are considered "low quality" on the other hand, are clearly additional. For example, "low quality" projects that reduce industrial gases such as HFC and N_2O do not have any financial benefits besides the revenues from the CER sales and would thus clearly not have happened without the incentives of the CDM.

Another attempt to safeguard the quality of CERs is the so-called Gold Standard. This is a quality label for CERs and ERUs that uses a number of safeguarding policies and applies strict assessment criteria for sustainable development benefits. Gold Standard credits have only generated 0.0005% of the CERs issued so far, and is expected to count for less than 2% of the risk adjusted volume to be generated through 2012. Consequently, no purchasing program or country is in a position to limit their investments solely to Gold Standard credits. It is expected that between 37 and 38 Mt Gold Standard credits will be available for purchase through 2012. As a comparison, the Norwegian purchasing program aims to purchase some 30-35 Mt, e.g. almost the full pipeline of Gold Standard credits.

In addition to the requirements for the EU ETS and the Gold Standard, quite a number of Government purchasing programs have a preference for certain project types, which are believed to be of "high quality". Moreover the World Bank assesses projects against specific safeguarding policies which it applies for all its projects. However, no programs purchasing credits for compliance, governmental or private, are restricted to Gold Standard only. Neither are there any major players among the purchasing programs investigated in this report, found to have investments only in projects expected to qualify as "high quality".

For the Norwegian Ministry of Finance, applying additional policies beyond what is safeguarded through the official approval procedures for CDM and JI projects will have consequences for the availability of credits, the average purchasing price and the average transaction cost. The current projection of Gold Standard supply makes this

unrealistic as an exclusive requirement in relation to the established volume objectives of the Norwegian purchasing program.

Total supply of credits expected to qualify as "high quality" is likely to exceed the Norwegian demand, although the actual quality requirements are not yet defined. However, limiting investments to projects expected to qualify as "high quality" is likely to increase the average purchasing cost per credit and will require higher transaction cost per credit. Current market prices indicate that using only high quality credits would increase overall prices by 10 to 15%, without taking into account the increased risk and transaction costs. Alternatively, if safeguarding policies are introduced without any additional funding, the overall volume that Norway would purchase would be reduced by at least 10-15%, compared to a situation where it does not introduce such policies.

Introduction of quality criteria will also lead to a segmentation of the market where some project types (high quality) will trade at a higher price than another category (low quality). Such segmentation could in principle lead to lower liquidity and hamper the functioning of the market, which in turn could reduce emission reductions. As long as each segment is large enough and represents a significant number of projects, such segmentation is not likely to significantly reduce the performance of the market. However, if a plethora quality systems are introduced, each with different standards it has the potential to significantly reduce the performance of the market and hence emissions reductions. For a small country like Norway, it would consequently make sense, if it chooses to apply such safeguarding policies, to adopt the same standards as for example the EU.

Applying specific safeguarding policies also requires significant administration and monitoring costs. An alternative to apply such policies on one's own projects would be to invest more through e.g. World Bank funds that have the systems already in place.

The discussion of CDM quality touches upon a recurring theme in the negotiations over an international agreement to combat climate change: What is the purpose of the agreement? Is it to achieve the largest possible reduction of greenhouse gas emissions at the lowest possible costs? Or is it to achieve more overarching goals, such as sustainable development? These were underlying conflict lines in Kyoto, and are set to be so also in the future negotiations over a post-2012 agreement. Obviously, one cannot meet both objectives at the same time; as this report illustrates, higher quality means higher costs, but not necessarily larger emissions reductions.

Chapter 1 Introduction

Norway has decided to become carbon neutral by 2030 by significantly reducing its own greenhouse gas emissions as well as purchasing carbon credits worldwide. This report provides an assessment of relevant standards and safeguarding principles in different segments of the global CDM and JI market. The assessment is designed to assist the Norwegian Government with strategic decisions regarding their own credit purchasing program as well as providing a sound basis for contributing to the debate on CDM reforms. The report is based on information available as of November 2008.

Chapter 2 provides an introduction to, and analysis of the policy debate surrounding safeguarding principles.

Chapter 3 contains a description of key principles for ensuring environmental integrity in offset markets.

Chapter 4 gives an overview of current government purchasing programs and the safeguarding principles they employ, as well as some examples of private sector initiatives.

Chapter 5 describes the Gold Standard.

Chapter 6 provides an overview of the main offset standards in the market for verified emissions reductions (VERs).

Finally, Chapter 7 analyses the volume and cost implications of employing selected standards and safeguarding principles.

Chapter 2 Policy background

Introduction

The EU ETS is by far the largest source of demand for CERs and ERUs generated under the flexible mechanisms of the Kyoto Protocol. EU policymakers have been among the strongest supporters of emissions trading in view of its ability to allow developed countries access to cheap emissions reductions in developing countries while simultaneously contributing to sustainable development. However, public perceptions of the CDM have not always been positive. Large volumes of credits (and profits) have been generated by chemical processing plants with little or no benefits for local people and there have been serious questions raised about the additionality of a number of other types of project. Understanding the EUs response at a policy level to these criticisms by introducing certain "safeguarding policies" is critical for helping the Norwegian government decide upon its own CDM policies. It is also important to model the potential implications of the EU proposals on the global supply, demand and price of CERs and ERUs.

This chapter starts by summarising the different proposals and analysing their potential impacts on the market. The proposals differ regarding the quantitative import limitations as well as the quality of the credits to be allowed into the EU ETS. We have also described whether and to what extent trading schemes outside the EU will affect the carbon credit market until 2022.

The debate on safeguarding policies in the European Union

Current EU policy

The so-called Linking Directive is an amendment to the Directive on the European Emission Trading Scheme describing how it is to link with CDM and JI markets pre-2012. It specifies that carbon credits from the following project are not eligible in the EU ETS:

- Nuclear projects
- Land use, land use change and forestry projects
- Hydropower projects above 20MW that do not comply with World Commission on Dams guidelines or similar guidelines[1]

On the 23rd of January 2008, the European Commission (EC) published its climate and renewable energy package. It included a proposal for revision of the EU Emissions Trading directive, which outlines the 2013-2020 period of the EU ETS.

The EU has committed to reduce emissions by 20% from 1990 levels by 2020 even if there is no international climate agreement from 2013 onwards. Without a "satisfactory"

[1] These guidelines apply only for entities covered by the EU ETS and not EU Member States. However, as will be described in Chapter 4 below, in practice the member states follow much the same approach.

and binding international agreement, the EU Commission proposes not to allow the installations covered by the EU ETS to use more CERs and ERUs than have already been granted to them for phase 2. This would mean that a maximum of 1.4 billion CERs and ERUs could be imported for compliance in phase 2 and 3 together (2008-2020).

The proposal from the European Parliament

On the 7th of October a vote in the parliament's environment committee (ENVI) on suggested changes to the emissions trading scheme was passed. From the original draft report that outlined 800 amendments to the proposal from the EU Commission regarding the EU ETS directive, 15 compromise amendments were eventually agreed upon. One notable amendment is to drop the use of the term "Gold Standard" offset credits, to be replaced by "high quality CERs/ERUs".

There is no clear definition of "high quality", however, according to the European parliament's proposal the CERs shall:

1. "represent real, verifiable, additional and permanent emissions reductions"

2. come from projects with "clear sustainable development benefits" and "no significant negative environmental or social impacts"

3. "originate from projects in countries which are contributing appropriately to global emissions reductions under a future international agreement which they have ratified"

4. have a high likelihood of being "accepted in other major emissions trading systems".

The proposal from ENVI gives each operator the opportunity to chose between the credit limit set in the phase 2 National Allocation Plans (NAPs) or an alternative method set by the ENVI committee. The committee's proposal would set separate credit limits for phase 2 and 3 of the EU ETS. The limit in phase 2 would be 6.5% of 2005 emissions, while the limit in phase 3 would be 4% of 2005 emissions. Together, this would amount to about 1400 Mt over the 2008 to 2020 period, similar to what has been proposed by the Commission. If all operators choose the alternative that gives them the highest limit (ENVI or Commission), the total import potential would increase from about 1400 Mt in the Commission's proposal to about 1600 Mt over the 2008-2020 period.

Moreover, ENVI stated that *non-ETS* sectors could use up to 1 percent of 2005 emissions per year for compliance purposes, down from 3 percent in the EC's proposal, giving a total demand for CERs/ERUs from non-trading sectors in the EU at 240 Mt over the 2013-2020 period. In total, the demand for CERs/ERUs in the 2008-20 period would then at maximum be 1840 Mt, according to ENVI's proposal. We do, however, expect most participants to choose the CER/ERU limit set in NAP 2, i.e. 1400 Mt over the 2008 to 2020 period, although the method set by the environment committee (ENVI) will give a higher limit for many operators. This is partly due to the qualitative restrictions from 2013 (see below), but also because the EC proposal gives a higher limit in the near end. The minimum demand for CERs and ERUs from EU would then be 1640 Mt.

If the EU, on the back of a new international climate agreement, should take on a 30% reduction target, the CER/ERU limit would be increased in both the ENVI and the Commission's proposals. The increase would be equal to 50% of the additional reduction effort in both cases.

Table 1 shows what the credit limit would be according to the two alternatives for the six largest countries in the EU ETS. For countries like Germany, Spain, Italy and France, the Commission's proposal will give a significantly higher import limit than the ENVI proposal, which on the other hand will be more favourable for operators in UK and slightly so in the case of Poland.

Table 1. Credit limits for the largest Member State

The last column indicates whether the ENVI proposal will increase or decrease the credit limit compared to the commission´s proposal.

	EC proposal (2008-2020)	**ENVI proposal**			
Country		Phase 2	Phase 3	2008-2020	Difference
Germany	453	158	155	313	- 140
Spain	153	62	61	123	- 30
France	90	44	44	88	- 2
UK	99	82	81	163	+ 64
Italy	151	73	72	145	- 6
Poland	105	68	67	135	+ 30
2008-2020 (total EU27)	1398	708	697	1405	+ 7

Note; the last row gives the total CER/ERU limit for all Member states, not only those included in the table. All numbers in Mt (total) for the respective periods (phase 23 and 2008-2020, respectively) assuming an overall EU reduction of 20%. A 30% reduction scenario would give higher limits under both methods

Ongoing trialogue negotiations

During week 43, the EU environment ministers failed to agree on a common position on the ETS review when they met at the Environment Council in Luxembourg. However, there is an emerging consensus among the Member States on key issues, and an agreement could be reached in the coming weeks. With regard to the CER/ERU import limit, a compromise proposal from the French EU Presidency sets the total limit to about 1550-1570 Mt over the 2008-2020 period. This proposal is supported by most member states. Moreover, it is also in line with many elements of the position already adopted by the EU Parliament and could thus emerge as a compromise between the two institutions.

The talks between Council and Parliament on a final agreement will start as soon as the Member States are able to agree internally on a negotiation mandate. The first meeting in the so called trialogue negotiations (involving the Council, Parliament and Commission) was held 6 November. To reach an agreement on the climate and energy package by the end of the year, a final compromise between these organisations will have to be reached by the end of November.

Selected other cap-and-trade initiatives and their links to the offset markets

The US

According to a draft of the Democratic Party's official platform, which was approved by a party committee in August, the party will set a target to improve energy efficiency by 50 per cent by 2030, which will be enabled by "dedicating a portion of the revenues generated by an economy-wide cap and trade programme." Although the platform does not outline details of what a cap-and-trade programme should include, Senator Obama's advisor Frank Loy said 16 September enacting a US cap-and-trade system is the first step the next president needs to take to deal with climate change[2]. It's very clear to him that the US has to lead, but he believes that leadership has to begin with action at home," said Loy, referring to his candidate[1].

Point Carbon's main post-2012 political scenario includes a new a cap-and-trade scheme in the US along the lines of the Lieberman-Warner bill. Since president-elect Barack Obama, submitted a letter of support for the bill, we have assumed it to be a suitable reference for possible reduction targets for the US. The original Lieberman-Warner bill allows the use of *US domestic offset credits* for compliance, limited to 15 percent of the national allocation. There also is room to import an additional 15 percent in "international emissions reductions'. Under the original bill international imports are restricted to allowances from other ETSs. However a new proposal has emerged to permit a small import of CERs, equivalent to 5 percent of the allocation. If the US ETS covers around 50 percent of national GHGs this equates to 150 million tonnes per annum. There are no qualitative restrictions on the type of CERs or ERUs that would be accepted.

Canada

The current federal climate plan of Canada sets an absolute emission reduction target of 20 percent below the 2006 level in 2020. The plan includes an intensity-based cap-and-trade scheme due to start in 2010. The Canadian plan allows unlimited use of domestic offsets. International offsets, such as CERs, may be used to cover up to 10 percent of each installation's shortfall. Again there are no qualitative restrictions on the type of CERs or ERUs that would be accepted.

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[2]Point Carbon (2008) Next US president must balance domestic, global climate policy: http://www.pointcarbon.com/news/1.972566

Australia

The coverage of the proposed Australia ETS is approximately 450Mt in 2012 declining to 270Mt in 2020, presuming the government's preferred positions in its Green Paper are passed into law. The Green Paper also proposes the use of international Kyoto offsets for compliance at levels that are supplemental to domestic abatement. Taking the current levels of CER imports in the EU ETS as an example, this would translate to around 20-40Mt of imports per annum. However, at current (early) market prices EUAs and secondary CERs are traded at 1.5 times higher than the AEU price. It is thus difficult to see how CERs and ERUs will flow to the CPRS if prices stay at this level.[3]

3 Point Carbon (2008) Carbon Market Monitor September

Chapter 3 Principles for ensuring environmental integrity in offset markets

Introduction

The main criticism towards many CDM projects is that they would have happened even in the absence of CDM (the additionality issue) and that they do not contribute to sustainable development, which is one of CDM's goals under the Marrakesh Accords (2001). In this chapter we give an overview of the mechanisms that exist to ensure that CERs and ERUs are issued only for emission reductions that are real, measurable, permanent, additional and not double-counted and what safeguarding principles are used to achieve sustainable development. We focus on the rules set by the UNFCCC while we in chapter 4, 5 and 6 include policies that go beyond the UNFCCC requirements.

Sustainable development

How the CDM projects should contribute to sustainable development in the host country is loosely defined within the Marrakesh Accords. Instead it is the prerogative of the host country to determine whether the project supports national sustainable development objectives. All projects are therefore screened according to a set of sustainable development guidelines by a Designated National Authority (DNA), the official host country body approving CDM/JI projects. During the planning of a CDM project, the people that will be affected by the project must be consulted. The proof that the people affected by the project have been consulted needs to be validated by a designated operational entity (DoE). The PDD also needs to be displayed on the UNFCCC or the DoEs webpage for 30 days during which time comments can be submitted. These comments are made publically available.

For JI host countries, the national authority approves the projects and issues the emission reduction units (ERUs). If it passes this screening test then the DNA also issues the Letter of Approval (LoA) needed for the registration of a CDM project. A project will need both a host country approval as well as investor country approval.

There are extremely wide variations in the strictness of sustainable development criteria and the manner in which they are interpreted in different CDM host countries. Some countries such as India and China have a reputation for giving only cursory importance to the criteria, whereas other countries such as Brazil, South Africa, Uganda and Morocco take these criteria more seriously and have been known to reject or temporarily withhold approval to project applications for this reason.

In effect governments must find a balance between their commercial interests and desire for foreign investment, versus their responsibility to serve the interest of local populations and the environment. More often than not it is the former that is given priority.

Measurable and quantifiable reduction

The baseline for a project activity represents forecasted emissions under a business-as-usual scenario, often referred to as the 'baseline scenario', i.e. expected emissions if the project activity were not implemented. The difference between the emission reductions from the project and the baseline equals the amount of credits that are generated.

Validation and verification

In order to assure that emission reductions have taken place an independent evaluation by an accredited third party is required. A CDM project can only be registered if it has been "validated" by a Designated Operational Entity (DOE) that performs an independent evaluation to confirm that the project meets the requirements set for CDM. Likewise, a DOE needs to "verify" that the emission reductions have actually taken place before CERs can be issued to project participants. Therefore, such third parties play a crucial role in safeguarding the quality of CDM projects.

Additionality

A project should only be able to earn credits if the GHG emission reductions produced by the project are additional to what would have happened in the absence of the carbon credit component. Additionality can pertain to a certain level of return threshold, technological benchmarks or other technological or political hurdles. The UNFCCC Executive Board, which supervises the CDM, has recently increased its scrutiny of additionality and put many projects under review or rejected them on this point.

Exclusivity (avoidance of double counting)

Projects in sectors covered by the EU ETS face potential problems with double counting: carbon credits could be issued for JI projects taking place at installations covered by EU ETS at the same time as these emission reductions could be traded as EU allowances in the EU ETS. In order to deal with this problem EUAs equalling the amount of ERUs to be sold under JI will be subtracted from relevant installations' accounts. A separate JI reserve had to be established in the National Allocation Plan for the period 2008 to 2012 of each Member State hosting or intending to host grid-connected clean energy projects that could cause double-counting by changing the baseline for installations covered by the EU ETS.

Chapter 4 Current governmental purchase initiatives

Introduction

In this chapter we present an overview of current CER/ERU purchasing policies and preferences applied by a number of governments as well as funds and privately held companies.

Special attention is given to the safeguarding policies of the Netherlands and the World Bank, for which we have done more thorough case studies.

Preferences of governmental and non-governmental programmes

Table 2. Preferences of various programmes

Country/ Institution	Programme	Preferred project types	Excluded project types	Preferred type of credit	Other
Austria	Austrian JI/CDM programme Budget (2003-2012) €399 million Run by Kommunalkredit Public Consulting Estimated volume purchased and planned: 45Mt	CHP Renewable energy Landfill Waste ENEF	Nuclear Hydro projects that do not comply with the WCD LULUCF not excluded but severely restricted	CERs ERUs	MoUs have been signed with several countries (20), but not a pre-requisite for purchase agreement A LoA is needed before agreement can be reached
Belgium	Belgian JI/CDM tender (second) National strategy to purchase 12.3 million emission reductions by 2012	Renewable energy ENEF	Nuclear LULUCF	CERs ERUs (JI track two only) Early credit AAUs from JI projects	2 phases: First phase: "Expression of interest" (i.e. initial screening) Second phase: "Project proposal phase"
Denmark	DanishCarbon.dk Budget: yearly earmarked fund of 100 million DKK Direct credit purchasing in selected developing countries Estimated volume purchased and planned: 16Mt	No	HFC23	CERs ERUs Early credit AAUs from JI projects	Three ways of purchasing credits: - tender - direct approach - carbon funds DanishCarbon.dk is close to reaching its target (of 16MtCO2e).

Finland	Finnder Launched in 2006, successor to the Finnish CDM/JI Pilot Programme Budget: Kyoto period €70million Post-2012: €30million Estimated volume purchased and planned: 7Mt	Renewable energy Landfill gas ENEF Industrial cogeneration Projects using an approved methodology	HFC23 CCS Hydro projects that do not comply with the WCD	CERs ERUs Early credit AAUs from JI projects	Currently 12 projects in portfolio, consisting of biomass, small hydro, wind, landfill gas and solar cooker Total contracted volume: 1.7MtCO2e
The Netherlands	The ERUPT tender and the ERUPT New Style programmes have been closed. The Netherlands is also buying credits through IFC, IBRD and CAF.	Landfill CMM Wind Biomass ENEF	Hydro projects that do not comply with the WCD		Currently: 23 JI and 4 CDM projects in 11 countries. Consists of renewable energy, ENEF, landfill, CMM Total contracted volume is 18,1MtCO2e Prefer projects at advanced development stage
Sweden	Swedish Energy Agency CDM/JI programme Budget: €33 million Separate budgets for CDM and JI Estimated volume purchased and planned: 5.7Mt	Aims at engaging in small and medium sized CDM and JI projects, mainly in the renewable energy and energy efficiency sectors.		CERs ERUs Early credits from JI projects (AAUs) also accepted	Strong focus on sustainable development Also investment in funds: PCF, TGF, EBRD-MCCF, ADB MoUs have been signed with several JI countries, but not a pre-requisite for purchase agreement
World Bank	The World Bank Carbon Finance Unit The World Bank administers nine carbon funds and facilities through the Carbon Finance Unit, leveraging public and private investment for projects to reduce greenhouse gas emissions	Fund specific preferences	Fund specific limitations	CERs ERUs VERs Also buys post-2012 reductions	The World Bank acts as a trustee for governments and private sector entities through managing ten funds with a capitalization of close to two billion dollars to purchase credits from CDM/JI projects. Italy, Spain, Denmark, and the Netherlands have national purchase funds administered by the World Bank.

European Bank of Reconstruct-ion and Development (EBRD) and European Investment Bank (EIB)	Multilateral Carbon Credit Fund (MCCF) Launched in Dec06 Consists of: 1) The Project Carbon Fund (€150 million from six countries and six companies) 2) The Green Carbon Fund (€40 million, and dedicated to GIS)	Renewable energy Fuel switch ENEF Waste Transport		ERUs CERs AAUs (through GIS)	
Asian Development Bank (ADB)	Carbon Market Initiative: Asia Pacific Carbon Fund (APCF) Operational May07 Commitment: $151.8 million Co finances CDM projects in its developing member countries	CMM Waste (landfill, waste incineration) ENEF Renewable energy (not large scale hydro)	LULUCF	CERs	Participants: Belgium, Finland, Luxembourg, Portugal, Spain, Sweden and Switzerland

Source: Point Carbon

Government Purchase of AAUs

Few governments (with Japan as a notable exception) have shown an interest in purchasing AAUs that are not linked to verifiable emission reductions from project activities. The reason for this is that AAUs that are not greened through so called green investment schemes (GIS) are perceived as lacking environmental integrity ("hot air"). Large volumes of surplus AAUs can potentially be sold by countries with economies in transition in Eastern Europe. However, several governments have accepted AAUs as a proxy for early (pre 2008) crediting for emission reductions from JI project. Norway has done so through its participation in the TGF fund managed by NEFCO. The question of whether or not sovereign purchasing initiatives have accepted AAUs linked to JI projects is less relevant today as the crediting period for JI projects has now started.

Government Purchase of high quality CERs

None of the sovereign purchase programmes have declared that they intent to purchase only GS CERs. However, many of the programmes seem to have a preference for renewable energy and energy efficiency projects, which is in line with the guidelines set out by the GS foundation. All of the above purchasing programmes except the World Bank has preferences for certain project types or excludes certain types.

Case study 1. Safeguarding policies of the Netherlands

Background

The Netherlands, which was one of the first countries that earmarked public funding for buying emissions reductions through CDM. The Dutch DNA (Ministry for Housing Spatial planning and the Environment; VROM) is responsible for the implementation of the programme.

Project types not eligible for the Dutch CDM programme

Examples of projects not eligible for financial support of the Dutch CDM programme:

- Afforestation and reforestation projects
- Projects related to nuclear energy
- Projects that are not cost-effective for the Netherlands
- Projects which may result in severe damage on biodiversity or on social livelihood.
- Hydropower projects with generation capacity exceeding 20MW and do not have a declaration specifying that the recommendations of the World Commission on Dams will be respected.

Case study 2. Safeguarding policies of the World Bank

Background

The World Bank Carbon Finance Unit (CFU) uses money contributed by governments and companies in OECD countries to purchase CERs and ERUs. The emission reductions are purchased through one of the CFU's 12 carbon funds.

Safeguarding Policies

The experience and the size of the organization enable the Bank to use relatively specific safeguarding policies. The safeguard policies apply to all World Bank operations to ensure that they are environmentally and socially sound. The project must be consistent with these safeguard policies and the host country's overall sustainable development framework. The safeguarding policies include:

Environmental assessment policy which is considered to be the umbrella policy for the Bank's environmental "safeguard policies" which among others include:

- Natural habitats: The Bank must not support projects which would lead to significant loss or degradation of any Critical Natural Habitats
- Forests: Three pillars guide future Bank involvement with forests, which are;
    - Harnessing the potential of forests to reduce poverty
    - Integrating forests in sustainable economic development, and
    - Protecting vital local and global environmental services and forest values.
- Pest management: If pesticides have to be used the Bank-funded project should include a Pest Management Plan. Physical Cultural Resources: Adverse impacts on cultural resources should be avoided, or mitigated.
- Safety of dams: When the World Bank finances new dams, it requires experienced and competent professionals design and supervise the construction, and that the borrower adopts and implements dam safety measures through the project cycle. The policy also applies to existing dams where they influence the performance of a project. In this case, a dam safety assessment should be carried out and necessary additional dam safety measures implemented.

Social safeguarding policies

- Identification of indigenous people: Indigenous people need to be consulted, and it must be ensured that they participate in, and benefit from Bank-funded operations. Adverse impacts should be avoided, or where not feasible, minimised or mitigated.
- Involuntary resettlement. The policy aims to avoid involuntary resettlement to the extent feasible, or to minimise and mitigate its adverse social and economic impacts.
- Disputed areas. The Bank will only finance projects in disputed areas when either there is no objection from the other claimant to the disputed area, or when the special circumstances of the case support Bank financing.

Funds with Separate Safeguarding Policies

Community Development Carbon Fund

The World Bank's CDCF supports projects that combine community development attributes with emission reductions to create "development plus carbon" credits, and will significantly improve the lives of the poor and their local environment.

Bio Carbon Fund

The Bio Carbon Fund can consider purchasing carbon from a variety of land use and forestry projects; the portfolio includes Afforestation and Reforestation, Reducing Emissions from Deforestation and Degradation and is exploring innovative approaches to agricultural carbon.

An assessment of key buyers

Table 3. Project types for the most prominent buyers (based on involved volumes)

Player	Role	Country	Projects involved in (number)	Renewable (excluding hydro above 20MW) and energy efficiency	HFC, N2O or hydro above 100 MW	Other (Waste, fugitive emission etc)
Enel Trade S.p.A.	Utility	Italy	100	X	X	X
ORBEO	Financial	France	17	X	X	X
Mitsubishi Corporation	Financial	Japan	109	X	X	X
Fortis Intertrust	Financial	Netherlands	11	X	X	X
Mitsui & Co., Ltd.	Financial	Japan	53	X	X	X
Noble Carbon Credits	Financial	Ireland	53	X	X	X
Tokyo Electric Power Company (TEPCO/TEPSCO)	Utility	Japan	50	X	X	X
Endesa	Utility	Spain	39	X	X	X
EDF Trading	Utility	United Kingdom	122	X	X	X

- As seen in table 4 above, all of the most prominent buyers are involved in projects from all the project types defined in the table.

Examples of private sector preferences

Numerous private sector entities have employed specific standards or safeguarding principles when purchasing carbon credits, or when offering such credits to their clients. Some examples follow below.

Compliance Funds

Gold Carbon Capital Fund was launched by South Pole Carbon Asset Management and AIL Structured Finance. The fund is aimed at large compliance buyers and large institutions investing their own capital. Target size is €130 million–150 million in first tranche. The secured capital as of June 2008 was €100 million. 70% of projects are expected to be GS CDM with a minimum of 50% being GS.

KfW Bankengruppe has set up the KfW Carbon Fund in cooperation with the Federal German Government in order to purchase emission credits from JI and CDM projects. German and European enterprises are invited to participate in the programme in order to acquire certificates for their own use. The fund aims to buy up to 100,000 GS certificates to be issued in 2009, 2010 and 2011 with a minimum volume per agreement of 20,000 t CO2. The volume of GS credits is small in relationship to the fund's portfolio.

Voluntary Funds

Merrill Lynch planned to offer its retail and commercial clients voluntary carbon credits from a massive Indonesian avoided deforestation project that could yield up to 100 million metric tonnes of offsets over 30 years. The project is certified by CCBA. As Merrill Lynch recently was sold to Bank of America, which does not trade with carbon credits, the future of the credits is uncertain. Merrill Lynch is also involved in other project types.

MyClimate is an NGO that sells "high quality" and GS credits to private individuals to offset their emissions related to travelling, electricity consumption etc. The credits are from the substitution of fossil fuels with renewable energies or by means of energy efficiency measures (energy saving measures or the use of efficient technologies) and in some cases the reduction of methane emissions. MyClimate cooperates with Virgin Altantic First Choice etc.

Chapter 5 Description of the Gold Standard

Introduction

In this chapter we give an introduction to the Gold Standard and explain how the project criteria, validation and verification procedure differ from the normal CDM project. As demand has been strong for GS credits they are traded at a premium price. We analyse what motivates a buyers to pay a higher price for these credits. As of the 1st of August a new version of the GS became valid and we have highlighted the major differences compared to the first version and analysed how we believe this will affect the supply of GS credits.

History, purpose and principles

One of the purposes of the Clean Development Mechanism (CDM) as stated in the Kyoto protocol is to assist the host country in achieving sustainable development. However, CDM has been criticised for not fulfilling this purpose. The GS label was initiated 2003 by WWF, SSN and Helio International as a quality label for carbon credits, with the aim to promote CDM projects with high contribution to sustainable development and to increase the focus towards these aspects. The GS label is today the leading quality label for CERs as well as voluntary offset credits. It is a Non profit organisation that is supported by over 60 NGOs/charitable organizations. At the 30th of July 2008 the second version of the GS was released.

The key principle is that the rules of the CDM should be applied to the GS CDM and VER projects unless GS requirements are stated otherwise or go beyond these rules. GS CDM projects have to fulfil extra criteria for compliance described in the GS Toolkit, including:

- Eligibility criteria

The GS has restrictions that only allow credits from renewable energy supply or End-Use Energy improvement project activities. The project must reduce Carbon Dioxide (CO2), and/or Methane (CH4) and/or Nitrous Oxide (N2O). The eligibility of hydro power plants with a capacity above 20 MW is assessed on a case by case basis

- No projects that have publicly announced that it is going ahead without CDM.
- Compliance with the UNFCCC's Additionality Tool for project of all types and scales

- Project must not use ODA funds

ODA[4] funds are not permitted for use under the condition that the credits coming out of the project are transferred to the donor country "A clear and transparent financing plan

[4] The definition of ODA that GS is using is taken from OECD the following. " financial flows to developing countries and multilateral institutions; Provided by government agencies whose main objective is the

must be completed and submitted during validation so that the validator can assess compliance with these requirements. Project proponents are also required to submit a written declaration of the project's Non-use of ODA, as well as written declarations from the financiers of the project."[5]

- **Other Certification Schemes**

If the project claims Green or White Certificates, or equivalents, it is not eligible for registration under the GS unless it can clearly demonstration that no double counting would arise from the issuance of GS carbon credits.

- Additional requirements for the stakeholder meetings.

One physical stakeholder meeting most be held were invitations to participate must be sent to local politicians, GS supporting NGOs and local people that are directly affected by the project. At least one of the meetings should be held in the local language and a local expert should assist the DOE when deciding if the stakeholder consultation has been adequate.

- The projects contribution to sustainable development

The contribution to sustainable development is partly assessed by a "do no harm" assessment where the project proponents shall assess their project against safeguarding principles of the UNDP. These principles are derived from the Millennium Development Goals[6]. If there is a perceived risk that the project might breach one of the safeguarding principles, the developer must determine how this risk can be best avoided/ minimised and note this down as a mitigation measure. It is up to the validator to decide whether the mitigation measures taken are enough and report this in the validation opinion which advise the GS foundation if the project should be registered or not.

In addition to the "do no harm" assessment a sustainable development matrix needs to be filled in where the project developer scores the projects against environmental, social, and technological and economic indicators. The matrix should be consistent with the results from the stakeholder meetings. The Matrix is based on the methodology developed by Helio International and members of the South South North network[7].

The scores range between -1 and + 1. If a project scores 'negative' then it is only eligible if the project participants have developed mitigation measures which are included in the

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economic development and welfare of developing countries and that are concessional in character, conveying a grant element of at least 25%.

[5]Gold Standard Toolkit 2.0 July 2008
http://www.ecofys.com/com/publications/documents/GSV2_ToolkitChapters_2008731_2.0.pdf

[6] http://www.un.org/millenniumgoals/
ospooooooooo

[7] The sustainable development matrix and other tools for ensuring environmental integrity are contained within the Gold Standard Passport Template, available here http://www.cdmgoldstandard.org/materials.php

Sustainability Monitoring Plan. Indicators scoring positive also need to be monitored. The second version of the GS has introduced a stricter method for the scoring of the sustainable development matrix and how it should be validated. This can facilitate easier comparison between different projects contribution to sustainable development.

Differences in validation and verification procedures

The GS validation/verification may be carried out in parallel with the UNFCCC validation/verification. A site visit by the DOE is required.

In addition to the PDD, a GS project is documented in what is called a "passport" in the second version of the GS and in a Local Stakeholder Consultation report. The Passport includes a description of GS specific criteria such as sustainable development matrix and a do no harm checklist.

To enhance the transparency of the validation, a work plan for the validation is shared with the GS. The work plan must include certain elements to show for e.g. relevant experience from the host country.

"Any UNFCCC DOE or AIE accredited for the appropriate scope may validate or verify a Gold Standard project, however the Gold Standard recommends selecting a DOE or AIE that has affinity with the Gold Standard values"[8]

Micro scale projects are given the option between two ways of validation

1. Contract a DOE like for any other project;
2. Opt for a GS internal validation

The intention of these alternatives is to reduce the validation cost, which is a large barrier, for micro scale projects. Micro scale projects can apply to the validation fund to cover part of the cost for validation. However, they are not guaranteed to receive financing for validation from the fund and with the risk for high validation cost remaining it is unlikely that we will see a large boost in the amount of micro scale projects.

Registration

The GS registry is an administration tool for both UNFCCC and VER projects that have an approved account by the GS foundation. Approximately 100 projects are mature enough to be publicly posted in the registry. The registry, enables trading of GS VERs and CERs and manages the full lifecycle of a carbon credit, including creation, serialization, transfers, and retirement.

GS CDM/JI fees

The GS will conduct a pre-feasibility assessment on whether the project complies with the GS criteria. The fee for this is 0.10 USD/ credit for one year of anticipated average emission reductions. GS also has a registration fee of 0.05 USD/ credit for the anticipated amount of emission reductions certified after the 1st verification

[8] Gold Standard Toolkit 2.0 July 2008

Key changes in the version 2 of the Gold Standard

Format changes that might affect the supply of GS credits

According to the GS, the upgraded version responds to increasing market demand for a faster pipeline for premium carbon offset projects.

"The Gold Standard Version 2 (GSV2) combines the certification requirements for the voluntary and compliance market into a single manual, and introduces a separate "Toolkit" with examples, templates and detailed guidelines for project applicants. The GSV2 improves the transparency of the validation and verification process; requires project validators and verifiers to make site visits, streamlines Gold Standard specific documentation into fixed templates and aligns terms with the UNFCCC"[9]

Less documentation in the version 2 of the GS and other formatting changes should ease the workload of the GS foundation which should allow the secretariat more time analysing and approving projects, thus improving the efficiency of the organization. The clearer guidelines and the streamlined documentation might also reduce the perceived hassle of developing GS projects which has been a barrier for developing projects according to the GS requirements.

Content changes that affect the supply of GS credits

- One of the changes in the new version of the standard is regarding the eligibility of hydro power plants. In the first version, hydro power plant with a capacity above 15 MW were excluded. In the new version, plants up to 20MW are eligible. Bundled projects with many individual plants below 20 MW are also eligible. Projects bigger than 20 MW will be assessed on a case by case basis, and could thus be eligible for the GS.

- In the second GS version, instructions for JI projects have been added. At the 15th of September, a month and a half after the second version became affective, none of the 59 projects listed at the GS registry were JI projects. It is difficult to estimate how many JI projects that will be developed under the GS

- Another change is that Programmes of activities[10] (PoA) for the compliance and voluntary market are now accepted for GS registration. PoA projects are still in a start up phase but it could potentially increase the supply of GS credits since they are well suited for energy efficiency projects such as switching to more energy efficiency light bulbs. These types of projects fits the eligible criteria for the GS, have strong additionality since carbon credits are often the only revenue from the project and they also bring strong sustainability benefits as the light bulbs are typically distributed free of charge to poor people. Therefore many PoAs are very well suited for GS.

[9] Source: The GS.V2 Launch Press release

[10] A voluntary action, implementing a policy, measure or stated goal, managed by a public or private entity, and which results in emission reductions or removals that are additional. A PoA can last for 28 years. Sub activities – or CDM programme activities (CPAs) – can be added at any time during this period.

"Programme of activities definitely is an instrument that would facilitate participation of small activities in a continent like Africa. It lowers the transaction costs associated to validation of projects," Daniele Violetti, team leader of CDM registration and issuance at the UN climate secretariat, told Point Carbon. Energy efficiency and renewable energy are areas that have big potential for programme of activities," However, he pointed out that a PoA project has yet to be registered as CDM, because it is a relatively new instrument.[11] However, more than a year after agreement on the PoA rules only 4 PoAs are undergoing or have undergone the public comment period. The deadlock is due to prohibitive rules, especially the liability of validators for the whole PoA over the entire duration. A change of rules is a necessary condition for unlocking the potential of PoAs. While many of the projects in the GS pipeline are relatively small, PoAs have potential to generate large amounts of credits. During the 28 year lifetime of the PoA, sub-activities can be added at any time. A PoA does not have any geographical limits and could in theory be a project covering several continents. An example of a large PoA project in the pipeline is a project in Mexico which could generate 810 000 credits annually[12]

- Projects can register retroactively to the GS and earn GS credits for the emission reductions between the date of UNFCCC registration and the date of GS registration with a maximum limit of two years.

- Rejected CDM projects can apply for GS VERs

- New additionality tool applications will be accepted for the voluntary market.

What are the motives behind the purchase of GS credits?

So far only projects totalling 750 000 pre 2012 GS CER credits have been registered and even if all these credits are issued, it would barely make a dent in the efforts of a government looking to fulfil its Kyoto obligations.

Only one project has issued GS CERs thusfar. The buyers of these credits include a government, companies, and foundations as well as an NGO who in turn sell the credits as a mean for private persons intending to offset their emissions. There is no official registry that displays the amount of GS credits purchased by each of these buyers. However we believe that the motives differ between the three categories of purchasers described below.

[11] http://www.pointcarbon.com/news/1.966729

[12] http://www.pointcarbon.com/news/1.951527

1. Compliance buyer

GS credits have only generated 0.0005% of all issued CERs meaning that it is not a realistic safeguarding strategy to buy only GS credits to fulfil Kyoto commitments. Instead, the credits are bought because of their contribution to sustainable development and accordant marketing potential.

2. Company voluntary offsets

In general, credits purchased for voluntary offsets are often used for marketing purposes. GS is recognised as the highest quality standard for CERs and VERs which makes it attractive for companies to be associated with the standard. It is thus likely that the credits to large extent are used by companies who market their carbon offset programme.

3. Private voluntary offsets

This category consists of private persons who receive credits from the projects while offsetting a flight trip etc. MyClimate is a NGO who buys GS credits and in turn sell them to private persons. The purchaser's motive is thus likely to offset their emissions and not driven by any commercial interests. When offsetting with MyClimate you normally receive credits from their portfolio including both CERs and VERs from GS projects as well as non-GS projects. The purchaser normally does not require knowing from which project the credits are generated.

Prices for GS credits

Jasmine Hyman, marketing director of the GS Foundation said in July that GS CERs had been trading at a 15-20 per cent premium compared to normal CERs in the past but that the prices difference was shrinking[13].

At current Point Carbon primary prices this would translate to the following:

Table 4. Current primary prices for CERs and typical primary prices for GS CERs

Valid from	Category	Description	CDM price	GS price (plus 15%)
07.11.2008	1	The project is still at concept/prospect stage	8.50-14	9.78-16.10
07.11.2008	2	The project has developed a PDD and submitted for validation	10.00-12.00	11.50-13.80
07.11.2008	3	The project has been registered by the EB	13.00-14.00	14.95-16.10
07.11.2008	4	The project has been issued with CERs	14.00-15.00	16.10-17.25

It is likely that the price premium for GS credit prices has been shrinking because of the increased stringency of EB approval of CERs and the perception that CERs from newly

[13] Point Carbon (2008) Gold Standard projects to cut 15 million tonnes of CO2e per year http://www.pointcarbon.com/news/1.969179

registered projects are of a higher quality than one or two years in the past. So far the volumes of GS credits generated has been low and typically there have been many buyers from each project. The price per credit has often varied depending on the transaction size which makes it difficult to set the premium for GS credits.

The supply of GS credits is currently increasing drastically. The price development when the supply increases is theoretically a decrease in prices. However, not all project developers believe that this will be the case for GS credits. As more credits becomes available GS becomes a more realistic alternative for compliance buyers and the ruling out of GS as an option due to lack of available credits would decrease. On the voluntary market Hyman noted that her organization's projects tend to fetch at least 50 per cent more than CCX offset projects and $1-2 per credit more than VCS projects.

Meanwhile, Dutch sustainable project developer, OneCarbon, said in July that implementing GS criteria puts prices in the €12-14 range compared to other issued VERs in the €5-8[14].

Max Horstink, senior specialist with OneCarbon expects the current price difference will hold for VERs because in his view projects generating high quality credits will always be generally seen as more credible and reliable than regular projects. "There will be a premium for CERs as well, but that will be much lower than for the voluntary market equivalent", Horstink added.

Unless a new systems or new rules on existing schemes will be more stringent and only allow GS credits Point Carbon believe that the premium for GS credits will be around 10% during the next years assuming that also non-GS credits will be allowed in the EU ETS post 2012.

[14] Point Carbon (2008) Gold Standard projects to cut 15 million tonnes of CO2e per year http://www.pointcarbon.com/news/1.969179

Chapter 6 Offset standards in the VER market

Introduction

In the first part of this chapter we give a short presentation of the voluntary market. In the second part we describe and compare in more detail the different standards we believe to be the most important in this market. Finally, we describe the market development and give some explanation to the trends in the voluntary market.

As shown by a survey performed by Ecosystem Marketplace and Carbon Finance the most important sourcing criteria for the voluntary carbon buyers during 2007 was additionality followed by certification and environmental benefits. To meet the variety of demands a lot of different standards are available for the voluntary market.

Offset standards in the voluntary market

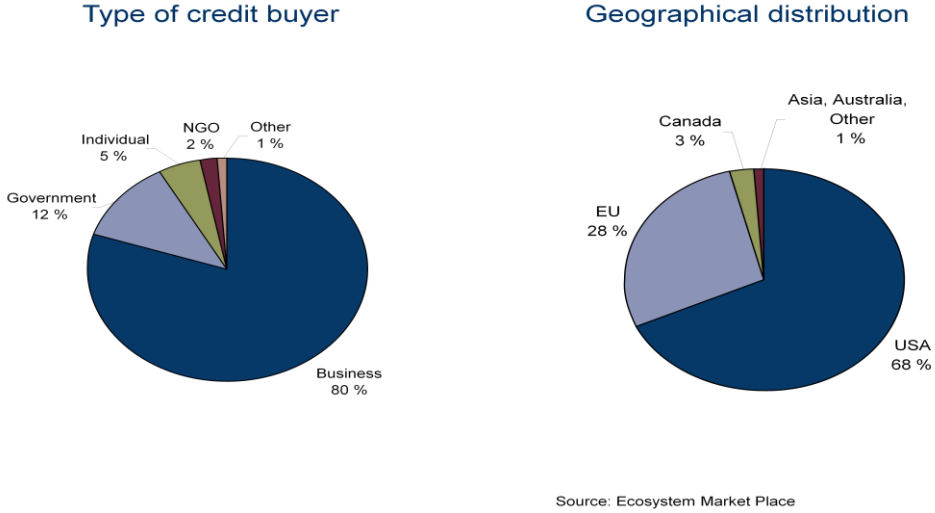
We have chosen to focus on the following standards, which are the most common and widely respected standards in the market place.

- Carbon Financial Instrument (CFI)
- Voluntary Carbon Standard (VCS)
- VER+
- Gold Standard VERs (GS)
- Climate, Community and Biodiversity standard CCB

Buyers and sellers in the voluntary market

Incentives for participating in the voluntary market are diverse. Besides being used for voluntary offsetting of emissions, there is also a demand for voluntary credits which is based on the expectations that these will be accepted by a US cap-and-trade programme. This can explain that most buyers are large US businesses, as shown in the figure 1 below.

Figure 1. Voluntary emission reductions: Typical buyers (March 2008)



Source: Ecosystem Market Place

Comparison and description of different voluntary standards

Carbon Financial Instrument Contract (CFI)

Founder/sponsor	Chicago Climate Exchange (CCX)
Launch/development stage	Launched trading in 2003
Type of projects authorised	Methane (agricultural, landfill, coal mine) CO2 (agricultural soil, forestry, renewable energy, rangeland soil, energy efficiency) Projects must go beyond business as usual, have started recently and be among top performers in the industry
Registry	CCX

CFI

- Voluntary to sign up, mandatory reductions for members.
- Trade CFI = 100t/CO2e
- CFI contracts are comprised of Exchange Allowances and Exchange Offsets. CCX CFI contracts, irrespective of source, can be used for meeting CCX reductions targets by CCX members.
- Must be a member to trade (buy/sell)
- In CCX's first trading period, which ran from 2003 through 2006, participants committed to reduce their emissions by a minimum of 1 per cent per year from the baseline. In the 2007-2010 period they have committed to a 10 per cent reduction below average baseline (1998-2001)
- CFIs are standardised contracts that incorporate a variety of emissions reductions products. As a result, buyers of CFIs do not exactly know where the emissions reductions of the CFI originate.
- Prices are low due to low stringency of compliance requirements.
- Offset projects can be registered by members, offset providers and offset aggregators.
- A large majority of projects are US based
- Initial third party verification followed up yearly. Site visit is not mandatory.

Voluntary Carbon Standard (VCS)

Founder/sponsor	International Emissions Trading Association The Climate Group World Economic Forum
Launch/development stage	V1 released March 2006
Type of projects authorised	All project types acceptable
Additionality test	Must go beyond legal requirements plus 1 of 3 tests: barrier analysis; performance standard; positive list
Registry	VCU registry or VCS approved registry

VCS

- The VCS is a global standard applicable to all project types in all jurisdictions.
- Reductions should be real, measurable, permanent, additional, independently verified, and not double-counted.
- Additionality: In addition to using a VCS Program approved methodology; the project proponent shall demonstrate that the project is additional using one out of three additionlity tests.
- Other GHG Programs that meet the VCS criteria can be approved under the VCS Program.
- New methodologies can be accepted after confirmation from two independent parries that the methodology meets the requirements of the VCS.
- Verification must be performed by verifiers accredited through VCS approved accreditation bodies (ISO 14064/65).
- All VCS projects are publicly displayed on the VCS project database. The project database is under development and will be launched by the end of November 2008.
- All Voluntary Carbon Units are issued, held and cancelled in VCS registries. The registries are expected to go live in November 2008.
- VCS expects to issue between 10 and 20 million credits by the end of the year, a VCS representative told Point Carbon in the beginning of October[15]

[15] Point Carbon (2008) VCS registry launch delayed http://www.pointcarbon.com/news/1.980290

VER+

Founder/sponsor	TÜV SÜD 3C Consulting
Launch/development stage	Summer 2007
Type of projects authorised	Same as United Nations
Additionality test	UNFCCC tool (must prove that the project is financially additional)
Registry	Blue registry

VER +

- VER+ is restricted to project activities that could qualify as JI activities without limitation to the status of the host country (Annex 1, non-Annex 1, or non-ratification).
- Crediting period: Can apply for a starting date as early as 1 Jan 2000 if it can be documented that the project has been initiated in order to mitigate climate change.
- Only CDM/JI methodologies allowed.
- Validation and verification needed. For retroactive projects validation and verification can be done at the same time. Otherwise validation is needed before registration.
- Projects that are registered under other schemes (ex. CDM) may apply for VER+ for time periods outside the crediting period of corresponding schemes.
- Projects are registered by TÜV SÜD's certification body and the VER+ credits are registered in TÜV SÜD's BlueRegistry
- Projects' additionality shall be tested according to the tools and guidelines defined for corresponding project activities under the Kyoto Protocol
- Double counting is avoided through a confirmation of the Designated Focal Point (DFP) of the host country that the equivalent amount of AAUs will be frozen on the country's account and not used in IET activities.

Gold Standard VER (GS)

Founder/sponsor	The Gold Standard Foundation (endorsed by around 60 NGOs worldwide)
Launch/development stage	VER standard launched in May 2006 (CDM standard launched in 2003)
Type of projects authorised	Renewable energy and energy efficiency only
Additionality test	UNFCCC tool
Registry	Gold Standard online database

GS VER

- Only renewable energy projects with limitations for hydro plants above 20 Mw and energy efficiency projects are eligible (for further details see chapter 5)
- GS uses the same verification system in the voluntary market as for CERs/ERUs.
- Special requirements for validation and verification that go beyond CDM
- GS has more focus on stakeholder consultation and sustainable development.
- GS VER projects can be done in a country that has not taken on a quantitative target under the Kyoto protocol.
- GS VERs are registered in the GS registry

Climate, Community & Biodiversity (CCB)

Founder/sponsor	**The Climate, Community & Biodiversity Alliance (CCBA)** CARE, Conservation International, The Nature Conservancy, Rainforest Alliance, Wildlife Conservation Society, BP, Intel, etc.
Launch/development stage	10 May 2005
Type of projects authorised	Land use, land use change and forestry
Additionality test	Various approaches acceptable: financial, political barriers, common practice etc
Registry	CCB online database

CCB standard

- The CCBA is a global partnership of research institutions, corporations and environmental groups, with a mission to develop and promote voluntary standards for multiple-benefit land-use projects
- Geographical scope: can be used in developing, developed or emerging economies,

- Projects are scored against 23 criteria, which relate to e.g. climate, community and biodiversity issues
- The project does not need to fulfil 8 of the criteria but the project is given additional points if they are fulfilled. Apart from standard approval projects can receive silver or gold rating depending on their scoring.
- In February CCBA certified a project to conserve tropical forests in the Indonesian province of Aceh which could generate 3.4 million credits annually.
- Prices from avoided deforestation projects are expected to increase if avoided deforestation becomes accepted as part of the post 2012 Kyoto system.
- Third party certification is required. So far only TÜV SÜD, DNV and the Rainforest Alliance have certified projects.
- Projects that have been, and are currently being, audited under the Climate, Community & Biodiversity Standards are listed on the CCBA homepage where the projects are open for public comments for 21 days.

Comparative Analysis of Different Standards

Here we assess each of the chosen standards according to their likelihood of surviving into the future, environmental integrity and associated prices per credit.

Table 5. Regulatory risk for the different standards

Standard	Staying power*	Maturity**
CFI	Good	Good
VCS	Good	Ok
VER+	Ok	Poor
GS VER	Good	Ok
CCB	Ok	Ok

*A standard with high staying power is very likely to be available and widely eligible by the end of 2012.
**A mature standard has been operative for more than 2 years, its rules are approved, and they have remained largely unchanged last year

Table 6. Environmental integrity and reputational risk

Standard	Environmental integrity
CFI – Carbon Financial Instrument	Poor
VCS – Voluntary Carbon Standard	Ok
VER +	Good
GS – Gold Standard VER	Excellent
CCB – Climate, Community & Biodiversity	Excellent

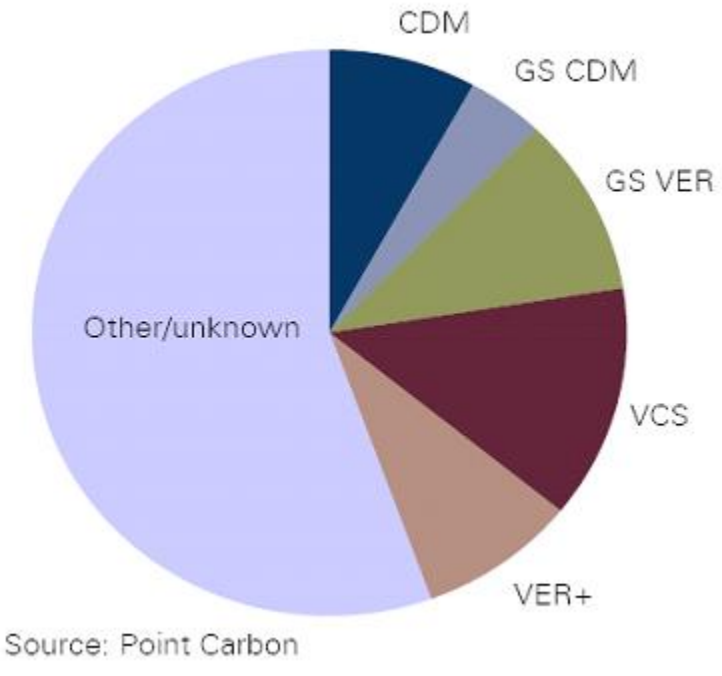
Prices and trends in the voluntary market

Table 7. VER prices

	Standard	Price €/tCO2e ($ /tCO2e)
Premium	Gold Standard, CCB	7-10 (14)
Medium	VER+ VCS	5-10.5 (7-15) 3.5-7.5 (5-10.8)
Basic	CFI (CCX)	2- 3 (3-4)

- From table 5 and 6 we can see that there is a clear relation between the environmental integrity of the standards and the price.

Figure 2. Transactions in the European voluntary market in 2007.



Trends: Market Size

The voluntary market grew to $331 million in 2007, more than tripling its 2006 market value according to a report by Ecosystem Market Place & New Carbon Finance[16]. Part of the demand for voluntary credits is based on the expectations that these will be accepted by a US cap-and-trade programme. Wiley Barbour, director of Environmental Resources Trust (ERT), a Washington DC-based, non-profit organisation, said an unprecedented increase in demand is just around the corner as companies seek out credits from high-quality offset projects that stand a chance of being accepted for use in a national cap-and-trade programme.[17] In general there is growing expectation in the market that federal legislators would allow companies to use offset credits for compliance under potential mandatory carbon caps.

The potential size of the VCU market under a federal compliance scheme could be between 500 million and 1 billion tonnes, Annika Colston, vice president of emissions

[16] Ecosystem Marketplace & New Carbon Finance (2008). State of the Voluntary Carbon Markets 2008",

[17] http://www.pointcarbon.com/news/1.970902

reductions projects at North American project originator Blue Source[18]. On the 26th of September the US Government Accountability Office (GAO) published a report after investigating the US voluntary offset market. From testing the quality of offset it was found that only 3 out of 33 retail offset providers gave information about the additionality of their projects, while only nine provided information on how they monitor and verify projects. GAO recommended future climate legislation should direct federal agencies to set rules governing the quality and standardisation of offset projects.

Trends: Prices

According to New Carbon Finance (2008)[19] the first eight months of 2008 the average prices on the secondary market for issued VERs had risen from $US5.00 to $6.30. This information is based on data collected that is "significantly biased" towards the US market were the prices might be below the global average.

The price range has been wide from €0.4 - €35. Prices vary according to, amongst other things:

- Where the provider is in the supply chain
- Type of project
- Quality of reduction (standard)

[18] Point Carbon (2008) Demand for US-based VCS offsets seen rising
http://www.pointcarbon.com/news/1.972401

[19] New Carbon Finance (2008) Press release "Voluntary Carbon Index" shows VER
prices have increased 26% in 2008 and highlights increasing interest in the pre-compliance market

Chapter 7 Consequences of employing selected standards

Introduction

The first part of this chapter present estimates of available volumes and rough cost projections for three possible purchasing strategies

- Reference: on-going strategy, no limitations
- High quality only, in line with what is expected to be EU's criteria
- Gold Standard (GS) only

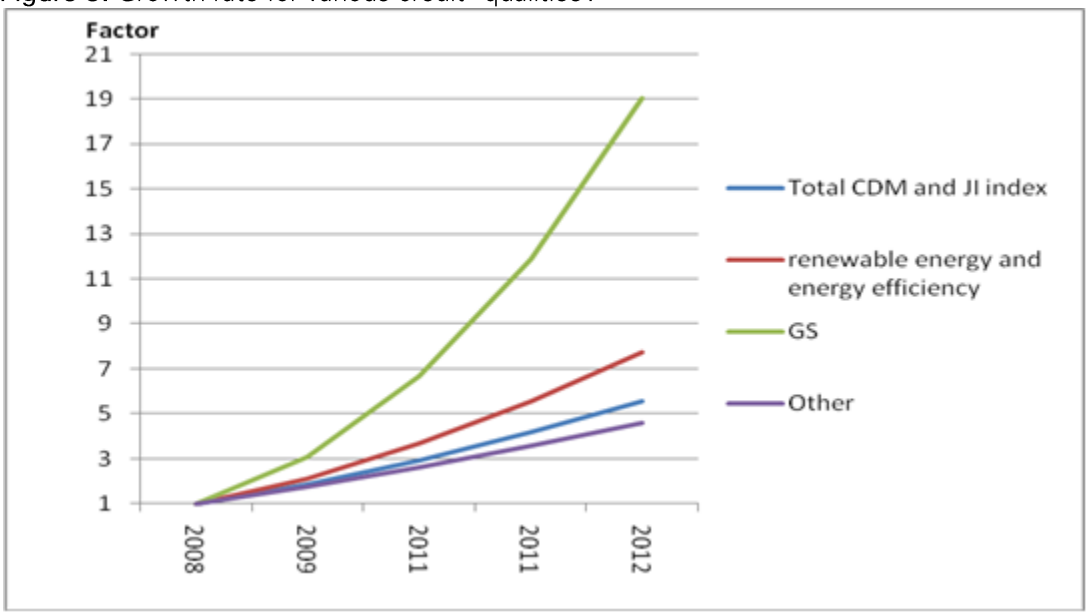
The second part present a scenario where only credits approved by the GS foundation would be allowed in the EU-ETS post 2012 and we analyse how this could affect the prices for GS credits.

Supply estimates of available volumes

In general we can see a trend towards projects of "higher quality" among those that are currently being developed, see figure 3. Partly this is due to the fact that the potential for "low quality" projects, like HFC, has already been tapped. The price premium for GS credits premium above other CERs/ERUs has been shrinking. One of the reasons for this is that the supply of credits with perceived quality similar to GS credits has increased among the "normal CERs/ERUs and thus the willingness to pay for GS is decreasing.

Although the number of Gold Standard projects in the CDM JI pipeline is growing strongly, the total volume by 2012 will almost certainly be very low compared with normal CERs and ERUs. We estimate that only 40 Mt of GS CERs will be available by the end of 2012. This is illustrated in figure 4, which shows expected supplies of credits available for purchasing through 2012 for different credit qualities.

Figure 3. Growth rate for various credit "qualities".



The supply volumes of available credits for purchasing through 2012 for the various credit classes have been calculated by using Point Carbon's CER forecasting model. This model is based on a combination of analysis of empirical trends from available CDM data, marginal abatement curves and expert evaluation of future developments. For the Gold Standard we have made a separate assessment in order to estimate future supplies. The findings are summarised in figure 4. The prices quoted in figure 4 reflect what is typically being paid currently in the market for credits of various qualities.

Implications of selection a purchasing strategy

Figure 4. Comparison of various purchasing strategies.

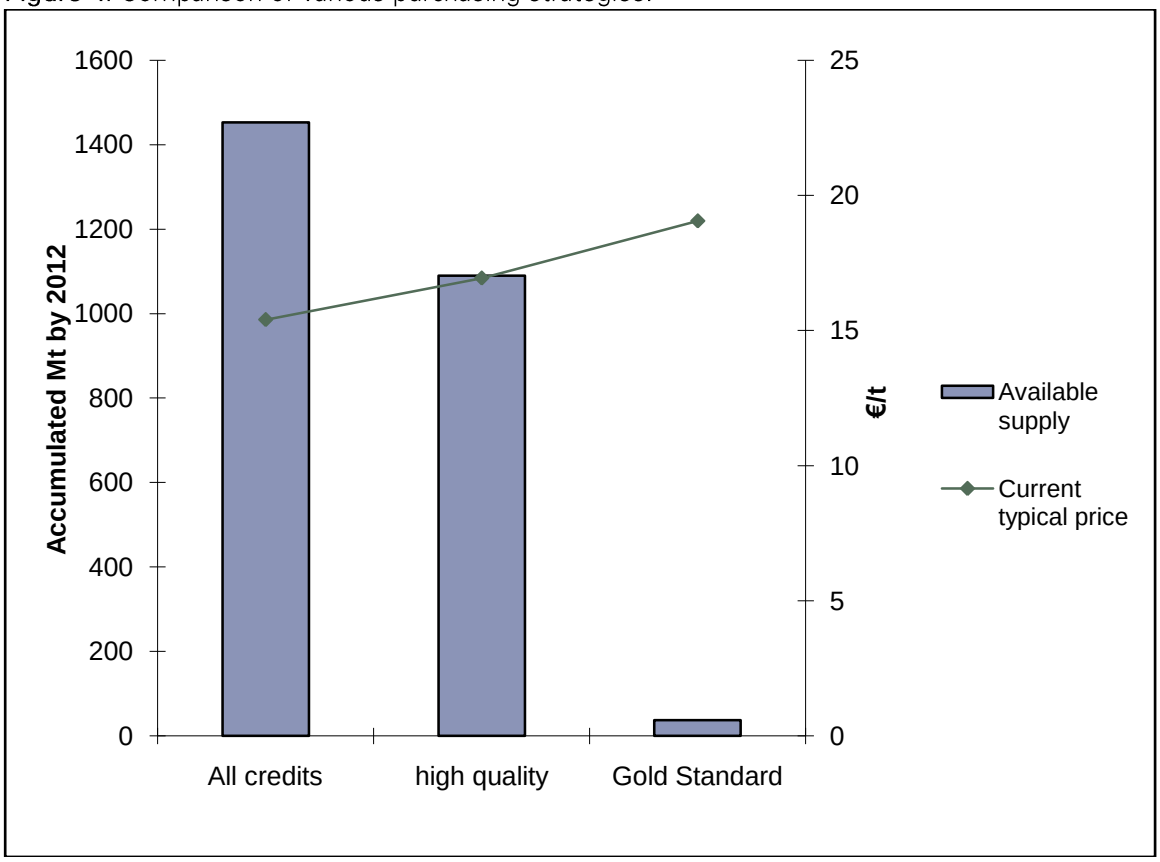


Figure 4 illustrates that a purchasing strategy limited to "high quality" (as described in chapter 1) is possible, but will require a higher price to be paid per credit, increasing the costs by roughly 10-15 per cent. Alternatively, if current funding cannot be increased, this would mean purchasing 10-15 per cent fewer credits.

MoF has a budget of €500 million and a volume target of 30-35 Mt for its purchasing programme which would allow MoF to spend on average around €15.4 per credit(including transaction costs). Reaching MoFs volume target by purchasing only GS credits would require contracting almost the full pre-2012 supply of GS credits. This is almost certainly a physical impossibility, since many of these credits have already been contracted or earmarked for other buyers. Furthermore, MoF would push up demand for these credits far beyond supply, causing a sharp spike in prices. An alternative but risky and highly labour intensive option would be to originate new GS credits unilaterally. Even then it is unlikely that sufficient progress can be made prior to 2012 to purchase the requisite volume.

Table 7 summarizes the above discussion. As it shows, there is a clear trade-off between environmental integrity, and prices.

Table 8: Pros and cons of three purchasing strategies

Purchasing strategy	Pros	Cons
All credits	Lowest cost; largest reductions	Reputational risk; fewer takers for further sales
Only "high quality"	Higher environmental integrity	Higher costs per credit; higher transaction costs
Only Gold Standard	Very high environmental/sustainability standard	Only possible at a much higher costs; higher risks of delay since most of the GS credits are expected to be generated 2011 and 2012: high transaction costs

A reasonable compromise solution to these all-in/all-out strategies would be to contract renewable energy and energy efficiency credits, with the option of obtaining such credits via a World Bank Fund and/or allocating a portion of government funds to the Gold Standard fund. Even by supporting a small handful of GS projects, the Government would still be in a position to show unequivocally that it is helping reduce poverty, increase sustainable development and obtaining lower cost emissions reductions than would have been possible at home.

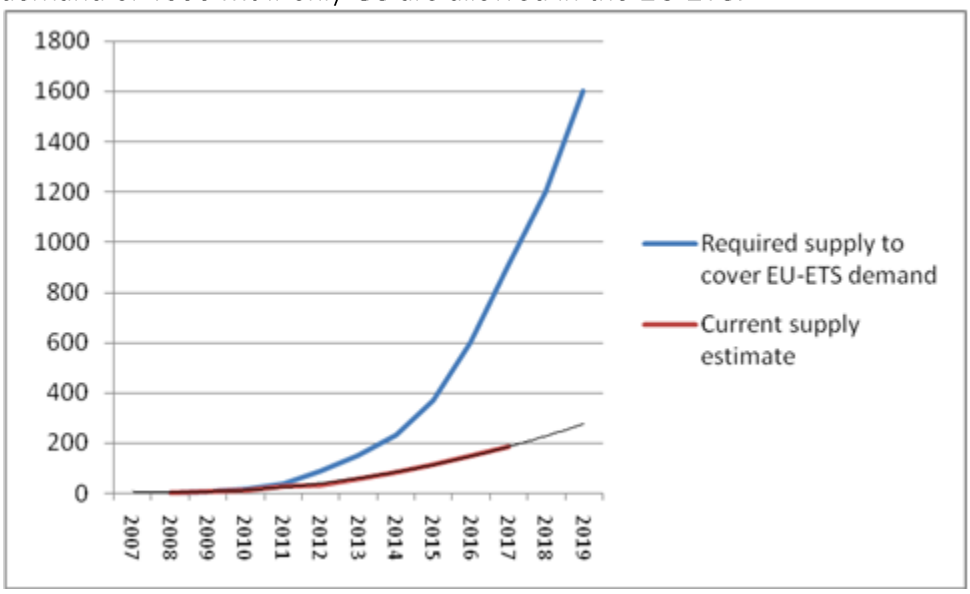
Implications if GS becomes the only eligible standard in the EU-ETS

Point Carbon's central political scenario, which was described in the Carbon Market Analyst published on the 18th of September, is that there will be an international agreement regulating the emission of greenhouse gases post 2012. The EU is expected to commit to a 20% reduction of GHG emissions relative to the 1990 level. Assuming that only GS credits would be accepted and that the import limits of CERs/ERUs proposed by the European Parliament would be adopted, the demand for GS credits in the EU-ETS 2008-2020 would be around 1600 Mt as described in chapter 1.

According to the current trend, 185 Mt GS CERs will be issued until 2018 and, as shown in figure 5 below, 340 Mt by 2020.

In the scenario where there will be no qualitative limitations in the EU ETS it is expected that the price for GS credits will be around 10-15% higher compared to the price if they would not attain the GS certification. Currently about 42% of the expected supply of UN credits through 2012 are from renewable energy and energy efficiency project. Even though not all projects within this category would be eligible for GS, a large proportion are or the correct project type. However it is uncertain how many of these projects that would pass the other restrictions set by the GS.

Figure 5. GS supply estimates.
In red: current GS supply estimates. In blue: supply estimates required to meet a demand of 1600 Mt if only GS are allowed in the EU ETS.



As evident from figure 5, the supply of GS credits would need to increase extremely sharply in order to meet the demand of 1600 Mt. Higher demand is normally followed by a higher supply. However, we predict that the supply would not, even under the most ambitious implementation scenario, be high enough by 2020 to meet the demand. This assumption is based on our knowledge of GS institutional capacity and the capacity of experienced project developers to find and impalement new GS projects.

In the case where available supply of GS credits is below the import limits to the EU ETS, the price of GS credits would be equal to the price of EUAs (which is equal to the ETS marginal abatement cost (MAC)) minus a small delivery risk discount. This is because industries would be indifferent between reducing their own emissions and purchasing a GS emission reduction credit. The price for a GS credit would thus be equal to the MAC in the EU-ETS minus the small risk adjustment. As long as the supply of credits is below the demand, the price risk of GS CERs/ERUs mainly depends on changes in the MACs of EU ETS participants.

By running a number of scenarios in Point Carbon's Carbon Price Forecaster, our best estimate of EU ETS prices for 2013-2020 is €52.75 where the EC's proposed rules on supplementarity for the EU ETS have been applied.

Compared to our assumptions for our best price estimate, the scenario were only GS credits would be allowed would require a larger proportion of the emission reductions to take place within the EU ETS. As the industry needs to take on more emission abatement, their MAC increases. Our best price estimate for the EU ETS under this scenario would thus be much higher than €52.75.