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SUBMISSION TO THE EUROPEAN COMMISSION

ON THE REVIEW OF THE EU EMISSIONS TRADING SCHEME DIRECTIVE:

THE NEED TO LIFT THE BAN ON FOREST BASED CARBON CREDITS

SUSTAINABLE FORESTRY MANAGEMENT LIMITED

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Introduction

Sustainable Forestry Management Ltd. ("SFM") welcomes this opportunity to comment on the European Commission's preparation of a proposal to amend the EU Emission Trading Scheme ("EU ETS") Directive.[1] Our comments focus on two of the four areas identified by the Commission in its Communication on Building a Global Carbon Market: (i) "the scope of the Directive," and (ii) the "linking with emission trading schemes in third countries, and the appropriate means to involve developing countries and countries in economic transition."[2]

SFM is a private group of companies dedicated to realising value from the ethical and sustainable use of tropical and sub-tropical forests. Our environmental services include carbon sequestration and the promotion of biodiversity, fresh water, soil conservation, environmentally certified timber, bio-mass energy, and bio-diesel fuels. SFM originates, designs, and manages its investments in partnership with the private, public and non-governmental sectors to provide sustainable livelihoods and restored and preserved forest ecosystems. SFM was created to demonstrate that reversals of tropical and subtropical forest degradation and climate change mitigation can be accomplished by private sector investment meeting the highest commercial, environmental and social standards. Appendix 1 to this submission provides further information on SFM and its activities.

At its Summit on March 8-9, the European Council again demonstrated the European Union's strong leadership in climate change mitigation by making a firm unilateral commitment to achieve at least a 20% reduction of green house gas emissions ("GHG") by 2020 compared to 1990.[3] The European Council also acknowledged the importance of forestry in climate change mitigation and biodiversity policies, and invited the European Commission to consider including land use, land-use change and forestry ("LULUCF") within the scope of the EU ETS Directive.[4]

Moreover, SFM takes note that, in line with this position, at the 2007 G8 Summit in Heiligendamm, the EU was able to ensure an agreement among world leaders to seriously consider halving global emissions by 2050 and to "remain engaged in supporting developing countries to achieve their self-commitments for halting forest loss and to implement sustainable forest management."[5]

SFM strongly supports the EU's commitment to climate change mitigation and biodiversity, and requests the European Commission to advance these goals by allowing the use of forest based carbon credits in the EU ETS, in line with the current Kyoto Protocol[6] rules and any future agreements and decisions adopted by the United Nations Framework Convention on Climate Change ("UNFCCC").

Executive Summary

Our key points in support of the inclusion of forest based carbon credits in the EU ETS are as follows:

1. Forestry Is Essential to Climate Change Mitigation and Biodiversity Conservation

- There is increasing international consensus that sustainable forestry is key to any meaningful international strategy aimed at mitigating climate change. As the most recent report of the Intergovernmental Panel on Climate Change ("IPCC") makes clear, there is "high agreement and much evidence" that "forest-related mitigation activities can considerably reduce emissions from sources and increase CO_2 removals by sinks at low costs."

- Forests are also important providers of environmental services in the form of preserved biodiversity and the sustainable development of local communities. Forests are estimated to contain as much as two thirds of all known terrestrial species. Forests also provide livelihoods for nearly 90% of the 1.2 billion people living in extreme poverty worldwide.

2. Forest Based Carbon Credits in the EU ETS Will Signal the EU's Commitment to Strong Support of Developing Countries

- The inclusion of forest based carbon credits in the EU ETS -- the world's leading carbon market -- will demonstrate unmistakably the EU's strong support of developing countries and their significant contribution to climate change mitigation and the protection of biodiversity. By excluding forest based carbon credits from the world's leading carbon market, the EU is, in effect, currently discouraging the use of forest based Clean Development Mechanism ("CDM") projects in the poorest of the developing countries.

- Only forest based carbon credits can, in practice, attract and deploy the capital flows to developing countries that are required to compensate them for sustainable forestry efforts. In effect, as the United Nations Forum on Forests has acknowledged, it is simply unrealistic to think that traditional channels of official development assistance ("ODA") can provide the level of funding required to finance meaningful world-wide forestry programs.

3. Forest Based Carbon Credits Are Essential to Ensure Europe's Smooth Transition to a Low Carbon Economy, While Preserving Industry's Mitigation Responsibilities

- Forest-based carbon credits will provide much needed flexibility for particularly vulnerable European industry sectors and companies as they struggle to meet the EU's ambitious target of a 20% of reduction of emissions by 2020 and eventually 50% by 2050.

  Such flexibility will allow such energy-intensive sectors to transition with less disruption and at reduced cost towards innovative technologies (many of which are still at an early developmental stage) and a new low-carbon energy system over the next several decades. As the Stern Review makes clear, the annual costs of mitigating climate change can be

limited to around 1% of the average GDP -- but only if efficient avoided deforestation, reforestation and afforestation policies are urgently adapted in the developing world.

- Forest based carbon credits will not, as some have claimed, de-incentivise European industry from rapidly adopting new technologies and changing their consumption and production patterns. The time required to grow new forests, the strict rules of the Kyoto Protocol and forests' inherent biological constraint to mitigate climate change beyond a certain point, all help ensure that European industries will continue to feel the pressure to meet the required emission reduction targets.

4. Forest Based Carbon Credits Will Facilitate Climate Change Negotiations with Third Countries and Ensure that the EU ETS Remains the World's Reference Carbon Market

- Including forest based carbon credits into the compliance system of the EU ETS will allow for an easier linking with other national and international trading schemes that include credits generated in line with the UNFCCC agreements, and therefore, allow the EU ETS to remain as the world's reference carbon market.

5. Methodological Concerns Do Not Justify Holding Back on Forest Based Carbon Credits, Especially in Light of Newly Developed Technologies and Methodologies and UNFCCC Rules

- Methodological concerns on monitoring, reporting, and measuring forestry carbon stock changes are also not justified in the light of the new, sophisticated, and accurate monitoring techniques developed over the last decade. Quantification of carbon stocks, leakage and additionality are also subject to strict UNFCCC procedures to eliminate methodological uncertainty.

6. Allowing Forest Carbon Credits into the EU ETS Will Not Threaten the Integrity of the System

- The opening of the EU ETS to forest based carbon credits will not result in a flood of cheap carbon credits threatening the integrity of the system. The currently eligible afforestation and reforestation CDM and JI projects are very few and limited in scale. Only a relatively small quantity of such credits will be available by 2012. As the number and scale of eligible projects increases, the supply of such credits will be more than matched by the increasingly ambitious emission reduction goals of the EU.

7. Opening the EU ETS to Forest Based CDM/JI Credits is Feasible Through a Simple Amendment of the EU ETS Directive

- The opening of the EU ETS to forest based carbon credits can be done by a simple amendment of the EU ETS Directive. The opening of the system to forest based JI credits does not require further changes than the lifting of the ban of forestry based credits. Alternatively, limiting CDM forest based credits to JI and temporary certified emission reductions ("tCERs") requires additional amendments.

- The simplest means of dealing with the "permanence" issue is transferring the liability to the entity that has purchased the temporary credit. The private operator will be obliged to

replace the tCERs once they expire, and if the operator fails to replace the credit in time, he will be liable for the excess emission penalty.

SFM Detailed Comments on the Review of the EU Emissions Trading Scheme Directive

I. The Role of Forestry in Climate Change and the Protection of Biodiversity

There is increasing international consensus that sustainable forestry is key to any meaningful international strategy aimed at mitigating climate change, preserving biodiversity, and encouraging sustainable development.[7] As a recent report of the IPCC makes clear, there is "high agreement and much evidence" that "forest-related mitigation activities can considerably reduce emissions from sources and increase CO_2 removals by sinks at low costs, and can be designed to create synergies with adaptation and sustainable development."[8] In the words of the Stern Review:

> "Curbing deforestation is a highly cost-effective way of reducing greenhouse gas emissions and has the potential to offer significant reductions fairly quickly. It also helps preserve biodiversity and protect soil and water quality. Encouraging new forests, and enhancing the potential of soils to store carbon, offer further opportunities to reverse emissions from land use change."[9]

A. The Role of Forestry in Climate Change Mitigation

Global warming of 2°C above pre-industrial levels is now inevitable and continued GHG emissions at or above current rates can result in a further warming in the range of 2.4-6.4°C during this century.[10] It is clear that any prospect of holding global warming at around 2°C will require stabilizing atmospheric carbon dioxide concentrations at around 450 ppm levels in the next 20 years, and therefore, reducing GHG emissions from an average of approximately 670 to 490 GtC.

In the medium term, however, it will be impossible to achieve this mitigation goal through new technologies or behavior change alone. Instead, any meaningful attempt to mitigate climate change requires the significant contribution of sustainable forestry in the form of avoided deforestation and forest degradation, as well as afforestation and reforestation. As recently stated by the IPCC, sustainable forestry activities "are key mitigation technologies and practices currently commercially available."[11]

"Forests account for almost half of the global terrestrial carbon pool."[12] A report of the Food and Agriculture Organization ("FAO") estimates that the total carbon content of forests ecosystems was 638 Gt of carbon in 2005, more than the amount of carbon contained in the entire atmosphere.[13] Forests contain 80% of all the carbon stored in terrestrial vegetation and 90% of the exchange of carbon between the atmosphere and the earth's land surface occurs in forests.[14]

The world's deforestation, however, continues at an alarmingly high rate of some 13 million hectares per year.[15] This deforestation is one of the main sources of carbon emissions and is by far the largest source of emissions from developing countries, contributing to an amount greater than the total of U.S. fossil fuel-based emissions.[16] In effect, deforestation and land-clearing activities emit around 1.7 billion metric tons of carbon per year into the

atmosphere.[17] LULUCF contributed at least 40% to the growth of GHG emissions between 1970 and 2004,[18] and continued deforestation and forest degradation will result in annual emissions of 10Gt per year for 50-100 years.[19] As stated in the Stern Review:

> "The scale of the problem is daunting. Without prompt action emissions from deforestation between 2008 and 2012 are expected to total 40Gt CO_2, which alone will raise atmospheric levels of CO_2 by ~2ppm, greater than the cumulative total of aviation emissions from the invention of the flying machine until at least 2025."[20]

Indeed, there is growing international consensus that to avoid dangerous interference with the global climate system, deep reduction in GHG emissions from tropical deforestation are an essential complement to reductions in emissions from industrial sectors.[21]

Halting deforestation, however, will, in effect, require new afforestation and reforestation projects as any reduction of harvest from native forest must be matched with production elsewhere. Regulated and sustainable afforestation and reforestation projects can provide alternative forest harvest, and therefore prevent a shift to unregulated sources, such as illegal logging, which undermine biodiversity and the survival of native populations.[22]

Furthermore, afforestation and reforestation projects also have the potential to absorb about one tenth of global carbon emissions projected for the first half of this century into the forests' biomass, soils, and products, and store them -- in principle -- for perpetuity.[23] In tropical countries, where vegetation grows rapidly, and therefore, removes carbon from the atmosphere more quickly, reforestation and afforestation can remove large amounts of carbon from the air within a relatively short time and store up to 15 tons of carbon per hectare per year.[24] About 65% of this mitigation potential is located in the world's tropics, in developing countries.[25] Indeed, there is "high agreement and much evidence" that sustainable forestry in the tropics and sub-tropics can and should play a crucial role in the mitigation of climate change.[26]

In addition, scientists agree that one of the most important climate change risks is a peak in the concentration of carbon in the atmosphere due to carbon cycle inertia and the inevitable increase in emissions by developing countries in the short and medium term. Thus, even temporary carbon storage in terrestrial sinks can help prevent such peak carbon concentrations in the atmosphere below potentially dangerous levels, while mankind implements large-scale applications of innovative low-emission technologies.[27]

B. The Role of Forestry in Biodiversity

As recognized by the Millennium Ecosystem Assessment, forests are important providers of environmental services in the form of preserved biodiversity and the sustainable growth of local communities.[28]

The world's "biodiversity treasure-trove" provides the global economy with an invaluable and extensive pool of innovative products and processes, which is still widely unutilized.[29] An estimated 40% of world trade is based on biological products and processes, and biological diversity provides the world's population with foodstuffs, medicines, building materials, bio-energy, and protection against natural disasters.[30]

Forests, in particular, are estimated to contain as much as two thirds of all known terrestrial species.[31] The key role of forests in the conservation of soil and of fresh water and the impact

of deforestation on wetlands and on coral reefs are well-established.[32] Forests also provide livelihoods for nearly 90% of the 1.2 billion people living in extreme poverty worldwide,[33] and are critical in stemming the tide of environmentally-induced migration. A study for the Washington DC-based Climate Institute estimates that every year, around 25 million environmental refugees are displaced by land shortages, deforestation, extreme weather events, and other climate change related impacts.[34] More recent assessments are even more alarming.[35]

As stated in the 2002 Johannesburg Plan of Implementation:

> "Forests and trees cover nearly one third of the Earth's surface. Sustainable forest management of both natural and planted forests and for timber and non-timber products is essential to achieving sustainable development as well as a critical means to eradicate poverty, significantly reduce deforestation, halt the loss of forest biodiversity and land and resource degradation and improve food security and access to safe drinking water and affordable energy; in addition, it highlights the multiple benefits of both natural and planted forests and trees and contributes to the well-being of the planet and humanity."[36]

At the G8 Heiligendamm Summit, world leaders agreed on the co-benefits of sustainable forestry. They declared that "reducing, and in the long term halting deforestation provides a significant and cost effective contribution toward mitigating greenhouse gas emissions and toward conserving biological diversity, promoting sustainable forest management and enhancing the security of livelihoods."[37]

The forestry link between climate change and biodiversity runs both ways. On the one hand, climate change is one of the main direct drivers of biodiversity loss and habitat change in forests and other ecosystems. Climate change is projected to exacerbate the loss of biodiversity and increase the risk of extinction of many species.[38] A rise of 2°C will significantly increase the risk of extinction for 30% of the world's species.[39] It is therefore critical that biodiversity implications and potential impacts are equally considered in the mitigation of, and the adaptation to, climate change and the reduction of emissions from deforestation.[40]

On the other hand, properly designed and implemented forest and land-use measures, including reforestation, afforestation and the avoidance of further deforestation and forest degradation can mitigate and importantly, foster adaptation to, climate change while also ensuring the preservation of most of the world's biodiversity. The conservation and sustainable use of biodiversity is an essential element of any strategy to adapt to climate change.[41] As the IPCC has recently stated:

> "Reducing both loss of natural habitat and deforestation can have significant biodiversity, soil and water conservation benefits, and can be implemented in a socially and economically sustainable manner. Forestation and bioenergy plantations can lead to restoration of degraded land, manage water runoff, retain soil carbon and benefit rural economies."[42]

II. Policy Reasons for Including Forest Based Carbon Credits in the EU ETS

By including forest based carbon credits in the ETS, the EU has an historic opportunity to demonstrate its commitment to international climate change mitigation policy, while

simultaneously protecting the biodiversity of forests and making a genuine contribution to the sustainable development of the world's poorest countries.

The EU ETS is the world's largest emissions trading market and accounts for around 62% of the volume and over 80% of the value of traded carbon credits.[43] This means that integrating forest based carbon credits into the ETS will potentially significantly increase the demand for such credits, and therefore, mitigate climate change and biodiversity loss, while helping advance international climate mitigation goals.

Increased demand for forestry-based carbon credits will provide an important incentive to ensure the meaningful participation of the large majority of developing countries in the post-2012 emissions reduction regime.[44] In effect, the promise of the CDM has not yet been realized for the majority of the developing world, and the number of countries benefiting from the CDM is limited to middle-income and large developing countries. For example, Africa hosts only 4% of all CDM projects, while recent estimates indicate that the People's Republic of China accounts for more than 60% of all credits produced under the CDM.[45] In the words of Nobel Peace Laureate Wangari Maathai, "*carbon forestry and agriculture are the only meaningful methods of offering sustainable livelihoods to the rural poor and the only way that they can participate in and benefit from the carbon market.*"[46]

Carbon credits are the most effective means of providing the necessary incentives and investment for developing countries to curb deforestation and forest degradation and engage in sustainable reforestation and afforestation. Traditional channels of official development assistance ("ODA") are simply insufficient to finance any meaningful world-wide forestry effort.[47] For example, current estimates suggest that the cost of halting deforestation in 8 countries contributing to 70% of the world's land use emissions are between €6,5 billion and €13 billion annually.[48]

Past experience shows that it is unrealistic to think that public authorities can provide this level of funding. According to the OECD, the 22 member countries of the OECD Development Assistance Committee provided $103,9 billion in aid in 2006, a figure that is nowhere near the UN target of 0.7% of the GDP nor adequate to ensure the realisation of the Millennium Development Goals.[49] The equivalent of a 20% increase in the global aid budget earmarked for forestry alone is inconceivable.

In contrast, "financial flows to developing countries through CDM projects have the potential to reach levels of the order of several billions of U.S. dollars per year."[50] Markets have the potential to engage far more financial support than even the most optimistic estimates of ODA that may reasonably be expected from foreign aid. For example, in 2005, U.S. foreign aid was $570 million to Colombia, $190 million to Peru, and $180 million to Bolivia. In contrast, taking a weighted average carbon market price in 2004-2005 of $5.63t/$CO_2$, if Brazil reduced its deforestation by 10% against a baseline of average deforestation for the 1980s, over five years, it could earn $495 million per year, or $2.47 billion over five years.[51]

A recent study of the World Bank also values tropical forest cleared to pasture as being worth between $200-500 per hectare. Based on its average CO_2 storage per hectare of 500 tonnes, the value of tropical forest as a carbon store is between $1500-10,000 per hectare, at around between $3 to $20 per ton of CO_2.[52] At an annual deforestation rate of 12 million hectares, even the low range of values represent a transfer of private capital from the industrialised world to rural populations in the developing world of some $18 billion, the equivalent of a

17% increase in global ODA.[53] Not surprisingly, the United Nations Forum on Forests has recently recognized that in order to promote world sustainable forestry, there is a need to mobilize significantly increased financial resources in addition to ODA.[54]

The private investment that forest based carbon credits can provide will also allow individual local stakeholders to meaningfully participate in and benefit from sustainable forestry. Private capital will allow local stakeholders to have direct access to capital flows without the intervention of potentially weak government agencies. In contrast, forest administration and local forestry agencies in developing countries are often characterized by weak governments, poorly enforced (and sometimes contradictory) policies and regulations, and/or corruption.

Including forest based carbon credits in the EU ETS will also help in the future linking of the ETS with the carbon trading schemes of other jurisdictions that include such credits. For example, mandatory schemes such as the New South Wales Greenhouse Gas Abatement Scheme[55] and the US Northeastern States' Regional Greenhouse Gas Initiative[56] already allow operators to trade and use forest based carbon credits. This is also true of voluntary carbon markets, such as the Chicago Climate Exchange,[57] and will almost certainly be true of the national Australian cap and trade scheme.

III. The Economic Case for Including Forestry in the EU ETS

Recent experience under the EU ETS and a growing body of analysis confirm that forest-based carbon credits will provide much needed flexibility for European industry as it strives to meet the EU's ambitious climate change mitigation targets. Such flexibility is essential to ensure a balance between, on the one hand, requiring industry to quickly adopt new technologies and changes in production and consumption patterns and, on the other hand, allowing particularly vulnerable European industry sectors and companies to transition with less disruption and at a reduced cost. In the absence of such credits, European energy-intensive industry sectors and companies will be particularly vulnerable to unnecessary economic harm and potential job losses as they seek to compete in the global economy.

It is clear that wide-scale deployment of renewable energy technology is limited by current transmission capacity in many countries and by the fact that these resources are intermittent by nature and cannot meet base load generation requirements. It is also clear that extensive deployment of nuclear power will take at least a decade or more, even without political opposition, given the time required to license, site and construct new reactors. And, finally, it will take at least until the 2020s to accomplish commercial deployment of carbon capture and storage for coal-fired power plants.[58]

In short, Europe's energy system, which is the driver of Europe's GHG emissions, will not change over night no matter how high the price of European Allowance Units ("EAU"). At the same time, there is no question that high EAU prices will have a very detrimental impact on vulnerable energy-intensive sectors of the European economy that are unable to pass on the additional costs, undermining their competitiveness and encouraging de-industrialization and potential loss of employment.

It does not have to be this way. The EU can achieve its ambitious GHG emission targets by 2020 in a manner that minimizes economic harm if it recognizes the simple fact that well-functioning carbon markets must be open to low-cost emissions reductions. Indeed, the chief advantage of market-based approaches to emissions reduction lies in the flexibility that these

markets provide in achieving the lowest cost emissions reductions possible. The decision to leave out the most important source of low-cost credits -- those available from forestry projects in tropical and sub-tropical countries -- would be a grave policy mistake.

A. The Impact of the Price of EUAs in Europe's Electricity Prices

The European Council's commitment to reduce emissions by 20% below its 1990 baseline[59] is significantly more ambitious than its commitments under the Kyoto Protocol. It represents an ambitious environmental policy goal without precedent. Indeed, even if the EU fulfils its Kyoto Protocol commitments, it will still need to reduce its overall emissions by an additional 12% between 2012 and 2020 in order to achieve the new goals it has adopted, which translates into an annual reduction rate of 1.5% -- four times higher than the annual rate needed to meet the Kyoto Protocol targets for the first commitment period. This will not be easy. If, as indicated at the 2007 G8 Heiligendamm Summit, the goal will be a 50% reduction by 2050, the task will be even more difficult.

Recent experience under the first phase period (2005-2007) of the EU ETS, moreover, demonstrates that achieving even the limited emission reductions required by the Kyoto Protocol will impose significant costs on certain energy-intensive sectors of the European economy. Although the first phase period has been widely portrayed as a successful learning opportunity for trading,[60] the fact that prices for EAUs remained very high until April 2006, combined with high volatility, provides a glimpse of the serious economic disruptions that future climate change mitigation efforts can have on particularly vulnerable sectors of the European economy. [61]

Several studies have already documented the direct effect of high and volatile EAU prices on European electricity prices.[62] Eurostat, for example, reports that electricity prices rose significantly throughout the EU in 2005, with household rates rising by 5% on average over all 25 EU countries, and industrial rates rising by 16% on average.[63] The International Energy Agency has also noted that the tight correlation between EAU and wholesale power prices poses particular challenges for those companies that are unable to pass on their increased energy costs:

> "CO2 prices have been rather volatile in the EU, and have added volatility to the observed electricity prices… Managing this volatility is essential for industrial facilities, as it may damage the competitiveness of companies – mainly for those which cannot pass-through an increase in costs onto their prices."[64]

Similarly, analysis from UBS indicates that the increase in the EAU price from €8 to €20 during the period January to July 2006 resulted in a 15-20% rise in electricity prices.[65] This has clearly hurt the energy-intensive sectors of the European economy and has affected strategic decision-making going forward.[66] One Norwegian aluminium smelter, for example, decided not to locate new production within the EU due to the effects of the price of EAUs on energy prices.[67] The Union of Industrial and Employers' Confederations of Europe (UNICE) has also criticised the EU ETS for putting European companies at a competitive disadvantage with respect to global competitors.[68] And a growing body of anecdotal evidence further supports the general conclusion that the first phase of the EU ETS has had distressing consequences for firms subject to higher electricity prices. [69]

To address these concerns, the European Commission's DG Environment commissioned consultants McKinsey & Company and Ecofys to conduct a review of the EU ETS, focusing

specifically on the scheme's effect on international competitiveness for regulated sectors.[70] Overall the report concluded that the impact of the EU ETS on international competitiveness is limited, but it emphasized that certain sectors such as aluminium, pulp and paper, steel and cement have been much more severely affected.[71]

It is important to recognize, moreover, that the analysis was premised on an EU emissions reduction target of 8% by 2012 and a regime under which the initial allocation of EAUs is free. These assumptions, combined with the fact of widespread over-allocation of allowances during the first phase, result in what is almost certainly an underestimate of the economic impact that one can expect under future phases of the ETS, which will be marked by more aggressive targets, tighter allocations, and auctioning of EAUs.

For example, the Ministry of Finance of Finland has indicated that if the EU's ambitious plan to cut emissions by 20% from 1990's levels is implemented, it expects the country's GDP to decrease by 3,4% in 2025 compared to projections without such reductions. As a result employment would be weakened by more than 3% and consumer demand by 8%.[72] Similarly, BusinessEurope -- a major European business lobby -- has expressed worries that the EU's unilateral 20% reduction target could seriously damage European competitiveness if other countries do not follow.[73]

B. The Economic Opportunity of Forest Credits

There are ways to achieve the EU's ambitious targets without subjecting European industry to a system marked by high and volatile prices. Forest credits can provide a source of much-needed flexibility for heavily impacted European firms over the short to medium term, as they strive to adapt to a more ambitious EU ETS. And forestry credits can do so without swamping the market, as some have feared. This basic fact has been recognized for some time. The IPCC, for example, recognised the potential for GHG mitigation from forestry in several of its early reports, while at the same time acknowledging that credits from biological mitigation cannot achieve the required levels of GHG mitigation on their own.

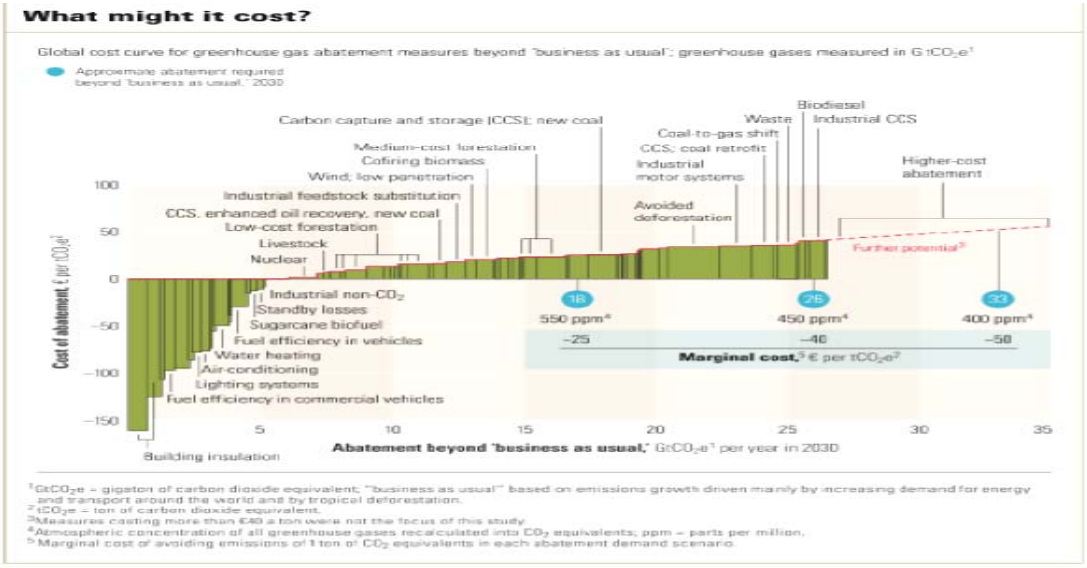
Indeed, the 2001 IPCC report indicates that the current potential of biological mitigation options is on the order of 100 GtC (cumulative) by 2050, equivalent to about 10 to 20 % of projected fossil fuel emission during that period.[74] This analysis shows that emission reductions from the forestry sector, while essential to achieving flexibility and medium term abatement goals, are also biologically constrained in their ability to mitigate climate change beyond a certain point. Accordingly, the fear is unfounded that offsets from forestry will flood the markets and reduce incentives to technological change.

The IPCC also confirms that tropical forestry in particular can provide GHG mitigation at prices well below other mitigation options, with estimates of abatement costs through forestry ranging from \$0.1-5.45/tCO_2 in developing countries to \$5.45-28/tCO_2 in developed countries.[75] And the latest IPCC report further confirms that there is "high agreement and much evidence" of the important role of tropical forestry in greenhouse gas mitigation at low cost. [76]

The IPCC's conclusions have been reinforced by several recent studies on the relative cost effectiveness of credits from the forestry sector, both from avoided deforestation and reforestation in the developing world. The Stern Report on the Economics of Climate Change, for example, concludes that:

> "Curbing deforestation is a highly cost-effective way of reducing greenhouse gas emissions and has the potential to offer significant reductions fairly quickly. It also helps preserve biodiversity and protect soil and water quality. Encouraging new forests, and enhancing the potential of soils to store carbon, offer further opportunities to reverse emissions from land use change […] Carbon markets could play an important role in providing such incentives in the longer term."[77] (Emphasis added.)

Likewise, McKinsey & Company and Vattenfall have recently published research that explicitly identifies forestry abatement opportunities as critical to achieving GHG mitigation targets at an acceptable economic cost. In fact, both McKinsey and Vattenfall conclude that forestry can provide a larger share of reductions than any other sector, including reductions in the power sector.[78] Their analysis examined abatement scenarios for reduction of emissions to 31 $GtCO_2e$/yr at a cost below €40/t CO_2e.[79] Simply put, GHG abatement activities directed at stabilising concentrations at 450 ppm, while maintaining a price below €40/t CO_2e will *require* the inclusion of credits from avoided deforestation and reforestation.[80]



The chart above illustrates the point that forestry must play a key role in GHG abatement efforts if we are to achieve a 450 ppm climate stabilization target at reasonable cost. Contrary to the current focus on unproven and costly technology that will take decades to deploy on a commercial scale, the McKinsey and Vattenfall studies indicate that almost 75% of near-term abatement potential comes from the land-use sector (primarily from forestry) or relies on existing technologies. Half of the forestry abatement can be supplied by afforestation and reforestation and half by avoided deforestation. Of course, this in no way obviates the need for profound technological transformation to reduce GHG emissions from the energy sector in the long run, but it does underscore the potential to mitigate a significant portion of GHG emissions in the meantime with affordable, existing measures.

Therefore, allowing European firms to use forest credits for compliance purposes under the EU ETS will provide them with limited -- but also vital -- flexibility without undermining the environmental incentives and effectiveness of the scheme. Indeed, forest based carbon credits would allow predictable flexibility within a regime of binding stringent emission reduction cuts. The credits would allow particularly vulnerable industry sectors and companies to minimize the costs of meeting the reduction targets by allowing them to do so

when it is more efficient to them, for example when long term capital is scheduled to be replaced.

A key point is that since climate change is driven by the sum total of emissions over long periods of time (given the long residence time of CO_2 in the atmosphere), adjusting the timing of emissions reductions from the energy sector to match the availability of new technologies by the use of LULUCF carbon credits will achieve greater benefits at lower cost. When combined with the fact that a ton of CO_2 has the same climatic effect regardless of where it is emitted (which is another way of saying that a ton of emissions reduced has the same climatic effect regardless of where it happens), it makes a great deal of economic sense to seek out low-cost emissions reductions now in order to buy additional time for the sort of deep-seated technological changes that will be necessary to achieve further and more substantial reductions later.

IV. Addressing Methodological Concerns from Afforestation and Reforestation

Policy makers have raised concerns about the technological and methodological challenges involved in monitoring, accounting for, and measuring the impact of carbon credits for afforestation and reforestation. As explained below, these concerns are entirely manageable given the significant scientific and technological progress that has been made over the last decade.

The rules and modalities laid out under the Kyoto Protocol's CDM for afforestation and reforestation ("A/R") projects provide clear guidelines for accurate quantification and monitoring of carbon benefits.[81] These rules define how to quantify changes in carbon stocks, address leakage, permanence, and additionality issues, minimize uncertainty, and ensure conservativeness in estimates.

Under these rules, seven CDM A/R and one small scale A/R baseline and monitoring methodologies have been approved by June 2007. To date, less that 1% of all CDM credits have been sourced from forest projects, and no more than 5% is conceivable during the first compliance period. The short-term supply of forestry credits will not even reach the authorized target of 1% of the 1990 emissions; indeed, the current supply of forestry is not likely to even reach 10% of the allowed 1%. Thus, forest based carbon credits cannot possibly flood the Kyoto Protocol's trading scheme or the EU ETS.

1. Accurate Quantification of Carbon Benefits: The science is both strong and coherent in accurately assessing long-term gains and losses of carbon, and other emissions, from the forestry and land use sector.[82] For decades, landholders, scientific institutions and government agencies have been measuring and monitoring forest status and changes in land use patterns and carbon stocks using a combination of techniques including direct field measurements, satellite and aerial photography, and computer modelling. Many protocols for measuring and monitoring carbon project benefits already exist[83] and techniques are becoming increasingly sophisticated and accurate.[84]

The IPCC's Good Practice Guidance for Land Use, Land-Use Change and Forestry ("GPG-LULUCF")[85] details methods and guidance for estimating, measuring, monitoring and reporting carbon stock changes and GHG emissions from LULUCF for reporting for the purpose of the Kyoto Protocol. The GPG-LULUCF is consistent with guidance for other

sectors, and can be used to quantify changes in GHG from a diverse range of forestry and land-use management practices. The guide assists in the production of inventories for the LULUCF and reduces uncertainties as far as possible. It supports the development of inventories that are transparent, documented, consistent over time, complete, comparable, assessed for uncertainties, subject to quality control and quality assurance, and efficient in the use of resources.

Since the early 1990s, changes in forest area have been measured by satellite with confidence.[86] Analysis of remotely sensed data from aircraft and satellites supported by ground based observations provides a reliable method for monitoring deforestation at a national level.[87] Some developing countries, such as Brazil[88] and India,[89] have national level monitoring initiatives in place for land use. Other countries are developing these capabilities or have successfully monitored forests with aerial photographs that do not require sophisticated data analysis or computer resources. A variety of methods that are applicable to varying national circumstances regarding forest characteristics, cost constraints, and scientific capabilities are also available and are adequate for monitoring afforestation and reforestation projects and verifying the accuracy of the monitoring.

Forest inventories can also provide biomass values according to forest type and use, such as mature forest, intensely logged, selectively logged, fallow, etc. Although some developing countries do not have sufficient data from national forest inventories, the FAO database provides a default value for national carbon stock and stratification into main ecological zones.[90]

2. Permanence: The "non-permanence" of CDM A/R projects is addressed by means of temporary certified emissions reductions ("tCERs") and long-term certified emission reductions ("lCERs"),[91] under which the country is liable for (i) any re-emission of the carbon that has been credited as net sequestration at an earlier time and for (ii) replacing the temporary credit with a permanent credit at the end of a project's crediting period.

There are also available robust methods to address the permanence risk of LULUCF projects. These methods include remote sensing capabilities and land-based methods for estimating biomass, monitoring forest cover and composition and for tracking afforestation and reforestation in different parts of the tropics. Other approaches include maintenance of adequate reserves or buffers to cope with unforeseen losses in carbon stocks, insurance, discount factors based on the assessed risk of carbon loss, and general strategies to reduce risk to carbon stocks such as pest control and fire management. As a result, the risk of loss from a natural event in managed forests is on average no more than 0.04% of loss per year.[92]

Currently available information permits the elaboration of basic steps for creating an effective monitoring system for deforestation and forest degradation.[93] The main methodological uncertainty in estimating carbon loss from tropical forests is quantifying the carbon stocks associated with each cover type rather than quantifying the land cover change. Remote sensing technology has improved over the past two decades, and the process of discriminating between forest and non-forest using high-resolution imagery can achieve accuracies of 95%.[94]

3. Leakage: Leakage is quantified and accounted for in CDM A/R projects and validated by a third party during project registration and subsequent monitoring. Leakage is addressed in the CDM Project Design Document ("PDD") and described in the approved

baseline methodology. Baseline methodologies for A/R projects contain specific provisions for quantifying and accounting for leakage. Sources of leakage are identified using a conservative approach that ensures they are not underestimated. The specific provisions relate to the conditions of the particular project, but include quantification of activity displacement resulting from, for example, grazing or fuel-wood collection as well as any fossil fuel consumption during reforestation activities. Leakage estimates are then deducted from the projects' carbon balance sheet.[95]

4. Additionality: Issues relating to additionality are regulated by CDM procedures. CDM A/R projects can only be developed on land that has been without forests since 1990. These projects can only take place on land that has been cleared or that has been severely degraded for a substantial length of time, and therefore, the climate change mitigation benefits of A/R projects are clearly additional.

In addition, the CDM Executive Board has developed rigorous standards that project developers must meet in order to prove the "additionality" of their proposed projects.[96] All projects have to pass a rigorous additionality test applying the additionality tool developed by the Executive Board. Other emissions trading systems deal successfully with additionality through the land eligibility concept.[97]

5. Monitoring: Robust monitoring is required under the A/R CDM procedures, with third party verification and validation requirements for project registration and certification. Approved monitoring methodologies provide for the assessment of the overall performance of the project, including the actual net GHG removals by sinks. A quality assurance/quality control plan, including field measurements, data collection, verification, data entry and archiving, is also included in the monitoring plan.[98]

A number of different initiatives to monitor forest cover and measure forest carbon stocks have also been developed during the last decade.[99] Data and analytical methods for monitoring change in land cover and land employ remote sensing at a variety of scales and coverage – from wall-to-wall using coarse scale imagery to sampling 'hot spots' of change using fine scale – and are close to being operational on a routine basis.[100] With this technology, standard protocols can be developed using the remote sensing data and tools and analytical methods that suit a variety of national conditions while meeting acceptable levels of accuracy.[101]

In summary, there are no longer any material methodological problems that would prevent valid and verifiable afforestation and reforestation projects.

V. SFM Proposed Amendments to the EU ETS Directive

The EU ETS Directive[102] explicitly bans the use of certified emission reductions ("CERs") and emission reduction units ("ERUs") from LULUCF activities in developing countries and countries listed in Annex I to the UNFCCC. The amendments included in Appendix 2 to this submission are intended to lift this ban.

Additional amendments could be made to allow the immediate inclusion of temporary certified emission reductions ("tCERs") and ERUs within the pool of credits that operators may trade and surrender under the ETS in strict compliance with the rules adopted under the Kyoto Protocol. These amendments are also listed in Appendix 2.

The inclusion of tCERs and ERUs within the ETS from forestry projects will require five amendments to the Directive: (i) a new recital indicating the Parliament's and Council's support for sustainable forestry projects in developing countries and countries with economies in transition, (ii) the inclusion of a definition of tCERs in Article 3, (iii) an amendment of Article 11a(3) and the deletion of Article 11a(3)(b) to lift the ban on tCERs and ERUs from forestry projects, (iv) an amendment of Article 11a(1) making clear that tCERs may be used for compliance under the EU ETS, and (v) a new Article 11a(4) holding liable those operators that use tCERs and requiring them to replace the tCERs once they expire.

The amendments listed in Appendix 2 also include a call on the Commission to consider proposing, by 2010, an amendment to the Directive in order to include within the ETS credits resulting from project activities involving afforestation, reforestation, forest management, avoided deforestation, avoided forest degradation and other land-used based activities under the same terms as those agreed by the European Community and its Member States under any applicable future UNFCCC agreement. Two amendments are proposed: (i) a new recital indicating the need to review the Directive on the basis of the European Community's commitments under any future UNFCCC agreement, and (ii) a new paragraph under Article 30 requiring the Commission to consider including all credits from project-based LULUCF activities under the same terms as any applicable UNFCCC agreement and to make the necessary proposals.

Appendix 1

Sustainable Forestry Management Limited

Sustainable Forestry Management Limited ("SFM") is a private group of companies dedicated to realising value from the ethical and sustainable use of tropical and sub-tropical forests. SFM's environmental services include carbon sequestration, and the promotion of biodiversity, fresh water and soil conservation as well as environmentally certified timber, bio-mass energy and bio-diesel fuels. SFM originates, designs and manages its investments in partnership with the private, public and non-governmental sectors to provide sustainable livelihoods and restored and preserved forest ecosystems. The group was created to demonstrate that reversals of tropical and subtropical forest degradation and climate change mitigation can be accomplished by private sector investment meeting the highest commercial, environmental and social standards.

Commitment to Conservation is a Core SFM Value

SFM's activities extend beyond the commercial realm to include conservation, science, human rights and human development.. The Board of Directors brings significant experience investing in emerging markets and rural development. The Advisory Board is composed of individuals who are world leaders in their respective fields, with experience in science, conservation, human rights, biodiversity, sustainable development and developmental economics drawing on collective experience from a wide range of private, public and non-governmental sector organisations. The members of the Board of Directors and the Advisory Board include Sir Ghillean Prance, Dr. Peter Raven, Prof. Edward Ayensu, Jacob Frenkel, Robin Hanbury-Tenison, Prof. Ian Swingland, Alan Bernstein, and Israel Klabin.

SFM's Commercial Activities are Imbued with Strong Environmental Objectives:

- ✓ **To reverse environmental damage:** Forests act as natural carbon sinks absorbing carbon from the atmosphere and increasing the carbon carrying capacity of the earth. Avoided deforestation projects avoid increased emissions by storing carbon and help to abate global warming by cooling the earth through the natural cloud and rainfall cycles they generate.

- ✓ **To sustain biodiversity:** Tropical forests harbour more than half of life on earth. Climate change is expected to exacerbate the loss of biodiversity and increase the risk of extinction of many species.[103]

- ✓ **To produce only sustainably harvested timber:** Illegal logging costs developing nations up to US$15 billion per year in lost revenue. Timber from the SFM project pipeline is produced and sold on an environmentally sustainable and certified basis. This provides a critical alternative to continued harvest, legal and illegal, of native forests.

- ✓ **To support sustainable development:** Forests provide livelihoods for nearly 90 per cent of the 1.2 billion people living in extreme poverty worldwide.[104] Livelihoods of the rural poor can be supported by providing reforestation and plantation management skills leading to sustainable livelihoods which protect and enhance the eco-systems on which the rural poor depend for survival.

Every SFM Project:

- ✓ Is structured in co-operation with and for the benefit of stakeholders.
- ✓ Offers the potential to generate benefits to local communities.
- ✓ Protects human rights.
- ✓ Is compliant with international standards and conventions on forestry, bio-diversity, conservation, and sustainable development

SFM Is Developing Sustainable Forestry Projects Across the World

- ✓ **SFM Americas:** An SFM project in Peru involves the restoration and enrichment of degraded and impoverished land in the Peruvian Amazon with native tropical hardwoods. The project involves sustainable commercialization of FSC certified plantation hardwoods and carbon credits earned from reforestation and enrichment planting on degraded land. From a socio-economic perspective, the project offers considerable benefits to the local population by increasing employment and providing long term reforestation and plantation management skills. SFM Americas is also investing in projects in Argentina, Chile and Brazil, all of which include the preservation of significant biodiversity.

- ✓ **SFM Africa:** SFM Africa is a lead investor in a group of bio-fuels projects in Africa, including one of the largest bio-diesel operations in West Africa. The plant is sourced from the natural harvest of existing forests. SFM Africa is also investing in projects of land restoration and preservation as well as bio-fuel production and bio-mass substitution in South Africa, Ghana, Mozambique, Zambia, and Tanzania.

- ✓ **SFM Australasia:** The Drylands Eucalypt project is developing carbon sinks in several regions of southern and western Australia using a variety of investment structures and local partners. Many of the targeted areas have seen large-scale land degradation due to clearing of the original native forest cover, with rising water tables and salinity, reduced biodiversity, erosion and eutrophication of waterways.

  The project focuses on the use of native eucalypt species planted strategically on farming properties to address environmental issues including soil salinity, to provide positive impacts on the farming operations and to sequester carbon over the long term. The Godwana Link region is in one of the world's 34 biodiversity hot spots as identified by Conservation International and contains over a third of Australia's flowering plants.

  SFM Australia also owns a mature softwood plantation estate on Kangaroo Island eligible to generate carbon credits under the Kyoto Protocol. The estate is the only significant softwood plantation on the island, has protected local employment, relieved pressure on native forests and has also created new jobs through the update of the only sawmill on the island.

  SFM Australia has also embarked on a reforestation program in New Zealand in accordance with the recently introduced Permanent Forest Sink Initiative legislation.

SFM aims to establish 100,000 hectares of forests on degraded rural land over the next 7 to 10 years. A number of strategies are engaged to access this land, including joint ventures with Maori indigenous land owners and forest management enterprises.

SFM's Participation in International Policy

SFM is working closely with a number of international coalitions and forums on forestry. It is a corporate member of Globe International as well as the G8+5 dialogue on climate change, and contributes to its working groups and forums focused on forestry.[105] It is also a member of the Climate, Community and Bio-diversity Alliance, which has promulgated the most comprehensive voluntary standards for carbon forestry projects.[106]

SFM has made a number of submissions on policy matters related to forestry and natural carbon initiatives, including submissions to the House of Commons Environmental Audit Committee's Enquiry of the Voluntary Carbon Offset Market,[107] and the Department for Environment Food and Rural Affairs' Consultation on establishing a code for the voluntary carbon market.[108] SFM participates actively in an ongoing dialogue with a number of multi-lateral institutions and NGOs, including the World Bank Carbon Funds.[109]

More information on SFM is available at http://www.sfm.bm/

Appendix 2

Proposed Amendments to the EU ETS Directive

A. Inclusion of Forest Based Carbon Credits within the ETS

1. Recital

Current ETS Directive	Proposed SFM Amendment
	New Recital 18b
[…]	***Reducing deforestation and forest degradation and encouraging afforestation and reforestation offer enormous opportunities to reverse greenhouse gas emissions from land use change and to mitigate climate change. The inclusion of credits resulting from land use, land-use change and forestry CDM and JI projects within the Community scheme in accordance with the agreements and decisions of the United Nations Framework Convention on Climate Change and the Kyoto Protocol will underscore the Community's strong support in favour of sustainable forestry activities in developing countries and countries with economies in transition.***

The recital acknowledges the potential of forestry activities in climate change mitigation. It also sends a clear signal of the Community's commitment on climate change mitigation and the significant role that developing countries can play.

2. Definition of tCERs

Current ETS Directive	Proposed SFM Amendment
	Article 3
For the purposes of this Directive the following definitions shall apply:	For the purposes of this Directive the following definitions shall apply:
(…)	(…)
	(o) "temporary certified emission reduction" or "tCER" means a CER issued for an afforestation or

	reforestation activity under the CDM which expires at the end of the commitment period following the one during which it was issued.

The proposed amendment provides for tCERs resulting from afforestation or reforestation ("A/R") projects under the CDM under the same terms as those agreed under the Kyoto Protocol, and makes clear their temporary nature. Decision 5/CMP.1 of the Kyoto Protocol COP/MOP on modalities and procedures for afforestation and reforestation project activities under the CDM in the first commitment period of the Kyoto Protocol defines "tCERs" as "a CER issued for an afforestation and reforestation project activity under the CDM, which, subject to the provisions of section K below, expires at the end of the commitment period following the one during which it was issued."

3. Lifting the Ban on LULUCF Projects

Current ETS Directive	Proposed SFM Amendment
Article 11a(3)(b)	
All CERs and ERUs that are issued and may be used in accordance with the UNFCCC and the Kyoto Protocol and subsequent decisions adopted thereunder may be used in the Community scheme:	**[…]** CERs and ERUs and ***tCERs*** that are issued and may be used in accordance with the UNFCCC and the Kyoto Protocol and subsequent decisions adopted thereunder may be used in the Community scheme:
(…)	
(b) except for CERs and ERUs from land use, land use change and forestry activities.	**(b)** ***Delete***

The amendment lifts the ban on credits from LULUCF activities.

4. Providing the Mechanism for Forest Based Carbon Credits to Be Traded and Surrendered

Current ETS Directive	Proposed SFM Amendment
Article 11a(1)	
Subject to paragraph 3, during each period referred to in Article 11 (2), Member States may allow operators to use CERs and ERUs from project activities in the Community scheme up to a percentage of the allocation of allowances to each installation, to be specified by each Member State in its national allocation plan for that period. This shall take place	Subject to paragraph 3, during each period referred to in Article 11 (2), Member States may allow operators to use CERs**,** ***tCERs*** and ERUs from project activities in the Community scheme up to a percentage of the allocation of allowances to each installation, to be specified by each Member State in its national allocation plan for that period. This shall take place

through the issue and immediate surrender of one allowance by the Member State in exchange for one CER or ERU held by the operator in the national registry of its Member State.	through the issue and immediate surrender of one allowance by the Member State in exchange for one CER, ***tCER*** or ERU held by the operator in the national registry of its Member State.

The amendment gives freedom to Member States to decide whether to allow their operators to use tCERs, and their proportion, within the limits of the supplementarity principle of the Kyoto Protocol.

5. Holding the Operator Liable

Current ETS Directive	Proposed SFM Amendment
	New Article 11a(4)
[…]	***An operator that has used a tCER shall surrender a CER, tCER, ERU, or allowance at least 30 days before the tCER expires to cover the emissions which were covered by the soon to expire tCER. If the operator has not replaced any tCERs it has used to cover its emissions by the time the tCER expires, the operator shall be held liable for the payment of a penalty for an excess of emissions in accordance with Article 16.***

This amendment holds the operator liable for the replacement of tCERs 30 days prior to their expiry. Individual operators choosing to use tCERs are in the best position to assess the costs of managing the replacement liability associated with tCERs (*e.g.*, the future increase of prices of allowances or other credits) and compare them with the costs of taking immediate emission reduction measures. On the other hand, the fact that tCERs have a fixed life provides certainty to operators.

B. Future Inclusion of Forest Based Carbon Credits under the Same Terms as those Agreed under Post-Kyoto International Negotiations

The amendments below are intended to ensure a commitment on the part of the EU institutions to consider including all LULUCF credits under the same terms as those agreed under any future UNFCCC agreement or the Kyoto Protocol (if no other agreement is reached).

1. Recital

Current ETS Directive	Proposed SFM Amendment
	New Recital 22b
[…]	***In order to allow the Community to***

	comply with its international commitments and to allow the linking of the Community scheme with other carbon trading regimes, this Directive should be reviewed and amended on the basis of any applicable international agreements under the United Nations Framework Convention on Climate Change.

The new recital calls on the Community institutions to review and propose an amendment to the Directive once any future agreements on climate change are concluded.

2. Requiring the Commission to Review the Directive and Consider Proposing Amendments to Include Forest Based Carbon Credits in the Light of Any Future UNFCCC Agreement

Current ETS Directive	Proposed SFM Amendment
	New Article 30(1)b
[…]	***On the basis of any agreement that the Community concludes or expects to conclude under the United Nations Framework Convention on Climate Change, the Commission shall draw up a report considering:***
	(a) the inclusion within the Community scheme of credits generated by land use, land use change and forestry activities under the same terms as those agreed under the international agreement;
	[…]
	The Commission shall submit this report to the European Parliament and the Council by 30 June 2010, accompanied by a proposal if appropriate.

This amendment requires the Commission to consider including LULUCF credits within the ETS under the same terms as those agreed within the framework of the UNFCCC.

The phrase "*expects to conclude*" and the reference to 30 June 2010 are aimed at ensuring that the Commission presents its proposal before any adopted agreement enters into force or the Community formally ratifies it. Hopefully, any future international climate change scheme will be agreed by mid 2010.

Appendix 3

Endnotes

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[59] Council of the European Union, *Presidency Conclusions of the Brussels European Council of 8-9 March 2007* (7224/07), Brussels (9 March 2007).
[60] Point Carbon, *A New Climate for Carbon Trading* (13 March 2007).
[61] In early 2006, many sophisticated market players anticipated a significant rise in the price of EAUs during the first phase of the ETS. For example, in January 2006, the Deutsche Bank predicted an increase of the price to between €40 and 50 per ton during the following 12 to 18 months.See Deutsche Bank, "EU Emissions Trading: Carbonomics: fundamentals still point to much higher prices," 20 January 2006. Similarly, Goldman Sachs predicted that the price of the EAU would stabilize at around €35 per ton for the remainder of the first phase. Goldman Sachs, *Carbon - Putting the Fizz into European Power Markets* (13 February 2006). JPMorgan, on the other hand, predicted that the price of EAUs would be around €50 per ton for the remaining of the first phase and around €40 during the second phase; JPMorgan, *All You Ever Wanted to Know About Carbon Trading* (11 January 2006). Published on the Internet at: (http://www.egc.co.im/documents/carbon_trading.pdf).
In the end, the price of EAUs peaked at €32 in April 2006, just before it collapsed when EU Member States published their emissions verification data showing an over-allocation of allowances.
[62] UBS, *Climate Change: Beyond Whether* (2007); Goldman Sachs, *Carbon - Putting the Fizz into European Power Markets* (13 February 2006) (stressing that the price of EUAs is now "reflected in the power price").
[63] Eurostat, *Eurostat News Realease*,93/2006. Published on the Internet at: (http://epp.eurostat.ec.europa.eu/pls/portal/docs/PAGE/PGP_PRD_CAT_PREREL/PGE_CAT_PREREL_YEAR_2006/PGE_CAT_PREREL_YEAR_2006_MONTH_07/8-14072006-EN-AP1.PDF).
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have to meet the European guidelines; and the German homeowners who pay 25 percent more for electricity than they did before -- even as their utility companies earn record profits." S. Steven, "Europe's Problems Color US Plans to Curb Carbon Gases" *The Washington Post* (9 April 2007). Published on the Internet at: (http://www.washingtonpost.com/wp-dyn/content/article/2007/04/08/AR2007040800758.html).

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