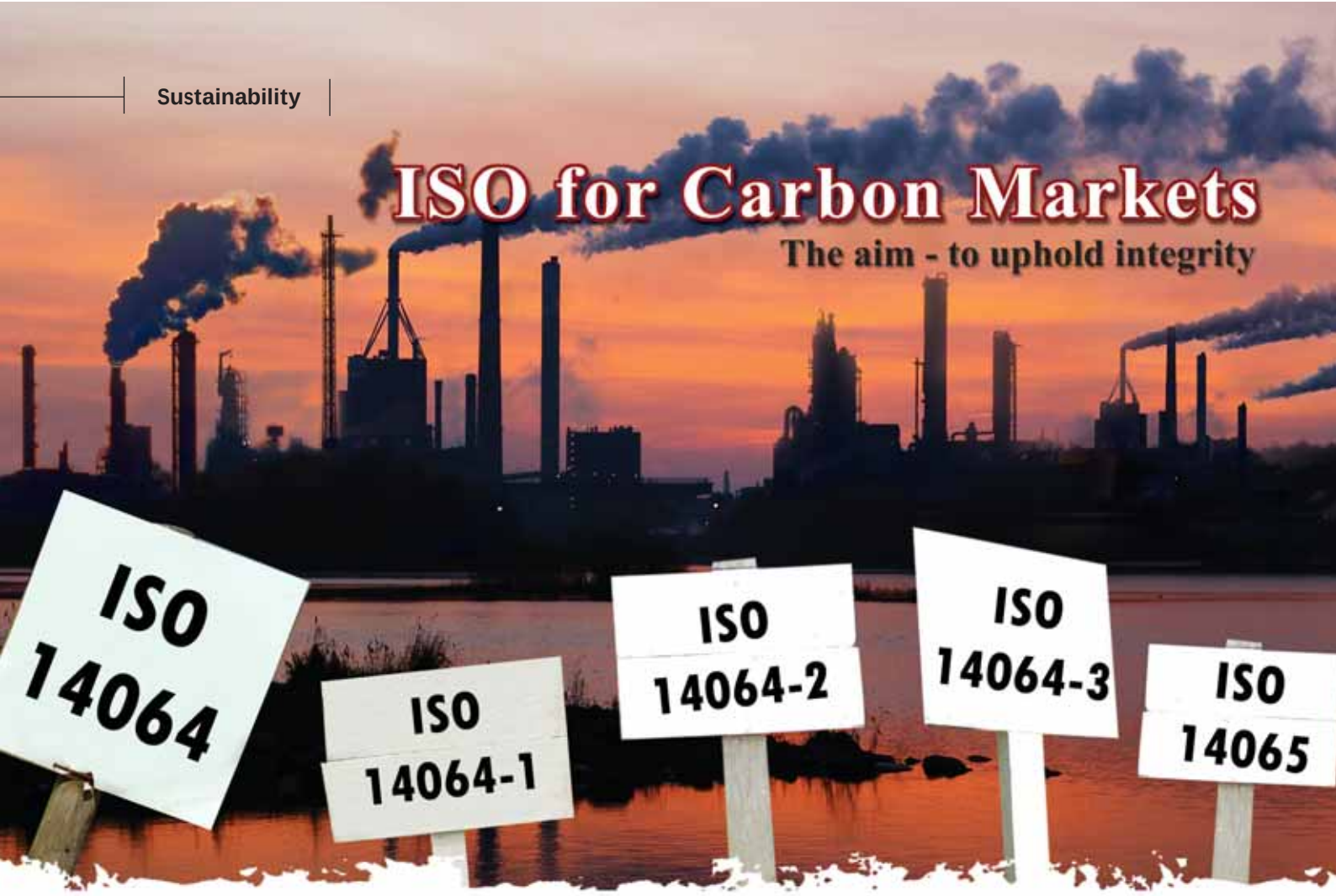
ISO for Carbon Markets

The aim - to uphold integrity



International standards relating to climate change are finding wide acceptance. These range from measurement of specific greenhouse gas (GHG) emissions to generic accounting standards, leading to who should pay the emission price for the footprint of goods produced and manufactured in Asia and sold in the developed countries.

Shortly after the publication of the ISO 14064 standard for GHG accounting and verification in March 2006 and the ISO 14065 in April 2007, there was widespread uptake of these standards by leading GHG programmes and organisations dealing with regulated and voluntary markets worldwide.

The first standard ISO 14064, in three parts, provided rigorous and credible accounting to maintain integrity in the market. The second standard ISO 14065 allows the emissions reduction or inventories to be verified or validated under ISO 14064 Part 3 by a validation or verification body accredited to ISO 14065.

ISO 14064-1:2006, GHG Part 1: Specification with guidance at the organisation level for quantification and reporting of GHG emissions and removal, specifies verifiable requirements for organisations to design, develop, maintain and report on emissions throughout the inventories, and deals with quantifying GHG emissions through monitoring and reporting programmes.

ISO 14064-2:2006, GHG Part 2: Specification with guidance at the project level for quantification, monitoring and reporting of GHG emission reductions or removal enhancements, specifies verifiable requirements for GHG project programmes to plan, monitor, quantify and report projects, including resultant GHG emission reductions or removal enhancement units. This is useful for proponents of voluntary projects, regulatory credit-based schemes and government administrators designing programmes and schemes.

ISO 14064-3:2006: GHG Part 3: Specification with guidance for the validation and verification of GHG assertions, specifies verifiable requirements for validation/verification bodies and validators/verifiers in providing assurance of GHG claims from organisations using Parts 1 and 2 of the standard. The Part 3 standard aims to be applicable to any GHG scheme and will be of interest to validation/verification bodies, validators/verifiers and GHG scheme administrators.

The ISO 14065:2007, GHG – Requirements for GHG validation and verification bodies for use in accreditation or other forms of recognition establishes the requirements that allow accreditation bodies and

The uptake of GHG standards is summarised in Table 1.

Being regime neutral, these standards are readily applied in a number of situations within the major national and industry initiatives as indicated in Table 2.

The growing use of ISO 14064 and ISO 14065 in regulated and voluntary trading schemes is a testament to the versatility in linking GHG markets. The broad appeal has created consistent requirements irrespective of the country in which the project or industry is located.

It further implies that regular users and multi-stakeholders have effectively promoted the use of these standards to introduce innovations in industry. Standardisation provides a floor but should not become a ceiling since the objective is to ensure that agreed measurable and verifiable targets are met for significant reduction of GHG and improvement in climate change. This facilitates industry performance and freer trade in the global economy.

Benefits of ISO standards

Due to great demand for ways to measure the carbon footprint, efforts are being made to develop

Table 1: Market Demand and Uptake of ISO 14064 and ISO 14065

No.	Application of ISO 14064 and ISO 14065	Date and Activity
1	ISO 14064-1, 1SO 14064-2 & ISO 14064-3	March 2007
2	ISO 14065	April 2007
3	World Resource Institute (WRI) and World Business Council for Sustainable Development (WBCSD)	December 2007 signed MOU with ISO
4	International Emission Trading Association (IETA) and WBCSD launched Voluntary Carbon Standard (VCS)	November 2007
5	WRI/WBCSD GHG Protocol linked to UNFCCC Kyoto Protocol CDM	November 2007
6	GHG Management Institute launched (GHGMI)	October 2007
7	WRI/WBCSD Partnership with GHG Management Institute (GHGMI)	December 2007
8	Canada 'Technology Early Action Measures'	Training courses 2005/06
9	Australia 'Greenhouse Challenge Plus'	WRI/WBCSD Protocol
10	USA DOE GHG Registry	ISO14064-3
11	International Petroleum Industry Environmental Conservation Association (IPIECA)	Adopts ISO 14064 in accounting guidelines
12	New York Mercantile Exchange (NYMEX)	Included VCS
13	GE Energy Financial Services and AES launched Greenhouse Gas Services (GGS)	2007, sells GHG credits
14	Det Norske Veritas (DNV)	ISO 14064
15	Lloyd's Register Quality Assurance (LRQA)	ISO 14064
16	British Standards Institution (BSI)	ISO 14064
17	Societe Generale de Surveillance (SES)	ISO 14064
18	Canada Standards Association (CSA)	ISO 14064

Source: Baumann, 2008

Table 2: Industries Using ISO 14064 and ISO 14065 GHG Standards

No.	Industries	Project Protocol Using ISO 14064 and ISO 14065
1	Bio-energy	Bio-fuel, Biogas, Biomass, Energy efficiency
2	Energy and electricity	Wind power, Small hydro power, Electricity grid baseline
3	Oil and gas	Enhanced oil recovery, Oil and gas sector
4	Mining	Coal mine methane, Abandoned mine methane
5	Waste recovery	Waste heat recovery, Waste water treatment, Landfill gas
6	Forestry	Afforestry
7	Meat	Beef feeding, Beef life cycle, Diary operations, Pork operation
8	Soil	Composting, Tillage, Soil carbon sequestration
9	Industrial	N_2O destruction, Municipal operations on energy systems
10	Transportation	Fuel switching

Source: Baumann, 2008

methodologies but these are often inconsistent. ISO standards could play an important role in bringing together a common set of rules outlined in ISO 14064 and ISO 14065 as the basic building blocks in the emerging protocols.

This has received broad multilateral agreement with ISO.The benefits of using the ISO standards base for quantification of carbon footprint, offset and carbon neutral claims are seen in several areas.

- ***In countries that did not sign the Kyoto Protocol:*** Where the regulatory market has yet to be firmly established, the voluntary market is thriving. In the US which has not signed the Kyoto Protocol, about 68% of the customers understandably use the voluntary carbon standard (VCS).

  The popularity is due to the founders of the VCS having included the ISO 14064 and ISO 14065 to ensure rigorous and creditable accounting of carbon to maintain integrity in the market. In the VCS, the emission reductions and inventories are verified and validated in accordance with ISO 14064-Part 3 to use a validation or verification body accredited to ISO 14065.

- ***Use in CDM Projects:*** Interestingly, the use of ISO 14064 is growing in Asia and Africa especially in the former where there are more Clean Development Mechanism (CDM) projects than elsewhere.Through WRI/WBCSD cooperation, ISO 14064 and ISO 14065 together with the WRI/WBCSD GHG Protocol are being used in the quantification of GHG emission reductions in CDM projects.

- ***In UNEP Programme:*** The United Nation Environment Programme (UNEP) launched a new Carbon Neutral Network at end February to provide online support for sharing experiences and good practices. It involves a network of countries, cities, companies and others who are bold enough to commit to climate neutrality.

  UNEP has always encouraged voluntary action by business to complement regulation and deal with environmental issues in a more proactive manner. This includes use of voluntary standards and Codes of Practice.

  Much progress has been achieved through regular and multi-stakeholder discussion and revision to ensure effective promotion of new technologies and innovations in matters such as eco-labelling and life-cycle management of carbon footprint.

- ***Use of other ISO Standards:*** Besides ISO 14064 and ISO 14065, tracking carbon emissions would need to use ISO 14040 LCA standard. It provides the confidence of meeting the robust and practise-proven requirements for performing transparent and acceptable carbon footprint calculations over the life cycle of a products, service and events.

  The standard provides guidance on how to measure the potential environmental impacts of resource use, wastes and emissions from both the product system as well as climate change impacts.

- ***Communication of carbon neutral claims***
  The ISO 14020 series of standards on environmental labelling provide specific environmental communication tool and guidance related to product labels and declarations.

In particular, ISO 14025 provides guidance on producing environmental product declaration which can be used to document the environmental performance of a product across its life cycle. This standard is intended to support informed choices of environmentally preferable products for the customers.

- ***Integrating environmental aspects into product design and development process:*** The ISO 14062 standard provides guidance on how to manage and reduce environmental burden including the carbon footprint of both organisation and products. ISO Guide 64 also helps writers to take the environmental impact into consideration in the development of products standards.

Harmonising best practice

While it is clear that ISO standards and guidance documents can help companies measure and reduce their carbon footprint, there are other areas where use of international ISO standards can help harmonise best practice to measure the carbon footprint of a product, service or event.

This is to enable apples-to-apples comparisons between products. Consumers need the confidence that companies are using fair and accurate calculations.

Through the adoption of ISO standards, the quantification is standardised to overcome some approaches that:

- Measure only some GHG, e.g. CO_2
- Measure a portion of the production system, e.g. measuring emissions during manufacturing
- Measure GHG emissions during transport
- Do not include emissions associated with material production
- Use of different emission factors
- Ignore variation of how energy and transportation fuels are treated
- Use economic input/output model

ISO standards can help harmonise codes of best practice improving the measurement of the carbon footprint with better informed choices on:

- where to draw the boundary of the analysis;
- selection of quantification methodologies;
- collection of credible primary and secondary data;
- appropriate emission factors; and
- what GHG to include.

As ISO 14040 LCA is being recognised worldwide, especially by the European Union, the standards provide guidance on how to measure the potential environmental impacts, and encourage users to look at climate change impacts and their normalisation in terms of the other categories of impact like acidification.

The ISO standards also help in communicating carbon neutral claims by documenting the environmental performance of a product across its life cycle, so that customers can have better informed choices of environmentally preferred products.

More importantly, the ISO environmental management systems standards on product design and development process provide valuable guidance on how to reduce the carbon footprint of both organisation and products.

Currently ISO TC 207 SC7 is developing two new standards – ISO 14066 on how to verify the verifiers and ISO 14067 on carbon footprint of product, services and events. These standards are to support the measurement of reduction of carbon footprint of organisations, products and services.

Consumers, businesses, other stakeholders and well as climate-change watchers can examine the contribution of the oil palm industry to the carbon footprint. The industry may be better served by the emerging ISO carbon footprint standards.

All in all, a comprehensive suite of international ISO standards covering GHG emissions tracking and accounting will help organisations operating in a wide range of sectors to play an effective role in reducing their carbon footprint and curbing climate change.

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