



## Linking greenhouse gas markets around the world

by Tom Baumann, Co-Founder and Chief Executive Officer of ClimateCHECK, Co-Founder and Director of Professional Programs, GHG Management Institute

Shortly after the publication of the ISO 14064 standards for greenhouse gas (GHG) accounting and verification in March 2006, the climate change sector embraced these policy-neutral tools, developed by 175 experts from around the world between 2002 and 2006. The relevance of ISO 14064 is witnessed by its adoption (with modifications in some cases) or recommendation by leading GHG programs and organizations in both regulated and voluntary markets worldwide.

Since the publication of ISO 14064, the standard has been adopted at a rate of one major GHG initiative every six weeks. The same holds true for ISO 14065, which after its release in April 2007 has become a building block in GHG program design.

The inherent versatility of ISO 14064 and complementarities with leading GHG initiatives, such as the World Resources Institute (WRI) and the World Business Council for Sustainable Development

(WBCSD) GHG Protocols that were essential design principles of ISO 14064, are now contributing to its widespread use.

### Widespread market demand and uptake

Application and experience with ISO 14064 is generally in combination with established guidance, rules and quantification methodologies specified by GHG programs, as well as government and industry GHG guidelines. The following examples present some of the leading organizations and major initiatives that have adopted ISO 14064.

In December 2007, WRI and WBCSD entered a memorandum of understanding (MoU) with ISO for the joint promotion of the ISO 14064 GHG standards (what to do) and WRI/WBCSD GHG Protocols (how to do it). This MoU formalizes the existing cooperation between the GHG Protocol and ISO 14064 established during the development and updating of these protocols and standards.

In November 2007, a multistakeholder initiative led by the International Emission Trading Association (IETA), the Climate Group, and WBCSD launched the Voluntary Carbon Standard, which incorporates ISO 14064-2:2006, *Greenhouse gases – Part 2: Specification with guidance at the project level for quantification, monitoring and reporting of greenhouse gas emission reductions or removal enhancements*, ISO 14064-3:2006, *Greenhouse gases – Part 3: Specification with guidance for the validation and verification of greenhouse gas assertions*, and ISO 14065:2007, *Greenhouse gases – Requirements for greenhouse gas*

*validation and verification bodies for use in accreditation or other forms of recognition, the WRI/WBCSD Project GHG Protocol, as well as links to components of the UNFCCC Kyoto Protocol Clean Development Mechanism (CDM).*

**“The growing widespread use of ISO 14064... is a testament to its versatility, as well as its contribution to linking GHG markets around the world.”**

In October 2007, the Greenhouse Gas Management Institute (GHGMI) was launched with training courses based on the WRI/WBCSD GHG Protocols and the ISO 14064 GHG standards. At the UNFCCC meetings in Bali, Indonesia, the GHG Protocol team became a formal partner with GHGMI.

### Major national and industry initiatives

In Canada, training courses for GHG validation/verification based on ISO 14064 were developed and delivered by the federal government between 2005 and 2006. ISO 14064-2 was developed within the GHG technology program – *Technology Early Action Measures*. Following this lead, the provincial government of Alberta recently established an offset system and approved a series of GHG protocols based on ISO 14064-2 and ISO 14064-3.

In Australia, the federal government's Greenhouse Challenge Plus program incorporates WRI/WBCSD Corporate GHG Protocol and ISO 14064-1:2006, *Greenhouse gases – Part 1: Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals*, into the Reporting Guidelines.

In the USA, the federal government's department of energy (US DOE) 1605b GHG Registry recommended ISO 14064-3 for GHG verification as good practice for conducting verifications.

In addition, industry associations have incorporated ISO 14064 into their GHG accounting guidelines, for example, the International Petroleum Industry Environmental Conservation Association (IPIECA) published the Oil and Natural Gas Industry Guidelines for Greenhouse Gas Reduction Projects.

In December 2007, the New York Mercantile Exchange (NYMEX) established the Green Exchange which trades several environmental commodities, including Voluntary Carbon Units (VCUs – created by the Voluntary Carbon Standard, see article by Edwin Aalders and Mark Kenber on page XX) and Verified Emissions Reductions (VERs) associated with various leading carbon credit standards (e.g. ISO 14064).

In 2007, GE Energy Financial Services and the AES Corporation established Greenhouse Gas Services, LLC (GGS, a partnership that will create and sell GHG credits in the voluntary market. The GGS Standard of Practice and methodologies (available at <http://www.ge-aes.com>) is based primarily on the ISO 14064 GHG standards, and also incorporates the WRI/WBCSD Project GHG Protocol, as well as elements of UNFCCC Kyoto Protocol Clean Development Mechanism (CDM) approved methodologies.

Additional evidence of the market demand for ISO 14064 services and training is provided by the growing number of leading standards and certification organizations, such as Det Norske Veritas (DNV), Lloyd's Register Quality Assurance (LRQA), British Standards Institution (BSI), Société Générale de Surveillance (SGS), and Canadian Standards Association (CSA). As well, management software companies are incorporating ISO 14064 into their software products.

### Applicable and versatile

The ISO 14064 GHG standards are applicable outside of emission trading markets. Beyond the application of ISO 14064 for GHG project accounting, GHG inventory accounting and GHG validation/verification, the lifecycle framework designed in ISO 14064-2 enables it to be also applied to GHG technology and product accounting. In fact, to a large extent, ISO 14064-2 emerged from a GHG technology accounting standard

still in use in Canada and applied to nearly 250 technology projects, totalling over USD 2,5 billion in investments. This versatility of ISO 14064-2 helps bridge the advancement of new technologies and products with GHG markets – on the basis of the same GHG standard.

### **“ISO 14064 will continue to reveal its policy-neutral value added throughout technical and market-based approaches to manage climate change.”**

As part of the ISO environmental management standards developed by ISO technical committee ISO/TC 207, ISO 14064 incorporates elements of management systems standards that enable continuous improvement of GHG emission management, and the underlying quality management of reported GHG emissions. Organizations that have already started GHG reporting, whether for voluntary or mandatory purposes, can realize additional value using the management system framework of ISO 14064.

In the case of ISO 14064-2, several industry and sectoral GHG protocols, in many cases accompanied by a quantification spreadsheet tool, have been developed around the world by industry associations as well as government and voluntary GHG programs.

Examples of project protocols include biofuel, biogas, biomass, wind

power, small hydro power, electricity grid baseline, energy efficiency, enhanced oil recovery, oil and gas sector, coal mine methane and abandoned mine methane, waste heat recovery, waste water treatment, landfill gas, afforestation, beef feeding, beef lifecycle, dairy operations, pork operations, composting, tillage, and soil carbon sequestration, among others.

Additional methodologies based on ISO 14064-2 have been developed for numerous project types ranging from industrial processes (e.g. N<sub>2</sub>O destruction), municipal operations (e.g. district energy systems and energy efficiency), and transportation (e.g. fuel-switching), to name only a few.

The UNFCCC meeting in Bali, Indonesia, in December 2007, made it clear that climate change is a political challenge requiring a multifaceted set of approaches and tools to achieve GHG reduction through comprehensive actions around the world.

The growing widespread use of ISO 14064 for both regulated and voluntary purposes is a testament to its versatility, as well as its contribution to linking GHG markets around the world. Although ISO 14064 is only now receiving significant international attention, increasing understanding and experience with the application of ISO 14064 will continue to leverage its policy-neutral value added throughout technical and market-based approaches to manage climate change. ■

### Related resources :

Launching of ISO 14064 for greenhouse gas accounting and verification, ISO Insider March-April 2006. [www.iso.org](http://www.iso.org)

ISO 14065 standard – New tool for international efforts to address greenhouse gas emissions, April 2007. [www.iso.org](http://www.iso.org)

ISO, WRI, and WBCSD press announcement of cooperation on greenhouse gas accounting and verification, December 2007. [www.ghgprotocol.org](http://www.ghgprotocol.org)

Voluntary Carbon Standard, November 2007. [www.v-c-s.org](http://www.v-c-s.org)

Technology Early Action Measures (TEAM). [www.team.gc.ca](http://www.team.gc.ca)

Sustainable Development Technologies Canada (SDTC). [www.sdtc.ca](http://www.sdtc.ca)

GE AES Greenhouse Gas Services, LLC – Company website, Standard of Practice and methodologies. [www.ge-aes.com](http://www.ge-aes.com)

### About the author



**Tom Baumann** is Chief Executive Officer of ClimateCHECK and serves as Director of Professional Programs for the Greenhouse Gas Management Institute. He is

the main author of ISO 14064-2:2006 *Greenhouse Gases – Part 2: Specification with guidance at the project level for quantification, monitoring and reporting of greenhouse gas emission reductions or removal enhancements.*