



#128

focus

Your gateway to International Standards



climate
ACTION



6

#128



20

ISO focus

May-June 2018



46



14



38



26



36-37 ANSI celebrates 100th anniversary
International Gender Champions
Standards expert on Forbes “Under 30” list
Celebrating excellence in Malaysia

ISOfocus May-June 2018 – ISSN 2226-1095

ISOfocus, the magazine of the International Organization for Standardization, is published six times a year. You can discover more content on our Website at iso.org/isofocus, or by staying connected with us on:



Head of Communication | **Katie Bird**

Editor-in-Chief | **Elizabeth Gasiorowski-Denis**

Writers | **Maria Lazarte, Barnaby Lewis, Clare Naden, Sandrine Tranchard**

Contributing writer | **Rick Gould**

Copy editor and Proofreader | **Vivienne Rojas**

Designers | **Xela Damond, Pierre Granier, Alexane Rosa**

Translator | **Alexandra Florent**

Subscriptions and back issues

If you enjoy ISOfocus, you can download the pdf for free or subscribe to receive printed issues through our Website iso.org/isofocus. You can also contact our customer service at customerservice@iso.org

Contributions

You can participate in creating this magazine. If you think your contribution can add value to any of our sections, please get in touch at isofocus@iso.org. Views expressed are those of the respective contributors and are not necessarily those of ISO or any of its members.

© ISO 2018

Published in Switzerland. All rights reserved.

Articles in this magazine may be reproduced for non-commercial purposes only. These may not be modified and must be properly referenced, with due credit to ISO being given. ISO may revoke this permission at its sole discretion.

For enquiries, please contact copyright@iso.org.



This magazine is printed on certified FSC® paper.



- 2** The time is now
Comment by Thomas Idermark.
- 4** #ISO45001 – We answered your questions live
Launching our OH&S standard in style!
- 6** The world’s climate agenda
Why ISO standards help scale up international efforts.
- 14** Levelling the playing field
On standardizing the language of climate change.
- 20** Building standards for the future we want
Let’s get ready for the climate challenge.
- 26** EcoServices’ flight to eco-friendly skies
The bottom line in going green.
- 30** Slam on the climate breaks
How ISO standards bring clarity and consistency.
- 32** Thailand’s incentive for a low-carbon future
Labelled for success.
- 38** The secret to unlocking green finance
Investing in our climate’s future.
- 46** Big polluters take a stand
When industries step up to the challenge.

The time is now



Photo: SIS

Thomas Idermark, CEO, Swedish Standards Institute (SIS).

It's for real now! There's been fierce debate on the climate issue for a long time, and doubts have been raised about the human impact on the earth's climate, as well as what this might mean. Powerful vested interests in sectors that have a lot to lose in the climate debate have done everything in their power to discredit or even hinder work in this area. This has even happened at the highest political level in some countries.

But it is no longer the case. The extensive research carried out by the Intergovernmental Panel on Climate Change (IPCC) and many other organizations has shown conclusively that anthropogenic climate change is a momentous issue for humankind. The consequences of climate change have now joined war as the major perceived threats of the future. These two areas are also often inextricably linked. No one who wants to be taken seriously now argues that the climate issue is not vitally significant for the development of our countries and societies. And it has happened quickly towards the end. The existence of the Paris Climate Agreement is no longer controversial, however debatable its conclusions may be.

While the situation is very daunting, it also inspires hope. Businesses and countries are now focusing on solving the challenges that, provided they are handled correctly, will

The climate has
no borders, and
neither has ISO.

provide fantastic opportunities for new technology and sustainable societies. This can't happen without collaboration. The climate has no borders, and neither has ISO. This is what makes it so important that the work carried out in different committees to identify best practice does not simply continue but also escalates.

One example of this is ISO 14080 on greenhouse gas management, which is designed to be an umbrella standard for all types of organizations that develop and identify methods for analysing needs and implementing climate actions. It is intended to support the application of stakeholders' own schemes, but most importantly other official frameworks such as the Paris Agreement and the Agenda 2030 climate goals. It also includes the carbon footprint of products, methodologies on climate actions, requirements and guidance on adaptation planning for organizations, etc. And we can expect to see many other initiatives in this area.

One aspect of this situation that inspires hope is that research, innovation and investment are starting to address climate issues at an ever faster pace. In my own country of Sweden, national consensus on the climate issue was achieved a long time ago. Sweden has been developing a long-term sustainable society for many years. A climate act came into force on 1 January 2018 that legally binds each successive government to pursue a climate policy based on Sweden's climate goals.

Sweden aims to release no net greenhouse gas emissions into the atmosphere by 2045, and subsequently to achieve negative emissions. By 2030, emissions in Sweden in the sectors that will be included in the EU's effort sharing regulation should be at least 63% lower than emissions in 1990, and at least 75% lower by the year 2040. Sweden has already phased out virtually all heating using fossil products.

We have active support for a transition to renewable energy sources and our industry is investing heavily in becoming climate neutral. At my own forestry farm, I generate electricity using solar panels, and also use geothermal heating and biofuels. Self-sufficiency is a fantastic feeling and one that I personally believe we can all enjoy soon. The huge challenge for us in Sweden and most other countries lies in the transport sector. But the revolution is already under way and I will never again buy a fossil-fuelled car!

ISO has a fantastic opportunity to demonstrate the significance of universal international agreements in the climate area. It generates commitment and grassroots support for change. This is exactly what we need so badly right now. So we must all become even more active in offering effective universal solutions. Those with a head start in this area will be the driving forces in research and innovation, as well as trade and export. The climate issue is not just a threat. It is an integral part of our future solutions for creating sustainable societies. *This* is the future and who wouldn't want to be a part of it? ■

#ISO45001

*We answered
your questions live!*

Total duration:
47 minutes

**47 live
comments**

Over **340**
live views



We couldn't launch the first International Standard on occupational health and safety (OH&S) without a social media campaign. The week-long event showcased articles, infographics and videos as well as a whole microsite dedicated to the new standard: <https://spotlight.iso.org/iso45001>.

The highlight of our campaign was an eagerly anticipated "live" conversation with four of the experts behind the development of ISO 45001:

- **David Smith**, Chair of ISO/PC 283¹⁾
- **Charles Corrie**, Secretary of ISO/PC 283
- **Jan Toft Rasmussen**, OH&S trade union expert, and
- **Richard Jones**, a safety and health consultant

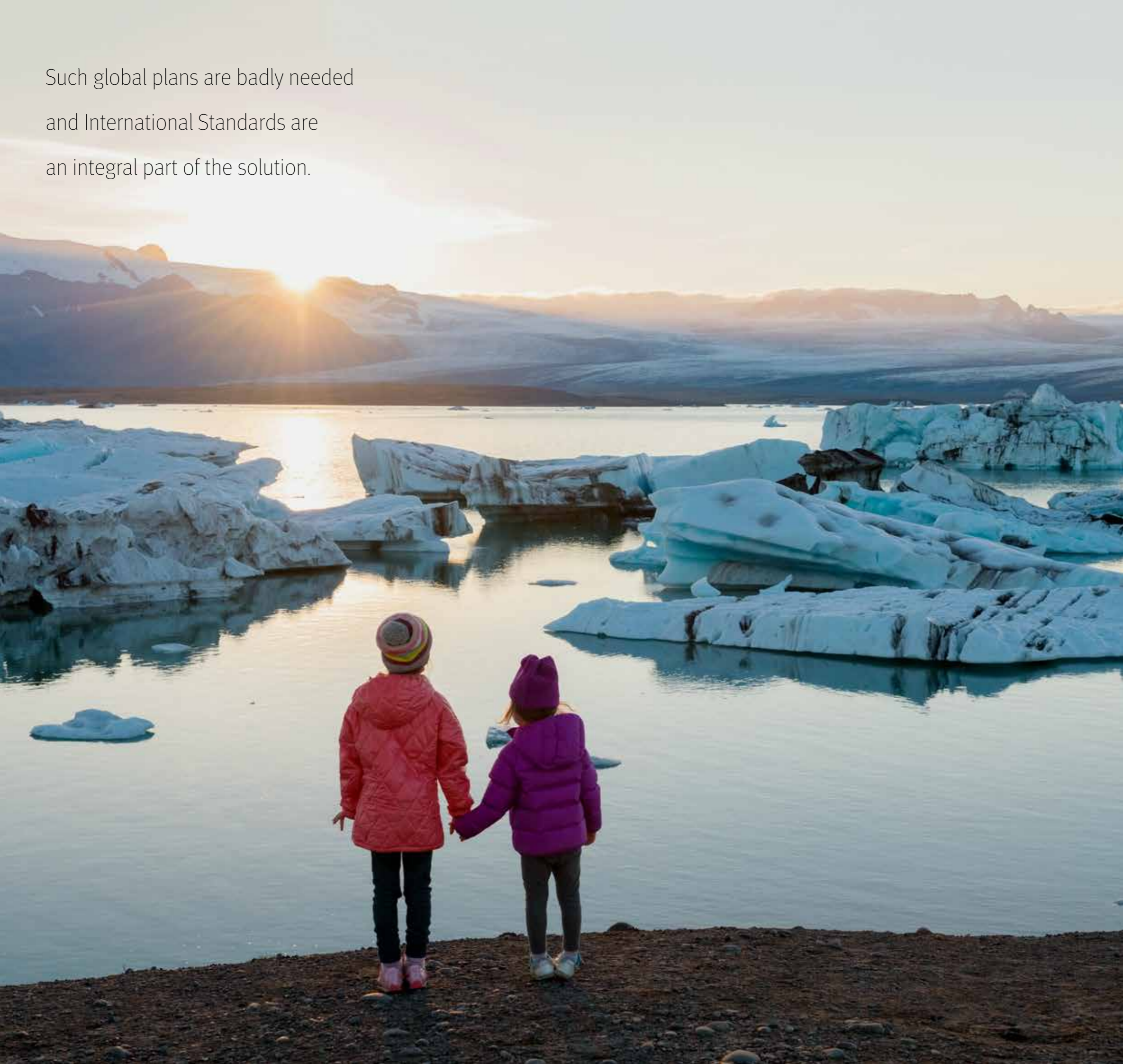
This was a unique opportunity for people around the globe to ask any questions they had about the standard live via YouTube.

¹⁾ ISO/PC 283, *Occupational health and safety management systems*, is the project committee responsible for the development of ISO 45001.

If you missed the event, don't worry! It's now available as a recording and is a great resource for anyone wanting to learn more about ISO 45001.



Such global plans are badly needed
and International Standards are
an integral part of the solution.



The world's *climate agenda*

by Sandrine Tranchard

From the first Earth Summit in 1972 to the Paris Agreement in 2015, efforts to tackle climate change by reducing global warming need to be accelerated and further enhanced to be impactful. ISO is in a unique position to bring together all actors by setting standards that will frame lasting solutions.

Since the United Nations Earth Summit in Stockholm in 1972, scientists, governments and organizations worldwide have highlighted critical threats to environmental thresholds. International initiatives followed, such as the Montreal Protocol on Substances that Deplete the Ozone Layer in 1986 and the Intergovernmental Panel on Climate Change (IPCC) set up in 1988 to provide policy makers with regular assessments of the scientific basis of climate change, its impacts and risks, and options for adaptation and mitigation.

Taking action

The process of action to reduce global warming formerly started in the 1990s with the birth of the United Nations Framework Convention on Climate Change (UNFCCC) in 1994. Signatory countries meet annually at the Conferences of the Parties (COP) to further the climate debate. COP summits serve as the formal meeting of the UNFCCC Parties (or countries) to assess progress in dealing with climate change and, as of the mid-1990s, to negotiate the Kyoto Protocol to establish legally binding obligations for developed countries to drastically reduce their greenhouse gas (GHG) emissions.

COP21 in December 2015 famously led to the signing of the Paris Agreement, which sets out a global plan to limit global warming to well below 2 °C. Such global plans are badly needed and International Standards are an integral part of the solution. Nick Blyth, Vice-Chair of the ISO Technical Management Board Climate Change Coordinating Committee Task Force (ISO/TMB/CCCC TF), explains why International Standards and the potential of member states and policy makers in supporting the climate change framework are so important.

He says: “All countries in the world signed the Paris Agreement, making commitments not just for governments but also reflecting an unprecedented momentum for action from cities, companies and communities (the so called “non-state” actors). For these actors and for their governments, International Standards have a unique role to play. They offer a route for building effective standards, frameworks and tools, all developed through international consensus and capable of underpinning the growth of new technologies, markets and economic transformation.”

Leveraging our strength

The role of ISO standards in climate change history has also evolved. The year 1996 was a first step, with the publication of ISO 14001 on environmental management. ISO members and technical committees are now looking into addressing climate change aspects in their respective standards areas. José Luis Hernández, Secretary of the ISO/TMB/CCCC TF, explains: “Some committees have even established a working group to identify and address climate change aspects. There is also a big trend to focus on climate



**ISO has
produced
more than 600
environment-
related
standards.**

change adaptation. Traditionally, ISO climate change standards were focusing primarily on mitigation.”

GHG emissions quantification, monitoring and reporting, and promoting good practice in environmental management and design, are just some of the ways in which ISO International Standards help organizations address climate change. ISO has produced more than 600 environment-related standards, including those that help to open world markets to clean energy and energy-efficient technologies and support climate change adaptation and mitigation schemes.

Blyth points out that ISO standards are already well developed in climate change mitigation, providing credible, accepted approaches that measure and account for GHG emissions, along with management system standards, helping organizations to plan and take effective actions. He says: “To further support actors in addressing and responding to the impacts of climate change, a new adaptation framework standard is well under way, along with developments assessing vulnerability and risk and a framework for climate actions.

“Opportunities, however, are not limited to these specific and underpinning standards. A wide range of mainstream standards are in development and, with new guidance, these, too, can make their own contribution to climate adaptation and carbon reduction.”



Photo: UN Climate Change

The UN Climate Change Conference (COP23) took place in November 2017 in Bonn, Germany.

These new standards will improve the effectiveness of climate programmes.

The standards solution

ISO is also developing new international framework standards to assist public and private actors in meeting climate targets aligned with the Paris Agreement. Hernández says: “These standards are aimed at establishing a framework and principles for methodologies on climate actions, adaptation to climate change, and assessing and reporting investments and financing activities related to climate change.”

These new standards will serve as an effective and transparent tool to communicate results and allocate resources to meet the climate change goals of organizations and governments of moving to a low-carbon and climate-resilient society, and to improve the effectiveness of climate programmes.

ISO held a side event at COP23 and presented standards related to climate change. Hernández says: “We had an opportunity to showcase some of the work that ISO is

doing in areas such as environment and energy management, climate change adaptation, climate change finance and climate action, and the role that International Standards play in supporting non-state actors in light of the Paris Agreement. In this regard, a growing interest and involvement of non-state or non-party actors to address climate change is becoming increasingly relevant.”

Building on the best ideas

Marsha Cheddi, a Team Leader in the Sustainable Development Mechanisms Programme at the United Nations Climate Change Secretariat, stresses the importance of quantification, monitoring, verification and reporting frameworks in tracking progress towards climate goals. COP side events, according to Cheddi, can bring together diverse climate stakeholders to share information and experiences – party and non-party stakeholders, private-sector companies, cities, inter-governmental organizations, investors and civil society organizations. “A body like ISO can use a side event, for example, to explain its present standards and standards on the horizon,” she says. “A side event might generate important ideas on how existing and future standards could be used to help address climate change.”

One of the most important tasks of the 24th Session of the Conference of the Parties to the United Nations Framework Convention on Climate Change (COP24), which will take place in December 2018 in Poland, will be to work out and adopt a package of decisions to support the implementation of the Paris Agreement.

It is clear that standards development organizations can make a significant contribution. Cheddi explains: “At COP24, Parties are expected to finalize the ‘operating manual’ for implementation of the Paris Agreement. The slogan, ‘further, faster, together’, says it all. Everyone must come together – the public and private sectors, party and non-party actors – to scale up climate action now to meet the goals of the Paris Agreement.

“A standards body like ISO can contribute by anticipating the needs of stakeholders and creating new standards or improving existing standards, and by looking for ways to contribute to the process. For example, in reading the conclusions from each negotiation session, interested stakeholders can find out if Parties agreed to launch calls for input from non-party stakeholders. These kinds of inputs are critical in supporting the international response to climate change.” ISO is encouraged to use these opportunities to provide written input. ■



The road from

Stockholm to standards

STOCKHOLM 1972

- UN Conference on Human Environment

First time governments actively address global environment issues

RIO 1992

- Earth Summit

Countries focus on a broader issue: the relationship between environmental trends and development

Rio Declaration + Agenda 21

Creation of United Nations Framework Convention on Climate Change (UNFCCC)

led to

16 February 2005
Kyoto Protocol

NASSAU 1994

- COP1

ENVIRONMENT
ISO 14001 (environmental management) – 1996*
+ ISO 14000 family

ENERGY

ISO 50001 (energy management) – 2011*

PARIS 2015

- COP21

Plan to limit global warming to below 2°C

Paris Agreement

BONN 2017

- COP23

Initiatives launched to help countries adapt to the realities of climate change

MARRAKESH 2016

- COP22

USD 100 billion pledged annually until 2020 to help developing countries

On the horizon...

KATOWICE 2018

- COP24

FUTURE STANDARDS

CLIMATE CHANGE

- ISO 14090 (adaptation to climate change)
- ISO 14091 (vulnerability assessment)
- ISO 14092 (adaptation planning for communities and governments)

CLIMATE ACTION

- ISO 14080 (methodologies for climate action)

CLIMATE FINANCE

- ISO 14008 (monetary valuation of environmental impacts)
- ISO 14030 (green bonds)

* Date of first publication



Levelling *the playing field*

by Barnaby Lewis

For manufacturers and consumers alike, the environment is a major concern. It's hardly surprising, therefore, that alongside questions such as "is this product right for me?", buyers of goods and services are now asking: "What impact does my purchase have on the planet?". We look at how International Standards can help us to compare like with like, when it comes to assessing eco-credentials.

I remember sitting in a basic class in economics, a few years ago, and being told what a commodity is. "Take rice, for example. It doesn't matter what kind of field it was grown in, whether it was planted by hand or machine, grown in a paddy field in India or a large farm in the USA. It sells for the same price around the world, and the people who eat it neither taste these differences nor expect it to have any special characteristics. It's just rice."

Makes sense, I thought, until my mind drifted to my own kitchen cupboard and its boxes of Indian basmati, Italian risotto, and even special rice for sushi. So maybe all rices aren't created equal. And while it may take a demanding cook to recognize those traits, they can be detected, even just by looking.

What about products whose differences are less easy to spot? The ecological and ethical concerns that drive demand for organic eggs or locally grown produce are starting to be applied

to products as distinctive as smartphones or as generic as steel.

An agent for global change

Moving from big ideas to actions that bring change has never been easy. And when it comes to global warming, where the inherent complexities of climate science can serve as a camouflage for the hidden interests of professional obfuscators, it can be hard to find consensus. Fortunately, there's ISO, an organization built on finding the best way of doing things by getting experts to talk, and agree.

With growing recognition by scientists, and the public, of the threats posed by global warming, the United Nations (UN) established its Framework Convention on Climate Change (UNFCCC) in 1992. At the same time, ISO recognized the need for International Standards that would give practical tools to governments and businesses that were serious about addressing their impacts.

Moving from big ideas to actions that bring change has never been easy.



Just one year after the historic Rio “Earth Summit”, technical committee ISO/TC 207, *Environmental management*, was created. I was lucky to catch up with recently appointed Chair Sheila Leggett, and also Thomas Gourdon, Project Leader tasked with revising one the committee’s key standards – ISO 14064-1, which specifies principles and requirements at the organization level for the quantification and reporting of greenhouse gas emissions and removals.

Growing public awareness

I wanted to discover their perspectives and challenges, not only in developing standards of such complexity, but on how, in general, standards can play a role in addressing public concerns about the hidden emissions that differentiate two otherwise identical products. In short, what role is there for standards to help level the playing field by de-commoditizing products and services that have been produced in the least impactful way possible.

I began by speaking with Thomas Gourdon. A French national, Thomas is just one of the many experts fielded by ISO’s member for France, AFNOR, to contribute his technical expertise to the standardization process. Holding a master’s in Project Management, backed by years of experience in developing energy management strategies for local authorities and the private sector, Gourdon has been part of the standards world since 2009, as an AFNOR national expert on climate change. After seven years, he took on a new challenge as convenor of the working group responsible for quantification and reporting of greenhouse gas emissions and removals at the organizational level (ISO/TC 207/SC 7/WG 4).

I wanted to understand Thomas’ perspective on how ISO standards can help build public awareness and potentially contribute to better informed purchasing decisions. I began by asking him what triggered his own prominent interest in environmental issues.

“I was in my final year studying engineering... that would have been about 15 years ago. As you know, environmental awareness then was not so much part of public consciousness. And I remember hearing lectures on subjects that are much better understood today and thinking: ‘This is it!’ It was a flash realization: this is the area where I want to get involved.”

Has anybody got the map?

So what has been responsible for the change in public awareness in the intervening years? According to

Gourdon, “it’s clear that the Paris Agreement was a turning point. It meant that all countries within the UN system had to develop a climate strategy and turn that into action”.

Of equal importance to the conclusion that the planet is fast approaching a point of no return, was the wide recognition that a global problem demands a unified response. The time for action had arrived. Having built consensus among scientists and created awareness among the public, it was time to get the full commitment of non-state actors: companies, investors and local authorities. In that respect, the Paris Agreement was a “game changer”, according to Gourdon. “The UN really opened the door. As individual nations, we cannot reach our goal, so we need all actors to be part of the game.”

Gourdon is right to stress the breakthrough nature of the Paris Agreement. The research that was presented there and the subsequent Conference of the Parties (COP) meetings provided much needed agreement on what needs to be done. But even when a destination is in mind, there will be extensive debate about the best way to get there. It’s a necessary, if time-consuming, process and there continues to be lively discussion on how to tackle the problems. What everyone does agree on, is that without a map, we’re lost.

With a common language, we can talk

When I finally caught up with Sheila Leggett, it was a revelation. Leggett began her term as ISO Chair this year, building on a distinguished career as a biologist, ecologist, industry consultant and environmental legislator. Having served on Canada’s Natural Resources Conservation Board and, later, the National Energy Board, Leggett’s experience is so broad, and her knowledge so detailed, that I cannot hope to do it full justice here. But two things really stood out from our conversation. Firstly, that, while the need to act is more urgent than ever, we have reason to be hopeful – by asking the right questions, and taking the appropriate actions, we can limit climate change. Secondly, for some of the answers, we may need to look beyond science.



A passionate advocate for sustainable business, Leggett explained that a solid foundation of good science is just the minimum. “By getting the basics right, we can move on to consider more subtle points of view,” she tells me. When it comes to providing a map, the ISO 14000 family is the reference, and just one of the things that made her so keen to get involved in its ongoing development: “International Standards provide a common basis for discussion. There’s no way to move the debate on, to address complex topics, if every time we get to discussing the details, we go back and start questioning our fundamental assumptions.”

Enabler for dialogue

While an International Standard cannot prescribe solutions for every type of organization, common challenges can be identified, and a method for addressing impacts can be put in place. Of course, decision making is always informed by knowledge, but with the basics taken care of, nuanced perspectives can be

taken into consideration. This kind of sensitivity was prerequisite when Leggett chaired the Joint Review Panel for the Enbridge Northern Gateway Project¹⁾.

As Leggett points out, “the north-west of Canada is home to traditional groups who’ve lived there for centuries before we even turned up”. So are the solutions to modern problems of climate change and pollution somehow hidden in the wisdom of the ancients? Far from it, “there are no easy answers,” Leggett tells me, “but when you’re talking to people who’ve lived on the land, who’ve developed a relationship with it that we would struggle to understand, they can offer us insights that we can’t easily get through classical western science. The oral tradition has passed down knowledge across generations, which contributes to a totally different conception of how time works”.

1) The Enbridge Northern Gateway Project was a proposal to build and operate two pipelines and a marine terminal covering 1 178 km from Bruderheim, Alberta, to Kitimat, British Columbia.

As a legislator who’s been involved in developing rigorous national standards for the oil and gas industry, Leggett’s approach is heartening, and unexpected. She regards International Standards as an enabler for dialogue. More than that, as a vehicle for incorporating traditional views on seasonality or cycles into protecting a unique ecosystem. Leggett’s enthusiasm, and her ability to see the interconnectedness of things, people, processes and landscapes, reminds me of anthropologist Anna Lowenhaupt Tsing, who in *The Mushroom at the End of the World*, explores similar ideas of unexpected entanglements flourishing in the most unlikely places.

Something like a giant roller

To come back to the question of hidden differences, I asked both Thomas Gourdon and Sheila Leggett what role there is for standards in levelling the playing field. How can we make sure that businesses that recognize – and act – to limit their environmental impacts aren’t being unfairly punished?

“There are two answers to that,” Gourdon tells me, “on the one hand, there is legislation that discourages or prevents certain practices. One example of this would be carbon taxes”. Effectively, businesses have to pay to pollute so the cost of their actions is reflected in the prices of the products and, ultimately, in their profitability.

“The other way is through consumer awareness,” Gourdon continues. “Already in Europe there are labelling schemes for consumer goods that indicate in a clear way how that product performs in terms of consumption.” As consumers increasingly factor eco-performance into their purchasing decisions, it seems likely that a similar scheme could indicate not just impacts of using the product, but those that came from production. International Standards would provide a sound technical basis for developing such schemes.

A better way

It’s going to be a challenge to level the playing field. With so many bumps to iron out, from environmental policy to decent working conditions, we have a long way to go before we, as consumers, can be confident that we’re comparing like with like.

But we mustn’t be daunted and Sheila Leggett tells us why: “I remember my own father was an engineer who travelled the world, working on major infrastructure projects. There were so many complications to the work, and it often seemed like it was the human element that caused the biggest headaches, as though ‘if there were no people, this would be so much easier’. I have built my career on seeking to understand how fundamental assumptions and informed perspectives from a broad range of people can help us make the best decisions in the complex arena of industrial development, human well-being and preserving our global habitat.” ■



Common challenges can be identified.





Building standards

for the future we want

by Clare Naden

Despite the international community's best efforts, extreme weather events and slow-onset climate change continue to wreak havoc on our lives and livelihoods. Adaptation measures, however, will help us prepare for the worst – and new ISO standards are filling a gap by providing a badly needed high-level framework, helping organizations to cope and adapt.

Ever since the first Earth Summit in Rio in 1992, the climate change mitigation race has been on. From summit to summit, governments everywhere were urged to put in place measures to bring greenhouse gas (GHG) emissions down, along with Earth's temperature. Solar panel incentive schemes, hydroelectric dams, wind farms, electric transport and recycling campaigns are just some of the ways the world is tackling the issue – and yet, according to *The Emissions Gap Report 2017* published by UN Environment, total global GHG emissions continue to rise, although the rate of growth has decreased over the past few years.

Paying the price

We all continue to pay a high penalty, not only in fatalities and injuries from extreme weather events, but also in financial terms, with livelihoods lost, communities destroyed and massive rebuilding required. Last year, for example, was the costliest on

record for insurance pay-outs from natural disasters, with the most expensive hurricane season ever known in the United States and devastating floods in South Asia.

Extreme weather, made worse by climate change, along with the health impacts of burning fossil fuels, has cost the US economy at least USD 240 billion a year over the past ten years, according to the report *The Economic Case for Climate Action in the United States*, published by the Universal Ecological Fund, a non-profit that disseminates scientific data to address climate change.

In the UK, extreme water events, such as droughts or floods, attributed to climate change, have been taking a toll on both communities and business. Anglian Water, the UK's largest water and water recycling company, can vouch for that. "Over the last 40 years, there have been a number of droughts far worse than anyone had planned for, which had a big impact on our customers in terms of severe water restrictions," said Christopher Hayton, Anglian Water's Head of Public Affairs.



“At the same time, flood events are becoming far more difficult to predict, increasing risk, not only for our customers, but also for our own vital assets. These risks are being compounded by the rapid economic and housing growth that is forecast over the next 25 years.”

Urban migration, of course, is not just a challenge for the UK, it is a worldwide issue that will have a huge impact on global resources that are already under strain. Add to that the continued growth in the world’s population – projected to reach 9.7 billion by 2050, according to the United Nations Department of Economic and Social Affairs – and the pressure on our environment is not likely to lift any time soon.

Taking appropriate action

There is no denying that the world needs to have measures in place to cope with the adverse weather effects this will bring. One important measure is adaptation to climate change, i.e. taking appropriate action now to prevent or minimize damage when disaster hits, helping to save lives and money.

Although adaptation plans are already in place in some countries, more needs to be done, according to Zelina Zaiton Ibrahim, Vice-Chair of ISO’s subcommittee SC7, *Greenhouse gas management and related activities*, of technical committee ISO/TC 207, *Environmental management*.

“Studies published last year have shown a direct link between human causes of climate change and recent extreme weather events experienced,” she said. “Thus, the actions required to mitigate climate change and measures for adaptation must be done hand in hand. Mitigation and adaptation are two sides of the same coin in tackling climate change.”

At the United Nations Climate Change Conference in 2016 (COP22), one year after the Paris Agreement, USD 100 billion were pledged annually until 2020 to help developing countries, some of the worst affected by climate change, to both reduce their emissions and adapt to climate change. Of that, USD 20 billion will be dedicated to adaptation. Then at COP23 in 2017, a number of initiatives were launched to help countries adapt to the realities of climate change. One initiative is to help protect people living in Small Island Developing States from the health impacts of climate change; another is to improve the climate resilience of women in the Sahel region of Africa, between the Sahara and the Sudanian Savanna.

Governments and national authorities are also putting into place national adaptation plans, which often

Standards will make
a big difference.

require businesses and industries to submit progress reports regularly. Japan, for example, launched its Climate Change Adaptation Strategy in January 2017 to contribute to the Paris Agreement, with many local governments developing their own adaptation measures to fit.

The Hyogo Prefecture, for instance, located in the Kansai region, whose capital is Kobe, has developed its own Plan for Promotion of Measures against Global Warming, which incorporates the national policies and takes into account the goals, target and action plan of the Climate Change Adaptation Strategy. To engage local residents, the Prefecture also held workshops to establish the true impact of global warming.

Hiroshi Koshio, Director of Hyogo Prefecture’s Global Warming Solutions Division, said: “By better understanding the impacts, we can better consider what adaptation measures individuals or local communities can take. Ultimately, we hope that the results will be incorporated into the future adaptation plan.”

Improving resilience

Adaptation also makes good commercial sense and John Dora, of John Dora Consulting Limited, has a wealth of experience in this area. A consultant to governments, regulators, infrastructure operators and service providers on resilience to weather and climate change, Dora is also the Convenor of one of the working groups of ISO/TC 207/SC 7, involved in developing standards for climate change mitigation and adaptation.



“The disruption of an organization’s infrastructure by extreme weather damages both revenue and reputation,” he said. It can also have an impact on an organization’s duty of care and diligence. “Legally, heads of organizations have a duty of care and diligence and climate change is now seen as a risk that is both capable of causing harm and one that can be foreseen,” he said. “Therefore, directors should be considering the impact of climate change on their business, and failure to do so may bring liability for future losses.”

Anglian Water, for instance, considers this to be essential. It has invested over five billion pounds sterling in the past five years on schemes to build resilience and provide new infrastructure for growth. “We are now in the process of planning for the 2020-2025 period and will be investing even more in critical schemes and programmes to further our resilience to these challenges,” Hayton said. “To put it quite simply, if no action is taken to mitigate and adapt to the impacts of climate change, then it will not be possible to put enough water into the supply to meet the demand,” he added.

Becoming “climate adapted”

For Dora, resilience is key. To be considered resilient and “climate adapted”, organizations must embed the capacity for adaptation into all their functions, he said. They must have an understanding of how current and future weather conditions could affect their organization, and have operational and management strategies in place that enable it to respond, both in the present and over time, to climate challenges.

“Organizations need to have strategies in place to adapt to climate changes, ideally before climate change affects them,” he said. “And all of this needs to be part of ‘business as usual’, with the cost



taken into account so that it ultimately only has a marginal impact on financial performance.” Not an easy task... which is why standards can help.

Realizing a vision

A vision and framework are needed to anticipate weather changes and their impacts, and to incorporate these, along with adaptation measures, into an organization’s operations and management strategies. Hence, work is under way on a series of ISO International Standards to do just that.

The future ISO 14090, *Adaptation to climate change – Principles, requirements and guidelines*, will help organizations of all kinds put in place a structure to help them prepare for changes in weather patterns and implement adaptation measures.

It will be useful to any organization wishing to better understand the vulnerability, impacts and risks to these changes, allowing it to improve its resilience through adapting appropriately. Complementary standard ISO 14091 for vulnerability, impacts and risk assessment and technical specification ISO/TS 14092 for local governments and communities are also in the pipeline.

Filling the gap

Dora believes the standards will fill an important gap. “The United Nations Framework Convention on Climate Change (UNFCCC) developed *Annotated guidelines for the preparation of national adaptation programmes of action* and *Technical guidelines for the national adaptation plan process* for least-developed countries,” he said. “But there is a gap in that there is no high-level framework for adaptation at, for example, organization or community level to support the guidance. The standards are being designed to help all kinds of organizations, regardless of how far they are in developing an adaptation plan.”

For the Hyogo Prefecture, the standards will make a big difference. “We expect the upcoming adaptation standards to support local governments to contribute to the Paris Agreement and implement effective adaptation measures,” said Koshio.

Anglian Water also expects to benefit, even though its adaptation plans and programmes are already well established. “We await with interest the publication of these standards,” said Hayton, “and feel that international standardization in this area will be a valuable tool to help organizations anticipate and adapt to climate change.” ■



One important measure is adaptation to climate change.

ISO 50001 helps improve and update
our energy performance.

EcoServices' flight *to eco-friendly skies*

One of the key challenges for the aviation industry over the coming years is how to continue delivering safe, reliable, efficient and cost-effective air travel as well as being environmentally responsible and reducing greenhouse gas emissions. Keith Root, Environmental, Health & Safety Manager at EcoPower, explains how ISO standards – ISO 50001 and ISO 14064-3 – are helping to provide a solution.

It all comes out in the wash. And unfortunately for the environment, this is exactly what used to happen with the washing of jet engines when compressor cleaning spilled wash water containing minerals, metals, oils and other contaminants on to the ground.

EcoServices is one company that is helping to make a difference by not only investing in new technology, but also by taking coordinated action to implement new operating procedures, as EcoPower's Keith Root explains.



Photo: EcoPower



ISOfocus: With an ever-growing list of climate change concerns, how is EcoServices managing and reducing its greenhouse gas (GHG) emissions?

Keith Root: EcoServices is renowned for its EcoPower service, a patented, closed-loop, engine-wash system that uses pure, atomized and de-ionized water to wash engines for optimum efficiency. With no chemicals, spills or engine-wash effluent escaping into the groundwater, EcoPower provides an environmentally safe and fuel-efficient option for operators. It also collects wastewater, filters it and reuses it for the next wash. So it is not only better for the environment but also means longer maintenance intervals and slower turbine deterioration.

Another significant approach to reducing GHG emissions is through our voluntary compliance (verified by NSF International) with ISO 50001 on energy management. As set out in its remit,

ISO 50001 helps EcoServices to improve and update our energy performance continuously, as well as systematically. EcoServices has low-energy demands in the performance of our jet engine wash services, but compliance with ISO 50001 helps us to ensure that we utilize energy most efficiently, thereby controlling GHG emissions.

How is GHG verification undertaken at EcoServices? Is the verification of a GHG statement conducted by an independent third party or by EcoServices internal auditors?

EcoServices is about to partner with NSF International to verify GHG emissions. NSF is an accredited, independent third-party certification body that tests and certifies products to verify that they meet public health and safety standards. It has over 70 years' experience in conducting such audits, claiming "unmatched technical

EcoPower provides an environmentally safe and fuel-efficient option for operators.

GHG expertise". It says: "NSF's climate programme was developed and is run by industry experts who possess the most up-to-date and accurate information to use in client reporting. We provide a dedicated client manager throughout the verification process to ensure prompt, accessible and appropriate communication."

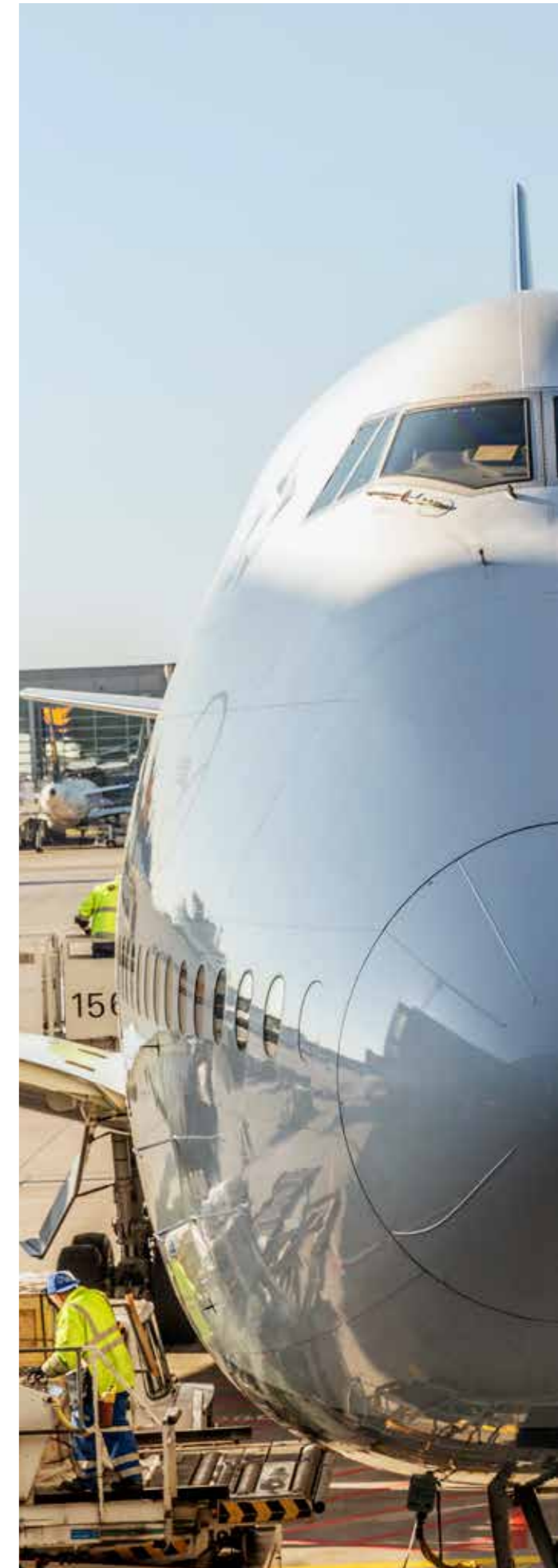
How does ISO 14064-3¹⁾ ensure that the EcoServices inventory of emissions is undertaken accurately and completely?

Compliance with ISO 50001 guarantees that EcoServices is controlling energy consumption to maximize efficiency; and ISO 14064-3 is essential to ensure that our GHG emissions data is recorded, computed and reported accurately. EcoServices has a global network and whereas ISO 50001 focuses on activity to improve energy efficiency, the ISO 14064 series of standards concentrates on the report structures to ensure compliance and conformity with the accepted worldwide business community.

What added value does ISO 14064-3 bring EcoServices, such as credibility with stakeholders, greater confidence in the inventories, etc.? Is there any other information you wish to give companies looking to use ISO 14064-3?

ISO 14064 represents best practice for the reduction of GHG emissions along with requirements for their reporting and verification. For EcoServices, it provides credibility with stakeholders to verify complete and accurate accounting for GHG emissions reports. Furthermore, it brings international recognition and compatibility, with a framework and tools that are agreed on and respected internationally. ■

1) ISO 14064-3:2006, *Greenhouse gases – Part 3: Specification with guidance for the validation and verification of greenhouse gas assertions*, is currently under revision.



Slam on the climate breaks

The Paris Agreement, inked by 195 countries in December 2015, set an ambitious target to cap global warming at well under 2°C. As countries struggle to reach this goal, ISO standards offer a solution to the lack of clarity and consistency in the way we account for greenhouse gas (GHG) emissions and removals.

Your GHG inventory in **three easy steps...**

1 Measure your carbon footprint

- Quantifying with...
- **ISO 14064-1** helps companies quantify and report GHG emissions at the organizational level
 - **ISO 14064-2** helps organizations plan their GHG project to reduce emissions
 - **ISO/TR 14069** gives guidance for the application of ISO 14064-1
 - **Future ISO 14067** helps quantify the carbon footprint of products

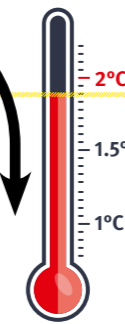
2 Get third-party approval

- Validating with...
- **ISO 14064-3** was designed for auditing organizational and project-level GHG assertions (complements ISO 14064-1 and ISO 14064-2)
 - **ISO 14065** helps certification bodies undertake validation or verification of GHG assertions

3 Communicate to others

- Communicating with...
- **ISO 14020** gives general principles on environmental labels and declarations

Ultimate objective: keep global warming below 2°C



New standards under development...

ISO 19694 series of standards to help determine stationary GHG emissions of energy-intensive industries, comprising a generic document and several industry-specific parts (e.g. iron and steel, cement, aluminium, lime, and ferroalloy).

Thailand's incentive for a low-carbon future

In many countries, standardization-based incentives are the way forward to combat climate change. Imparting lessons in effective carbon action, Thailand shows us how it's done.

Thailand is a great development success. In past decades, it has made tremendous progress towards eradicating poverty and promoting prosperity and well-being. As is the case for many countries, Thailand's growth has relied mostly on imported fossil fuels, shown to be the main culprit behind greenhouse gas (GHG) emissions. The country is already facing the consequences of global warming from excessive anthropogenic emissions. These include an increase in average annual temperatures, rising sea levels and a marked vulnerability to droughts and floods, potentially heralding more extreme climatic events.

Such climate instability could affect future prospects for growth and well-being. Conscious of this reality, the Thai government is committed to the globally agreed Sustainable Development Agenda and its Goal No 13 on climate action. One significant commitment is the pledge to reduce GHG emissions by 20% by 2030. To reach this target, government

agencies have launched a sustainable master plan with projects to slash carbon dioxide (CO₂) emissions in a number of sectors, such as transportation, industry, agriculture and energy.

Concerted climate action requires a public, private and people's partnership. Just as businesses and manufacturers must find a balance between economic vitality and environmental sustainability, so consumers need to be informed and equipped with available alternatives to make sustainable consumption choices. And the public sector must facilitate these through clear, strategic and coherent policies.

Nattapol Rangsitpol, Secretary-General at the Thai Industrial Standards Institute (TISI), ISO's member for Thailand, explains how participatory standardization-based incentive schemes – credibly guided by ISO International Standards – have been instrumental in putting the country on the path to sustainable development.



Concerted climate action
requires a public, private
and people's partnership.

Greening the car industry

Transport is responsible for 27% of Thailand's GHG emissions, a statistic the Thai government is hoping to change with its target to cut emissions by 23 million tonnes of CO₂ equivalent (or tCO₂e) by 2030. Transportation-related agencies in Thailand have joined hands to design and implement policies and programmes with this in mind. The Ministry of Industry, for instance, has introduced a number of industrial policies that support CO₂ reduction by encouraging manufacturers and businesses towards sustainable mobility.

In 2005, the Thai government, coordinated by the Ministry of Industry, launched the ECO Car Policy, a high-incentive scheme for automobile manufacturers to produce passenger vehicles that meet the international "clean-efficient-safe" criteria and an imposed limit of 120 g of CO₂ per kilometre covered. All major automobile manufacturers using Thailand as a production base adhered to the scheme and began producing eco-cars that served both the domestic and export markets. This initiative was reinforced in 2013 by the ECO Car 2 scheme, which sets even more stringent environmental and industrial standards, curbing CO₂ emissions levels to no more than 100 g/km.



Photo: TISI

Nattapol Rangsitpol, TISI Secretary-General.

Setting the bar higher to incorporate all types of cars, the government introduced a new CO₂ emissions-based excise tax law on automobiles in 2016, replacing the tax system based on engine capacity. The new law offers tax rebates for vehicles with low CO₂ emissions and effective safety systems. Alongside the new excise tax, car manufacturers are required to display an ECO Sticker on windshields to inform buyers of such things as fuel consumption, emissions standard and CO₂ emissions. The ECO Sticker is based on standards regulated by TISI, Thailand's national standards body, including requirements from International Standard ISO/IEC 17025¹⁾ for the competence of testing and calibration laboratories. It gives consumers equal and open access to standardized technical information while providing a market and brand incentive for car manufacturers.

Climate-friendly products

The Carbon Labelling Scheme, initiated and implemented by the Thailand Greenhouse Gas Management Organization (TGO), also combats climate change by leveraging the market mechanism that incentivizes large-scale emitters to reduce their GHG emissions. Currently, the types of carbon footprint labelling promoted in Thailand include the Carbon Footprint for Products (CFP) and Carbon Footprint Reduction (CFR) labels.

The CFP works by taking into account the quantity of GHG emissions from each production unit throughout the whole life cycle (cradle to grave) of a product; the CFR then demonstrates achieving a reduction in the product's carbon footprint as required by TGO's Carbon Labelling Programme. As effective measures to mitigate climate change, the CFP and CFR on-pack labels help consumers easily identify emissions based on a life-cycle approach and provide an opportunity for companies to publicize such information on their products.

Meanwhile, the Thai Industrial Standards Institute takes part by developing the standards needed to bring local stakeholders and conformity assessment bodies in line with international practices. Its specially appointed 59th technical committee has been actively involved with ISO/TC 207, *Environmental management*, the ISO technical committee responsible for a suite of standards on carbon footprint, which have provided a useful springboard for the Thai carbon footprint scheme.

1) ISO/IEC 17025 was developed jointly by ISO and the International Electrotechnical Commission (IEC).

Received positively by industry, the CFO pilot was extended to local authorities to help them quantify their carbon emissions and implement reduction measures within their administrative boundaries. This time, the project sought to develop guidelines specific to government authorities in the Thai context, build local capacity in carbon footprint quantification and greenhouse gas management, and develop mitigation and reduction scenarios based on relevant activities of local authorities.

Then in 2013, TGO introduced the Thailand Carbon Offsetting Programme (TCOP) with the objective of encouraging Thailand's private and industrial sectors to demonstrate social responsibility by offsetting their organizational emissions through a system of carbon credits. Entirely voluntary, the programme has already demonstrated a GHG reduction of 63 191 tCO₂e through various organizations, products, services and events.

Labelled for success

Since the scheme's inception in 2015, more than 5 000 ECO Stickers have been approved for car and truck models. The CO₂-based excise tax and ECO Sticker enable the Thai automotive industry to produce clean technology vehicles while encouraging car buyers to "go green". Its successes include a substantial reduction in average CO₂ emissions of passenger cars and pickup

trucks in the domestic market, which dropped by 28% and 12% respectively since the scheme was introduced.

Like the ECO Sticker, the CFP label has been recognized as an effective marketing tool to demonstrate commitment to carbon reduction. Since the scheme started, 2 590 products from 508 companies have been registered for the CFP label, while 411 organizations have obtained CFO registration for reducing their GHG emissions by a combined 1 626 091 tCO₂e. Similarly, 324 products from 64 companies obtained the CFR label. These include ceramic tiles, wall and floor tiles, dish cleaners, textiles, cement, rice bags, cooking oil, and many other products. The CFO scheme has also facilitated "green jobs" with the emergence of consultants and verifiers who offer carbon footprint services.

The incentive-based carbon reduction schemes in Thailand confer numerous benefits to all stakeholders. Consumers have access to product information, giving them an opportunity to make environmentally friendly purchasing decisions and participate in GHG emissions reduction. Likewise, manufacturers and producers can use the labels as a green incentive for market promotion to enhance their brand's image and cut costs. Thailand's success in reducing its carbon trail has been remarkable, helping to shift the country towards sustainable development. And this could ultimately lead the transition to a low-carbon future. ■





ANSI CELEBRATES 100TH ANNIVERSARY

The American National Standards Institute, ISO member for the US, is celebrating a hundred years of standards and conformity assessment this year. ANSI was originally established on 19 October 1918 as the American Engineering Standards Committee (AESC) – an impartial national body to coordinate standards development in the United States, approve national consensus standards, and halt user confusion on acceptability. Since then, ANSI has led and supported the voluntary standardization community in critical work that has fostered significant US advancements and milestones, from the post-war industrial production boom to the wave of technological innovations sweeping the nation today.

“For a century, ANSI has played an integral part in supporting America’s growth and safety, and continues to improve the quality of life for millions,” said S. Joe Bhatia, ANSI President and CEO. “I’m honoured to take part in this legacy, as ANSI, its staff and our highly collaborative standardization community continue to lead exciting efforts that lay the foundation for innovative breakthroughs for generations to come.”

For more information on ANSI’s centenary, visit www.ansi.org/100 and follow the conversation on Twitter with hashtag #ANSIturns100.

INTERNATIONAL GENDER CHAMPIONS

The gender gap remains, according to The Global Gender Gap Report 2017, published by the World Economic Forum, which indicates that an average difference in gender equality of 32% still needs to be closed worldwide.

On this year’s International Women’s Day, celebrated on 8 March, ISO sent a strong signal when its Secretary-General joined the pledge to be an International Gender Champion, as part of a leadership network working to advance gender parity in executive management. At ISO, we believe that women not only make a valuable contribution to the products, services and systems that drive our society, they also deserve to have an equal voice in their development.

“Our aim is to encourage equal representation in standardization, to strengthen the participation of women in the development of ISO International Standards and to make them more relevant to women around the world,” said ISO Secretary-General Sergio Mujica. “We intend to promote among the ISO family the importance of women’s participation in ISO work.”

ISO SECRETARY-GENERAL MEETS WITH MEMBERS

As the ISO Central Secretariat prepares to host the next ISO General Assembly, ISO Secretary-General Sergio Mujica was on the road in early January talking to counterparts – not least our member in Switzerland (SNV) – about making the event a success. Due to take place in Geneva in September 2018, this year’s edition plans to be a welcoming, inclusive and innovative event that will open up networking opportunities for ISO members, while taking full advantage of the presence of international partners in Geneva.

Next on the agenda was Vienna to meet our Austrian member ASI, where Sergio shared his first impressions of ISO and his aspirations for the future. This was followed by a discussion with neighbouring countries Italy (UNI), Poland (PKN) and the Czech Republic (UNMZ) on ways of improving participation of small and



Sergio Mujica meets with various CEOs of ISO members.

medium-sized industrialized countries in the ISO system. Sergio later met with a group of CEOs from ISO members in Denmark, Iceland, the Netherlands, Finland, Sweden and Norway, which focused on IT vision and good governance within ISO. Finally, in February, Sergio headed to ISO’s German member DIN where he received an update on work done in the follow-up to the Berlin Declaration, signed during the 2017 General Assembly, which includes foresight activities to strengthen ISO member networks and attract younger experts to standardization.



Winner of the Standards Award, YBrs Dr Azmi Idris from SIRIM Berhad receives his award from (left to right) the Director General of Standards Malaysia, Datuk Fadilah Baharin, ISO President John Walter and ISO Secretary-General Sergio Mujica.

STANDARDS EXPERT ON FORBES “UNDER 30” LIST

Forbes has just published its “30 Under 30 Europe” list featuring 300 young disruptors across a diverse range of categories, including entertainment, finance and technology. The honour roll includes, for the first time, an expert involved in the work of ISO technical committee ISO/TC 204, *Intelligent transport systems*.

Siddhartha Khastgir is on this year’s Forbes list of the brightest and most promising game changers under the age of 30. Khastgir is a Principal Engineer at WMG, University of Warwick, where his work is focused on developing standards for driverless vehicles and developing

test methodologies for driverless systems. He is also a UK representative to the ISO technical committee responsible for creating standards in the field of advanced driver assistance systems and automated driving (ISO/TC 204/WG 14). Selecting these youthful visionaries is a year-round obsession for Forbes, whose reporters vetted thousands of nominations and polled expert judges to ensure that each member is a leader in his or her industry.



CELEBRATING EXCELLENCE IN MALAYSIA

The Malaysian Minister of Science, Technology and Innovation, YB Datuk Seri Panglima Wilfred Madius Tangau, opened the National Standards and Accreditation Awards Night in Kuala Lumpur, Malaysia, in February 2018. Organized by DSM, ISO’s member in Malaysia, the annual event was an opportunity to celebrate excellence in the development and use of standards and related accreditation activities.

In his opening speech, the Minister highlighted the importance of standards to Malaysia’s future. “The cluster of standards, quality, certification and accreditation has been identified as one of the key elements of the 11th Malaysia Plan (2016-2020) to stimulate the country’s socioeconomic growth,” he said.

For the first time this year, the event commended the work of a number of DSM’s strategic partners. Datuk Fadilah Baharin, Director General of Standards Malaysia, explained: “Tonight, we want to recognize our partners committed in their quest for quality through standards and accreditation.”

The event also celebrated the success of two Malaysian school teams in the International Standards Olympiad, a competition initiated by KATS, ISO’s member for Korea, which challenges primary and high-school children to solve real-life problems through standards, raising awareness of the topic in this age group.



CHINA WELCOMES ISO DEPUTY SECRETARY-GENERAL

Responding to an invitation by SAC, ISO’s Chinese member, ISO Deputy Secretary-General Nicolas Fleury visited China in March 2018 with a view to support international standardization training in developing countries. His first stop was Beijing where he gave an in-depth presentation of ISO’s copyright policy, ISO/POCOSA 2017, to institutions and academia. As China’s standardization reform gathers pace, backed by the recently revised Standardization Law of China, this comprehensive overview was perceived as a welcome opportunity to learn more about international standardization. During his stay, Nicolas had the chance to discover the impressive Qingdao International Standardization Training Base, which is currently being built to serve as a world centre for education about standards. There, he discussed ISO’s programme of international and regional training activities for 2018 as well as proposals for the 2019 Qingdao Forum on International Standardization (QFS).

This was followed by visits to the Qingdao Demonstration Pilot for Social Governance and Public Services and the Qingdao Sanley Group, a company specializing in urban water supply equipment, to find out how they are using standards.



The secret to unlocking green finance

by Rick Gould

The United Nations Environment Programme (UNEP) asserts that ours is the last generation that can stop climate change. We need to do this by changing to a zero-carbon, sustainable, cyclic economy. Yet unlocking the finance for this has been a major challenge... until now. Discover how ISO is at the forefront of this transition, developing several standards that will propel, catalyse and underpin the new sustainable economy.



If there were a top-ten list of environmental risks, then resource depletion, pollution and climate change would be at the top. In fact, these three risks are strongly connected, just as economics and environmental management now form unbreakable linkages for a sustainable economy. The intent is certainly there to make this transition happen. At the United Nations Climate Change Conference (COP21) held in Paris in 2015, over 400 major investors representing USD 24 trillion in assets petitioned for a strong, worldwide deal to tackle climate change. Although a deal did emerge from the Conference, financing it is proving a challenge due to the scale of investment needed. It also requires being creative in how we tap into the multitrillion-dollar bonds market that is typically funded by risk-averse financiers.

The magnitude of the investment is unparalleled. UNEP, for example, has determined that by 2030, much of the world's infrastructure will need to be redeveloped and replaced in the transition toward the new economy. What's more, according to the New Climate Economy, the flagship project of the Global Commission on the Economy and Climate – an international initiative that examines how countries can balance economic growth with the risks of climate change – this economic and environmental revolution will require funding to the tune of USD 90 trillion.

Focusing on energy alone, the International Energy Agency estimates that the world will need to infuse at least USD 53 trillion in the energy sector by 2035 to prevent dangerous climate change. Meanwhile, on the continent that gave birth to the 2015 Paris climate change deal, the European Commission's (EC) High-Level Expert Group on Sustainable Finance (HLEG) has calculated that the EC must invest USD 180 billion annually if it is to fulfil Europe's ambitions in tackling climate change.

Propel and compel

While investment has already begun, significant problems have emerged due to a lack of tools to value natural resources and the absence of a robust, universal standard that at least propels, if not compels, financial institutions to reduce their exposure to climate change risks. For example, investors at the 2015 Paris Conference called for financial institutions to determine – and disclose – such risks. Yet a report by the investment house Boston Common Asset Management, published earlier this year, found this area lacking: amongst the 59 largest banks in the world, less than half were assessing climate change risks, and well over half failed to limit their financing of the coal sector.

There have been other challenges too. Over the past ten years, a new type of investment product has emerged known as the “green bond”. In simple terms, a bond is a loan whereby the lender gets a fixed return for a finite time period, after which the loan is repaid in full. Green bonds provide vital finance for sectors such as renewable energy, low-carbon buildings and transportation, energy efficiency, waste minimization, recycling and the circular economy, sustainable agriculture, and climate change adaptation. At face value, green bonds are a win-win: investors make money funding developments for a better world whilst developers receive the lifeblood for fledgling environmental projects and programmes.

Green bond beginnings

The World Bank coined the term “green bond” in 2008 when it launched its Strategic Framework for Development and Climate Change, conjuring an eco-label for a new breed of loan to finance projects and programmes in sustainable development. Since then, the green bonds market has grown substantially and, according to the Climate Bonds Initiative, an international organization working to mobilize the bond market for climate change solutions, financial institutions issued about USD 155.5 billion in green bonds during 2017. Yet, despite these efforts, green bonds currently make up less than half a percent of the global bonds market.

As with many innovations, there have been controversies, such as the bond “labelled as green” whose intended purpose was to fund incremental improvements in the operational efficiency of an oil refinery. Furthermore, varying definitions for a green bond and new schemes for assurance have been confounding and off-putting. “Different definitions for green bonds have confused and deterred investors,” comments Dr John Shideler, Chair of technical committee ISO/TC 207, *Environmental management*, subcommittee SC 4, *Environmental performance evaluation*, who has been active in the field of climate change mitigation for more than a dozen years.



For decades, standards have provided the keys for unlocking beneficial change.



ISO standards will provide the framework, structure and strength to make it happen.

“Issuers have been able to choose from different frameworks for substantiating their green bond claims, such as the Green Bond Principles, the Climate Bonds Standard, and the guidelines of the People’s Bank of China. However, the lack of uniform eligibility rules and varying definitions of “green” have been seen to restrain growth in the sector,” he deplores. Fortunately, the new family of ISO standards, including ISO 14030, *Green bonds – Environmental performance of nominated projects and assets*, will significantly help to allay such problems.

Setting the framework

For decades, standards have provided the keys for unlocking beneficial change, as well as the structure to support such change. Environmental management is a case in point. For instance, ISO 14001 for environmental management systems was instrumental in helping a food company recycle its waste. Numerous organizations have likewise reported enormous annual savings in energy thanks to ISO 50001’s energy management systems. Furthermore, the returns on costs invested were typically achieved in well under a year.

Building on these successes, ISO is developing the next generation of environmental management standards, which will focus in particular on melding economics and environmental management. For example, valuing natural resources and performing environmental cost-benefit analyses are both strategically and tactically important steps in sustainable development programmes.

Accordingly, ISO 14007 will enable organizations to determine and communicate the costs and benefits associated with their environmental aspects, impacts and dependencies on natural resources. ISO 14008, meanwhile, describes a set of tools for assigning monetary values to environmental impacts. “There is a growing drive towards valuing natural capital, as well as a need to undertake a monetary assessment of an organization’s environmental aspects and impacts,” explains Martin Baxter, Chair of ISO/TC 207’s subcommittee SC 1, *Environmental management systems*. “Therefore, having a set of standardized, harmonized methods becomes important.”

Whilst Baxter sees both standards having a role in addressing climate change risks, tackling these requires finance for adaptation, resilience and the transition to a low-carbon sustainable economy. This is where two other standards – ISO 14097 for the assessment and disclosure of climate-change risks of investments and ISO 14030 for green bonds – will serve a critical role.

Standards set sail

One year after the 2015 Paris Conference, France passed the world’s first law addressing climate-change risk and disclosure. “Article 173 of French Energy Transition Law requires institutional investors to disclose how they address climate-change risks,” explains Stanislas Dupré, Convenor of the working group that is developing ISO 14097, a standard that sets the requirements for reporting climate-related risks and the impact of financial institutions’ climate actions.

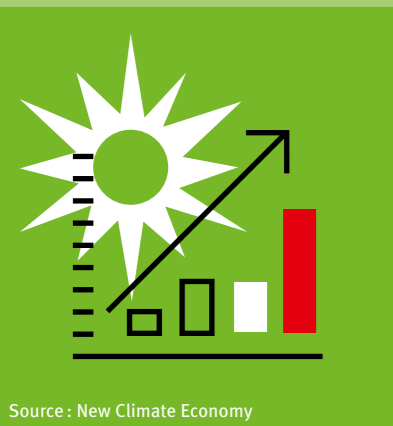
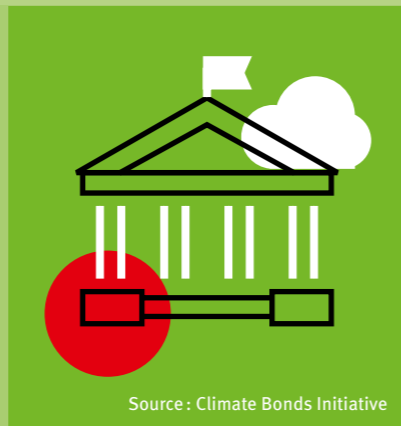
Existing standards on the subject are varied and fragmented, indicating a pressing need for a harmonized, unifying and international standard. ISO 14097 will serve that purpose. “There was a clear need for technical guidance and a standardized framework, describing how financial institutions, banks, investors and asset managers can assess climate risks and then disclose them,” adds Dupré.

At the same time, ISO 14030 will achieve equivalent credibility and uniformity for assuring green bonds. By 2015, it was clear that green bonds needed a unifying standard to build on the early foundations provided by the Green Bond Principles, the Climate Bond Standard and the variety of existing taxonomies for green bonds – and so eliminate the risk of multiplying regional standards and fracturing a game-changing market. “It will be the first International Standard for green bonds,” explains Shideler.

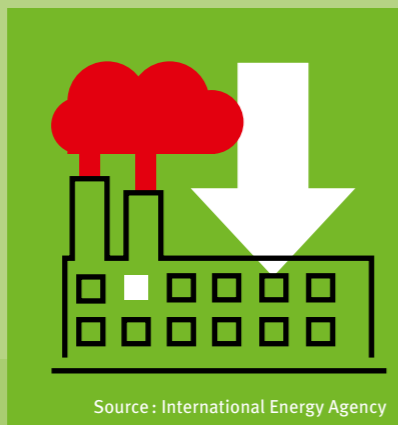


THE GREEN BONDS MARKET

► Over 400 major investors representing **USD 24 trillion** in assets petitioned for a strong, worldwide deal to tackle climate change at COP21.



▼ This economic and environmental revolution will require funding to the tune of **USD 90 trillion**.



► The world will need to infuse at least **USD 53 trillion** in the energy sector by 2035 to prevent dangerous climate change.

► The European Commission must invest **USD 180 billion** annually if it is to fulfil Europe's ambitions in tackling climate change.



▼ About **USD 155.5 billion** in green bonds were issued by financial institutions during 2017.

So how will ISO 14030 take into account existing standards? The strong suit of ISO is the harmonization of existing standards. Thus, ISO 14030 will draw upon the Green Bond Principles and the Climate Bond Initiative's Climate Bond Standard, which is based on these principles. The standard's working group of experts is also considering the taxonomy for green bonds developed through a joint effort of the Green Finance Committee of the China Society for Finance and Banking and the European Investment Bank. These resources and many more are providing seed documents for ISO 14030.

Meanwhile, Europe's High-Level Expert Group on Sustainable Finance (HLEG) has recommended that the European Commission produce a standard for green bonds developed within the EU. "The HLEG's recommendations align well with the scope and approach proposed for ISO 14030, whilst the new working group for ISO 14030 includes individuals from the HLEG and experts with experience in developing and using other existing standards," Shideler remarks.

Benefits across the board

So how will all these standards combine to address climate change? In simple terms, they will allow decision makers to make informed choices in a way which is more likely to be economically and environmentally sustainable. "ISO 14008 can be used by all types and scale of organizations as it provides a standardized approach for natural-capital accounting. ISO 14007, on the other hand, is intended to be used at the organizational level. Therefore, the two standards will complement one another," explains Baxter.

And what benefits will ISO 14097 bring? "There will be three main benefits," explains Dupré. "First, it will guide those investing and managing finance to assess climate-related risks. Secondly, it will help drive the shift to a low-carbon economy by lowering the exposure to climate-related risks; and thirdly, ISO 14097 will provide the benefits of standardization. In other words, a unifying framework that provides a basis for assessment, verification and comparability," he adds. The plan is to publish ISO 14097 in 2020.

ISO 14030 will also deliver three major benefits, Shideler continues: "Firstly, it will dispel any confusion about what constitutes a green bond. Secondly, it will provide a taxonomy of assets and projects that can be financed by green bonds, and thirdly it will provide assurance that green bonds issued in conformity with it will deliver environmental benefits, giving investors confidence." All going well, ISO 14030 will be published in 2019.

In summary, if economies and trade underpin civilizations, then melding economics with environmental management is critical if we are to live sustainably. Making this transition requires a paradigm shift in the way we value resources and use environmental cost accounting. And if environmental finance is the key that unlocks the capital to drive the changeover, then ISO standards, through harmonization and assurance, will provide the framework, structure and strength to make it happen. ■

Overview

The four standards in development melding environmental management and economics are:

- **ISO 14007**, *Environmental management: Determining environmental costs and benefits – Guidance*
- **ISO 14008**, *Monetary valuation of environmental impacts and related environmental aspects – Principles, requirements and guidelines*
- **ISO 14030**, *Green bonds – Environmental performance of nominated projects and assets*
- **ISO 14097**, *Framework and principles for assessing and reporting investments and financing activities related to climate change*



BIG *polluters* take a stand

by Maria Lazarte

The fight against climate change has unexpected allies with some of the heaviest-polluting industries joining its ranks. Why have they chosen to take a stand? And what are they doing to help clear the air?

Society needs them. Aluminum, iron and steel, cement and other energy-intensive industries are vital components of the very infrastructure of our cities and towns. But manufacturing these products takes up a lot of energy because high temperatures are needed to heat up and modify materials. The resulting emissions make up a significant share of global stationary greenhouse gases (GHG).

Some of the key players in the field don't want to be seen as big polluters anymore. "There is a realization that climate change is important. It's happening, we have to do something now, tomorrow will be too late," says Volker Hoenig, Managing Director of VDZ, the German cement association, which operates a cement research institute in Germany and is serving the cement industry worldwide. "The advantage is that these emissions are stationary, that is, they are concentrated in one place. The process is therefore fixed and predictable, which makes it easier to monitor and control."

The development of a new series of industry-specific ISO standards to measure GHG emissions could shake things up. Talking about this project, Hoenig recounts: "It was time for the industry to take responsibility. The momentum came from the manufacturers themselves. Soon, competitors agreed to work on a consensus and make decisions that would impact their future. You had representatives from the iron and steel, cement, aluminum, lime and ferroalloys industries working together. It was a powerful move."

Concrete solutions

Cement manufacturing is one of the most energy-intensive processes worldwide. But this product is irreplaceable, as a binder for concrete structures. "That's why VDZ was one of the key drivers of the initiative to standardize GHG emissions monitoring and reporting," says Hoenig. The association is no stranger to standardization, mainly in relation to product quality. But about 15 years ago, VDZ started taking an interest in GHG monitoring and reporting following the introduction of the European Union Emissions Trading System and the development of the WBCSD¹⁾ Cement Sustainability Initiative CO₂ and Energy Protocol. The protocol is now used by nearly a thousand cement plants in the world.

"The standardization of GHG monitoring and reporting for energy-intensive industries began as a European initiative, with VDZ involved at an early stage," Hoenig continues. After this initial effort, the industry turned to ISO in order to widen the reach of this work. "Climate change is a global problem, so we needed a global solution. It made sense to come to ISO," he says. "International Standards level the playing field worldwide. That's important for both the economy and sustainability."

1) The World Business Council for Sustainable Development is a global CEO-led organization of over 200 leading businesses working together to accelerate the transition to a sustainable world.



What's notable about this story is the willingness demonstrated by industry leaders to be part of the solution. "You are accepting a reality," says Hoenig, "you are a big polluter, but you can do something about it."

The work is under way and the result will be published as a series of industry-specific standards under the denomination "ISO 19694". The suite of standards will be made up of a generic document and several industry-specific parts. "Currently, we have dedicated parts for the iron and steel, cement, aluminum, lime and ferroalloys industries, with two additional ones coming up on semi-conductors and displays," explains Hoenig. "These ISO standards will offer accurate, up-to-date methodologies representing the best current practice. And because they are international, companies around the world will benefit. The ISO process also makes sure that the standards are regularly revised and updated, so that we always have access to the latest information."

A tonne for a tonne

Although a monitoring and reporting standard may not sound like a revolutionary step, without it we won't have accurate and comparable emissions data from some of the biggest polluters in the world. "Up until now, these industries have been measuring their data emissions using different methodologies. That means it's hard to have an accurate vision of how a company rates compared to others," explains Marcel Koeleman, Chair of ISO subcommittee ISO/TC 146/SC 1 that develops standards on air quality of stationary source emissions.

This is problematic for various reasons. First, manufacturers can have skewed appreciations of their own impact. "You may be doing better or worse than you think, but you won't know for sure unless everyone uses the same methodology," says Koeleman. "It's not an easy thing to do. Some companies will realize they are not as efficient as they thought, but it's a necessary step if we want to change things."

Second, for monitoring organizations like the Intergovernmental Panel on Climate Change (IPCC), it's difficult to have an accurate view of the actual impact of these industries without harmonized measurements. In turn, this makes it harder to coordinate an adequate response. A standardized methodology could be used both by countries reporting industry emissions and by companies for internal (or external) benchmarking, which will help enforce and improve monitoring done by organizations like the IPCC. And third, without comparable measurements, it's going to be very difficult to identify best practice, which is key to taking meaningful action on climate change.

"The future standards are therefore one crucial component of a wider response," says Koeleman. "For the first time, emissions from energy-intensive industries will be comparable, not just from country to country, but also between sectors. It will be possible to benchmark plants worldwide using one common methodology.

These standards are therefore a crucial first step for a more controlled and clean industry.



One tonne of CO₂ emitted by an industrial installation from any of these sectors will equal one tonne of CO₂ all over the world. That's not the case today due to differences in reporting methods."

These standards are therefore a crucial first step for a more controlled and clean industry. For example, projects aimed at reducing GHG emissions could be agreed between countries or even companies, using this new harmonized methodology to monitor results. The standards will also facilitate the development of more accurate environmental management policies. Therefore, the impact of ISO 19694 goes beyond being a technical document, affording a broader societal contribution to our fight against climate change.

"You don't always get industry willingly stepping up to the challenge. That's what I have been most impressed with in my role as Chair of the committee. We all knew there were economic consequences, and different interests to take into account, but when I asked people around the table whether they were still in favour of developing these standards, everyone agreed."

A last question remains. ISO already has a collection of environmental standards, including standards to quantify and monitor GHG emissions. So why are these new standards necessary? For Koeleman, the benefit is

straightforward. The contribution that energy-intensive industries make to GHG emissions is significant. Developing targeted guidance that takes their specific industry processes into account can substantially increase adoption and use because they will be more adapted and accurate. "An advantage of creating these standards within ISO is that we don't only benefit from its standards development experience and international outreach, but we can align with the best practice already developed by the environmental management committee ISO/TC 207. In the end, it's about learning from each other."

So far, the development of the ISO 19694 series is well under way. In addition to industry representatives, the committee also has environmental professionals, scientists and researchers working on these standards. "But more experts are welcome," says Koeleman enthusiastically. "If you are in an energy-intensive industry and want your organization to take leading action and have a say when the rules are being developed, then join us! Simply contact your national ISO member body to participate in our committee. More representation will further strengthen our work." Koeleman is especially keen to encourage members from emerging economies. "One of the advantages of ISO is that consensus is not something limited to the meeting room; the goal is to achieve consensus at a global scale." ■

