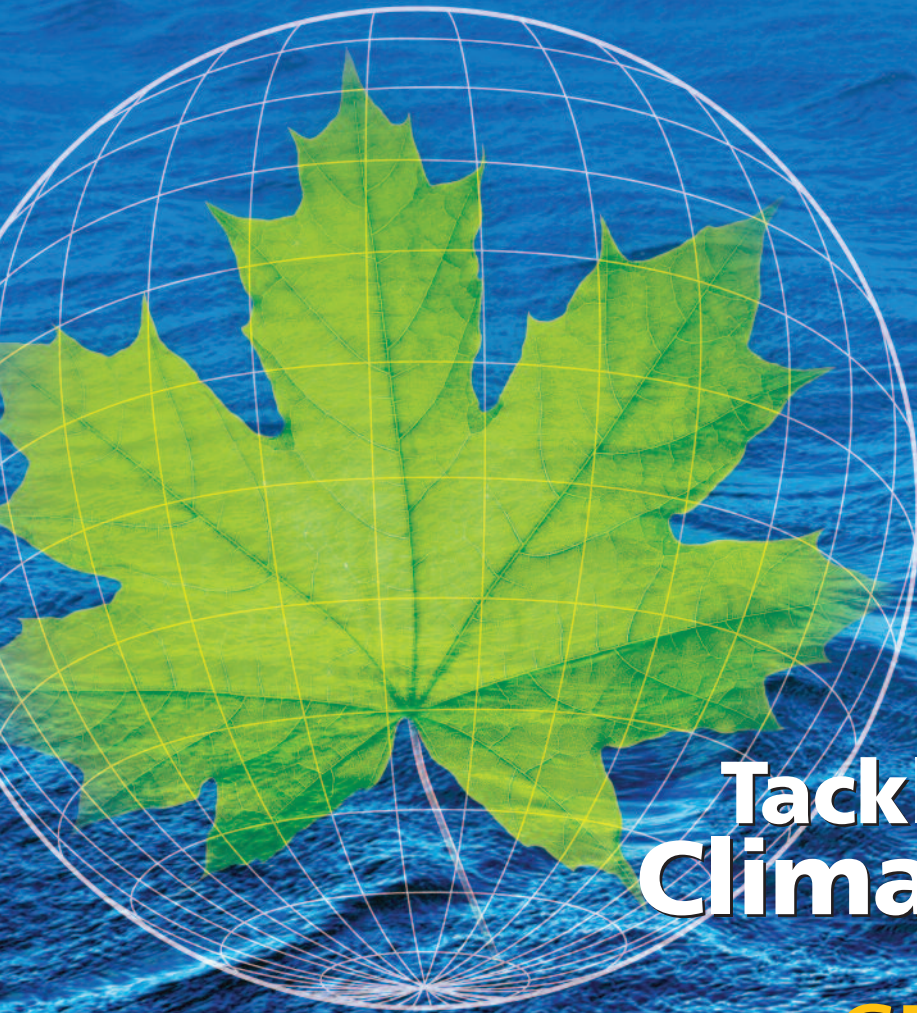


Volume 36 – October 2009

CONSENSUS

Canada's Standardization Magazine



**Tackling
Climate Change
through
STANDARDS**

Dear CONSENSUS Readers,



For more than a decade, standards development and conformity assessment activities have been focused on mitigating the impacts of climate change, and thus are helping Canadians to adapt to the inevitable consequences that will occur.

Nationally and internationally, there are inventories of standards that help to conserve water and energy, that limit greenhouse gas emissions, and that guide people and businesses in determining what can be done to lessen the impact upon a fragile environment.

None of the standards and conformity assessment activities available here in Canada would have been possible without the effort and dedication of the thousands of people who work and volunteer in Canada's National Standards System.

We dedicate this issue of *CONSENSUS* to them and we thank them for their hard work in helping Canada demonstrate the value of standards and conformity assessment that are at the core of Canada's National Standards System.

A handwritten signature in black ink, appearing to read "John Walter". The signature is fluid and cursive, with a large loop at the beginning.

John Walter
Executive Director
Standards Council of Canada

Canada's
Standardization
Magazine

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Canada 

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Canadian Artist Designs 2009 World Standards Day Poster

Standardization bodies around the world are celebrating World Standards Day this year with a Canadian twist.

Canadian Métis artist Dawn Oman designed the 2009 World Standards Day poster. The design, which the International Organization for Standardization (ISO) unveiled on its website in June, is based on the 2009 World Standards Day theme: *Tackling climate change through standards*.

It is the first time that a Canadian has designed the poster for the event.

“I was absolutely thrilled when I found out,” says Oman. “It’s just such an honour.”

The poster features a graphic picture of the Earth surrounded by a wide circle of images related to water, wind, solar and electrical energy, capped by a fragile ozone layer. The brightly-coloured print is set against a stark black background.

“I included four elements of renewable energy sources and, of course, represented them in my own way. Then, as a brainstorm, I put the earth in the centre of it all, and it just worked,” Oman explains.

She says she was excited to tackle the project because of its environmental significance, particularly for Northern Canada. Oman lives in Yellowknife in the Northwest Territories. She is a direct descendant of Chief Snuff of the Yellow Knives, one of the signers of the historic Treaty 8 with the Government of Canada.

“My work is influenced by the environment: by the Aurora Borealis, by snow and water. But also, being in the North, I worry about climate change and how it will affect

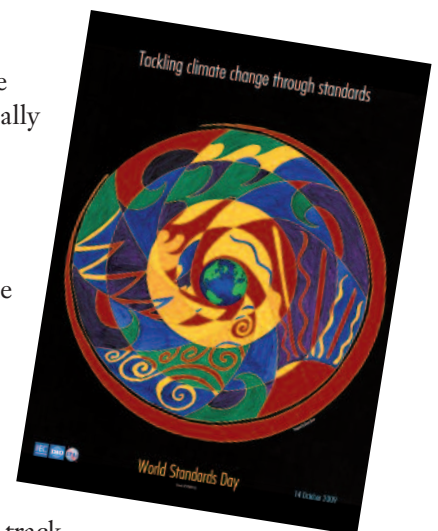
this area, things like the fish, caribou and especially the polar bears.”

Roger Frost, the Manager of Communications Services at ISO, said the Standards Council of Canada (SCC) was invited to recommend a Canadian artist for the design because of the impressive standardization-related track record Canada has in relation to climate change.

“Canada is at the forefront of international efforts to improve environmental management and to combat climate change through standardization by its leading role in the development of the ISO 14000 family, including the recent standards for greenhouse gas management, and new work on the carbon footprint of products,” Frost says.

He says the three international organizations involved in selecting the final design – the International Organization for Standardization (ISO), the International Electrotechnical Commission (IEC) and the International Telecommunications Union (ITU) – were thrilled with Dawn’s work.

“Dawn Oman has a real artistic sensibility and that has shown up in her approach to the poster,” he says. “Instead of being tempted to create a consensual design by including an ISO widget, an IEC widget and an ITU widget, she seems to have stepped outside the subject and



realized an artistic vision. And the positive reactions indicate that consensus is not necessarily the minimum on which people can agree, but can coalesce at a very high level.”

The World Standards Day poster is circulated to members of ISO, IEC and ITU, in more than 150 countries. It is also featured on the ISO and IEC websites, and on the cover of the October issue of ISO’s monthly magazine, ISO Focus.

Oman has previously received both the People’s Choice and Artists’ Choice Awards at the Great Northern Arts Festival in Inuvik, Northwest Territories. In addition to designing a commemorative medal for the 2008 Yellowknife Arctic Winter Games, her work was chosen by the Royal Canadian Mint for the Festivals of Canada Series silver 50-cent coin collection, and four of her designs were selected by the UNICEF International card program. The Canadian North Airlines corporate look is based on Dawn’s original art: her Bear and Moon design is painted on the jet tails of the airline’s fleet. Swirling

colours representing the Northern lights is a recurrent theme throughout her work, as are her brilliant colour combinations and unique interpretations of Northern icons.

World Standards Day was established in 1970 as a day to celebrate the importance of standards-related activities and to pay tribute to the collaborative efforts of the thousands of individuals that give of their time and expertise to this vital work. The aim of World Standards Day is to raise awareness among regulators, industry and consumers on the value of standardization to the global economy. The date of October 14th was chosen because it was on that day in 1946 that delegates from 25 countries first gathered in London and decided to create a new international organization dedicated to the coordination and unification of standards work. ISO was formed one year later. ■

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Standards: A Cost Effective Way to Energy Efficiency

When Jeff Green envisioned opening a convenience store in Fredericton, New Brunswick, he knew he wanted it to be an environmentally conscious business. So when he launched his store in November of last year it was of quality construction and highly energy efficient.

Green carefully built Bishop Drive Convenience in compliance with Efficiency New Brunswick's energy codes. For insulation, he used thermal technology to detect any heat escape through walls or seams. He uses high-efficiency fluorescent T8 ballasts, organizes his shipment deliveries in one full truck – as opposed to multiple half-full trucks – and uses a high efficiency refrigeration unit. On the shelves, his customers find the usual convenience-store offerings, as well as environmentally certified cleaning products and 100 per cent recycled paper products.

It isn't surprising then that Green has been a Gold member of Fredericton's Green Shops program since February 2009. Launched in October 2008, just one month before Green opened Bishop Drive Convenience, Green Shops is Fredericton's latest initiative in the Green

Matters campaign. It encourages businesses to reduce their impact on the environment by implementing a series of steps, all aimed at making the business more environmentally friendly and more profitable.

"I have reduced my operation cost by building an energy-efficient building and utilizing energy-efficient equipment," says Green. "I am promoting a good image to my customers by participating in the Green Matters program and promoting the fact that I am striving to be energy efficient and environmentally conscious.

"I am very pleased and proud to live in a city like Fredericton that is taking a leading role in promoting green initiatives." Green explains. "I have a young family and I know that the steps that we take today will not only benefit us in the short term but will help future generations in the long term. If everybody does a little bit, the compound effect can be tremendous."

While Green built his business to be energy efficient, Kathryn Anderson, director of Communications and Marketing with the Canadian Chamber of Commerce, says upgrading for energy efficiency can be a challenge for

existing small and medium-size enterprises (SMEs) that do not have the resources to spend on developing efficiency improvement plans. This is where standardization can greatly assist businesses to make the most of their efficiency efforts.

“By following standards and purchasing products that follow standards, businesses make efficiency improvements without having to spend resources on research or to come up with ways to improve efficiency on their own,” she says. “SMEs tend not to have resources to spend on developing efficiency improvement plans. If they can outsource that effort, their resources are better put to work on their business activities.”

While standards can make the job of becoming more energy-efficient easier, accessing capital for energy efficiency projects can be difficult.

“While large savings can be achieved, they are generally over a period of time, but require upfront capital costs,” says Anderson. “Since payback times tend to be long, company resources are usually put towards projects

with a shorter payback period.”

Depending on the type and size of the business, the challenge is usually in the area of devoting the appropriate resources to develop and implement an applicably sound energy efficiency management plan. However, once the plan is implemented, most SMEs will experience a significant difference in their bottom line.

“By obtaining the necessary facts, most organizations will appreciate that energy efficiency can offer savings for consumers, profits for shareholders, improvements in industrial productivity, enhanced international competitiveness and reduced environmental impacts,” says Sam Loggia, program manager of Energy Efficiency and Renewables at CSA Standards (formerly the Canadian Standards Association), a standards development organization accredited by the Standards Council of Canada (SCC).

Energy efficiency, continued on page 23

ISO 50001: Managing Energy

There will soon be international help for companies who want standardization assistance in improving their energy efficiency. The International Organization for Standardization (ISO) plans to soon publish a Management System Standard for Energy.

Canada is one of 38 countries offering input into the development of this standard, which is geared towards industry.

“Now, with ISO 50001, the first standard we are adopting will be a universally accepted standard so it will be doubly good,” says Michael Burke, director of the Industrial Programs Division of the Office of Energy Efficiency of Natural Resources Canada, and a member of the Canadian Advisory Committee for ISO’s project committee ISO/PC 242 – Energy Management.

ISO says that ISO 50001 will establish a framework for industrial plants, commercial facilities or entire organizations to manage energy. Targeting broad applicability across national economic sectors, the standard could influence up to 60 per cent of the world’s energy use.

Among other things, the future standard will also assist organizations in making better use of their existing energy-consuming assets, promote energy management best practices, reinforce good energy management behaviours and facilitate energy management improvements in the context of greenhouse gas emission reduction projects.

ISO has identified energy management as a priority area meriting the development and promotion of international standards. Countries around the world agree effective energy management is important because of the significant potential to save energy and reduce greenhouse gas emissions worldwide.

“Companies recognize improved energy efficiency improves their bottom line and competitiveness and also has positive implications for their carbon footprint,” says Burke. “It’s a win-win situation having an internationally recognized standard covering this area.”

Ron Morrison, Chair of the Canadian Advisory Committee for ISO/PC 242 – Energy Management, explains the standard is being developed to offer energy efficiency standards that can be easily adopted by small- and medium-sized businesses.

Burke adds that the standard will also facilitate trade between companies that adopt it just as is the case with the ISO 9000 Management Systems series.

The project committee aims to have ISO 50001 ready for publication by the end of 2010. “We’re working diligently to prepare for adoption of the standard by Canadian industries shortly thereafter,” says Burke. ■





Planning a Standard for Sustainable Events

Jacques Blanchet, Ecoadvisor and Coordinator of Standards Development in Social Responsibility at the Bureau de normalisation du Québec (BNQ) believes that it is possible to reduce the environmental impact of the thousands of meetings, conventions, festivals and other events organized each year across Canada.

“These events can have a substantial impact on the environment,” says Blanchet, “the most obvious being the amount of waste and greenhouse gases that they produce.”

To tackle this challenge, BNQ has developed a standard geared towards helping organizations plan their events better. It will publish its standard for Responsible Event Management (BNQ 9700-253) in the fall of 2009, along with a certification protocol.

The standards development organization, accredited by the Standards Council of Canada (SCC) to develop standards – has a clear goal: to simplify the organization of sustainable events and encourage event organizers to adopt more sustainable practices.

Blanchet says that despite organizers’ best intentions; sustainable event planning can be tricky to do today because of the various required procedures and applications from a variety of sources. These can prove to be more unwieldy in combination than the original challenge of staging an event. Standardization of best practices will offer a much needed “how-to” guide for event planners, says Blanchet.

“The Responsible Event Management standard will give organizers a way to reduce an events environmental impact and increase its positive return on a social, economic and environmental level,” Blanchet says.

The objectives of the standard are focused on sustainability training for event managers, reduction of

event environmental impact through better energy and waste management practices, and the development of long-term management habits based on sustainable development principles. It also aims to promote responsible consumption, to stimulate local benefits, to share existing expertise, and to develop knowledge of eco-responsible event planning.

BNQ has already put the criteria of the standard to the test. In May, 2009, it organized the About ISO 26000 conference and hosted, in collaboration with SCC, the seventh ISO Social Responsibility Plenary Meeting in Quebec City, using responsible event management “zero waste – zero carbon” practices.

Caroline Voyer, general manager of Quebec’s Réseau des femmes en environnement (RQFE), says that for her organization the practice of sustainable event management begins at the first step of planning events: most meetings are conducted through teleconferencing or videoconferencing; all suppliers are selected based on sustainable development criteria, and no print materials are distributed at meetings, but rather information is disseminated electronically.

During the event, the program builds on the planning experience: no delegate kits; a minimum amount of printed information; a reduction in disposable (one-use) materials; optimal use of permanent infrastructures; and data gathering on means of transportation and distances travelled by participants and users.

The program works with a series of benchmarks, checks and balances – and standards.

Voyer says the goal of the initiative is to facilitate and encourage event planning that focuses on eco-responsibility. To this end, it is hoped that the standard will be an incentive to encourage organizations to adopt practices that are more environmentally sustainable. By following the standard, organizations can both reduce waste and greenhouse gas emissions.

The standard, Voyer says, will help raise the bar for what is expected of event planners. Awareness efforts and training can only go so far, she says. A standard will enable officials to set benchmarks. Equally important, it will encourage organizations to share and grow their knowledge of sustainable event planning. ■

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ISO TC 207- Environmental management secretariat

*Meet Kevin Boehmer —
Secretary of ISO/TC 207*

As secretary of the International Organization for Standardization (ISO)'s technical committee for standards relating to Environmental Management (ISO/TC 207) – the technical committee responsible for developing and maintaining the renowned ISO 14000 family of environmental management standards – Canadian Kevin Boehmer has a front-row view of international efforts underway to combat climate change.

Q: What are the major achievements of ISO/TC 207 since it was formed 16 years ago?

A: One of the strengths of TC 207 is that it relies on multilateralism and consensus. Bringing 100 countries together to agree on environmental issues is an achievement in itself.

In our core areas environmental management systems, environmental labelling, life cycle assessment and more recently greenhouse gas management – TC 207 is leading edge. It's very encouraging to see our generic standards being applied in specific areas. For example, ISO 14067, a new standard under development, measures the carbon content of products based on our core life cycle assessment and labelling standards.

Q: ISO/TC 207's vision is the worldwide acceptance and use of the ISO 14000 standards series improving the environmental performance of organizations and their

products, facilitating world trade and ultimately contributing to sustainable development. Can you give one or two examples of how TC 207 has fulfilled this vision?

A: This is a tough question, because there is no centralized way to track companies using the standards. We do know that for ISO 14001, the number of certified companies has increased to more than 150,000 worldwide from about 15,000 ten years ago. And the number for ISO 9001 is a lot larger.

The technical committee has also facilitated world trade and sustainable development. ISO 14001 principles are being incorporated in certain supply chains – for example the automotive industry and electronics. Many large companies require their suppliers to be compliant as part of the due diligence process. This helps green the supply chain and contributes to sustainable development.

Q: What role has Canada played in TC 207?

A: Canada was influential in the establishment of TC 207 in the early 1990s and subsequently accepted the Chairmanship and Secretariat roles. CSA Standards has been particularly involved, on behalf of the Standards Council of Canada (SCC), managing the technical committee leadership and subcommittee on greenhouse gas management.

Canada was also very influential in developing and implementing the notion of twinning where leadership positions on ISO technical committees are shared between developed and developing countries. For example, while Canada chairs TC 207, our vice-chair is from Brazil. This arrangement has been so successful that all of our TC 207 subcommittees and working groups are now twinned.

Q: What role has Canada played in climate change initiatives?

A: Canada leads the climate change subcommittee, and before that we led the climate change working groups and subcommittees. Canada is twinned with Malaysia for the climate change subcommittee. Canadian delegates were very influential in shaping the content of ISO's greenhouse gas management standards (i.e., ISO 14064, ISO 14065).

Q: Why has Canada been such a leader in developing these standards?

A: Canada is a leader because of two dedicated institutions – SCC and CSA Standards. We understood the importance of international solutions to pressing environmental problems and the role that voluntary standards can play in addressing these issues.

Along the way, there were key Canadian champions. These include our first chair, George Connell, former chair Daniel Gagnier, and Dr. Robert Page, who took over as chair last summer. Dr. Page is both a senior advisor to the Canadian environment minister and a professor at the University of Calgary. Another key contributor is Ahmad Husseini of CSA Standards, my predecessor as Secretary and a man whom many stakeholders worldwide associate with ISO/TC 207.

Q: What standards is the technical committee working on right now?

A: Right now, we have eight new or revised documents in the works. The new standards deal with eco-efficiency, competence requirements for greenhouse gas verifiers, measuring the carbon footprint of products, measuring the water footprint of products and more.

Q: How did you personally get involved with ISO/TC 207?

A: I got involved through Ahmad Husseini. I joined CSA Standards as one of Ahmad's project managers, and he was kind enough to let me mentor under him. I have been technical committee secretary for two years, and have managed various climate change task forces and working groups over the past 10 years.

Q: How has your work on this technical committee affected your own views on environmental management in business and daily life?

A: It's given me a sense of realism. Working in a multi-stakeholder, consensus format ensures that the solution is realistic and implementable for a large variety of organizations. The format forces you to balance the environment and the economy with issues facing unique situations in various countries around the world. Many of the issues we deal with are tough environmental ones – both technically and politically. But we have found consensus solutions. ■



From plastic to potting soil:



How compostable bags fight climate change

Industries around the world are exploring the capture and storage of their carbon dioxide emissions, rather than continuing to release them directly into the atmosphere along with other harmful greenhouse gases.

Automotive manufacturers are working to create and market electric and other environmentally friendly automobiles to reduce their carbon footprint.

Scientists are developing products that help to decrease carbon dioxide emissions from waste that is

rapidly filling landfills – including products like vegetable-based polymers that mimic the properties of plastic, but deteriorate rapidly in normal compost settings.

It's not that plastic bags are filling up the landfills – the Canadian Plastics Industry Association reports that plastic bags make up less than one per cent of residential solid waste by weight. However, landfills release up to 38 per cent of Canada's methane gas emissions, which is over 20 times more effective in trapping heat in the

atmosphere than carbon dioxide over a 100-year period and remains in the atmosphere for approximately 9-15 years. And food waste accounts for over one third of what's thrown into Canada's landfills.

Reducing what goes into landfills would help decrease Canada's greenhouse gas emissions; diverting food waste through composting programs is one way Canadians can do this, however, many are reluctant to compost because of concerns about cleanliness. Compostable plastic bags can help by offering a cleaner way to store and dispose of food waste, making it more attractive for the masses to participate in composting programs.

In April 2007, the Region of Peel introduced its Organics Recycling Program to continue its journey towards a goal that will see the Region divert 70 per cent of its waste from disposal by 2016. Fast forward two-and-a-half years and the Region now diverts just over 50 per cent from its local landfill, up from 44 per cent before the program began.

"We have 45 to 50 per cent of households participating," says Dave Gordon, Manager of Waste Planning with the Region of Peel. "We would like to see that grow. We introduced our blue box program in the late 80s, early 90s, and 90 per cent now participate in that."

In the fall of 2007, shortly after the Region's Organics Recycling Program began, it banned the use of non-certified compostable plastic bags.

"The decision came after long debate at Council on whether to allow plastics or not as they contaminate the finished product," says Gordon. "It was decided in the end to allow paper bags and certified compostable bags. They do break down in the composting process and have no impact on the finished product."

He adds that while they do not have any empirical data on whether the bags are improving the participation rates in the program, he does feel it gives people more access to the program in a way that won't impair the end product. And since they were introduced, the cost of the bags – while still more expensive than conventional plastic bags – has decreased, making them all the more attractive as an option for consumers.

"This was a relatively new technology when we launched," says Gordon. "We are hoping as the industry rolls out, the cost will go down."

Of course this raises the question of how does one know that bags are actually compostable.

In September 2007, the Bureau de normalisation du Québec (BNQ), which is accredited by the Standards

Council of Canada (SCC), became an official certification agency for compostable plastic bags when it published its compostable plastic bags certification program (BNQ 9011-911).

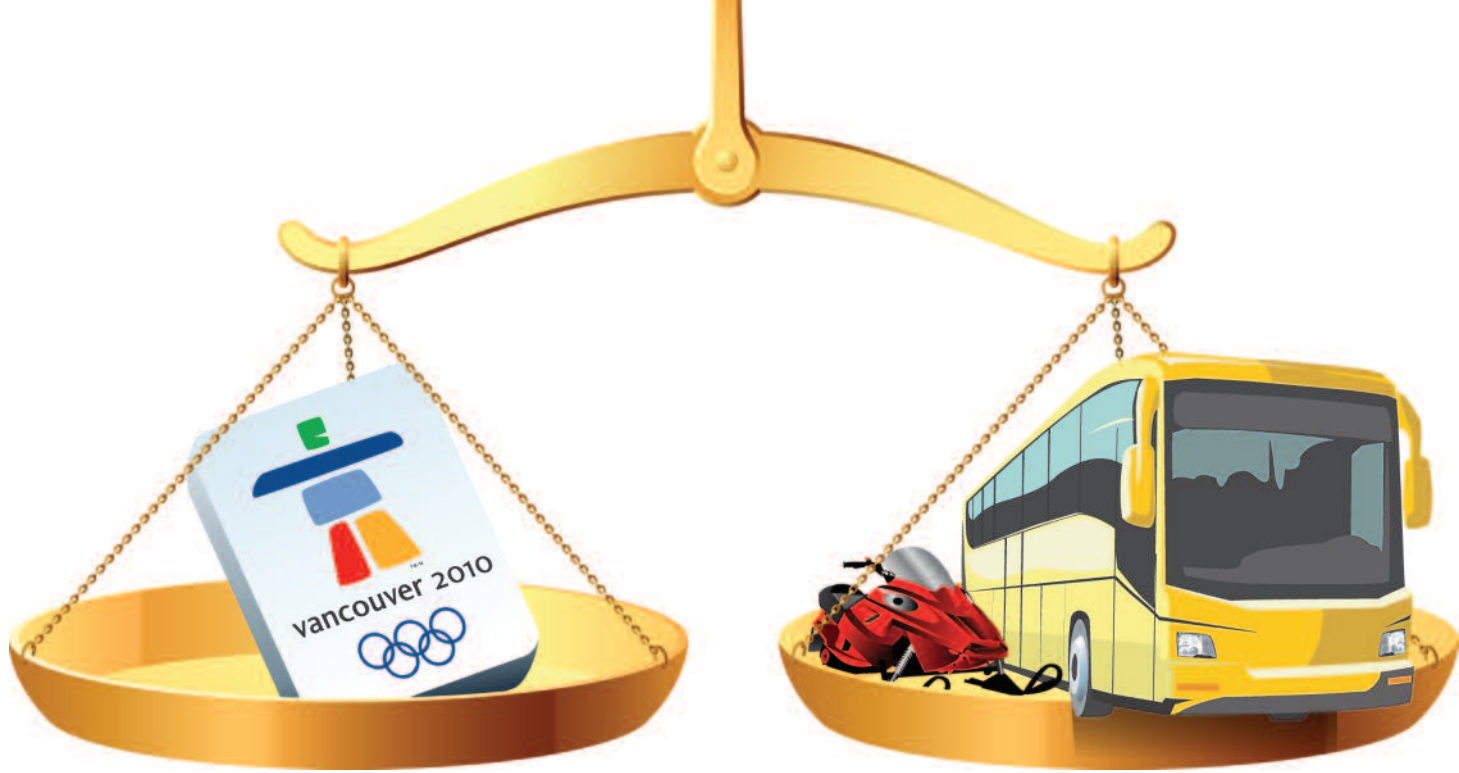
A year later, the International Organization for Standardization published its standard for the Specifications for compostable plastics (ISO 17088:2008), which looks at the physical properties of compostable plastic and ensures they are compostable in a certain period of time and that the by-products will not contaminate compost. ISO 17088 was in development at the same time BNQ was building its program, and is actually what BNQ based its program on.

Sylvain Allard, a standards agent with BNQ, feels standards are contributing to compostable plastic bags being used more widely, especially as more companies start producing them. There are currently five Canadian companies certified under BNQ's certification program to use the specific certification mark to promote their compostable plastic bags, and more are in the process of being able to do so.

For now, these products are being used where there are municipal compostable programs. However, BNQ is currently working on modifying its program to be adopted as a national standard, not only for plastic bags, but for all types of compostable plastic products including plates, forks, knives and glasses.

"We don't know if the compostable plastics will replace plastic in our day-to-day products, but our partner in that program, the Composting Council of Canada, is promoting the use of those products," Allard says. "Will the public go in that direction? We don't know. Only time will tell." ■





Reducing Greenhouse Gas Emissions by Offsetting

When the Olympic Torch is extinguished in Vancouver in March, 2010, the Vancouver Olympic Committee (VANOC) is hoping to have made history by hosting the first-ever carbon-neutral Olympic and Paralympic Winter Games.

It's a lofty goal, especially when one considers the complicated logistics of such an event: not only must VANOC shelter, feed and transport thousands of athletes throughout the Vancouver and Whistler areas, there are event venues to power, snow and ice to make, and thousands upon thousands of spectators to greet and help enjoy the games during the four-week period.

In 2007, the David Suzuki Foundation estimated that when the Games wrap up in late-March, they will have directly and indirectly produced 330,000 tonnes of carbon emissions.

While that number is preliminary – VANOC plans to release an updated emissions estimate later in 2009 – it gave the committee a place to start in trying to reduce the Games' carbon footprint.

Throughout the planning of the Games, the committee has focused on developing plans for venues and transportation that use as little greenhouse gas-producing

fossil fuels as possible, such as geothermal heating, the capture and reuse of heat waste, and the use of hydrogen-fuelled vehicles to transport athletes between venues.

However, VANOC's members realize that its many sustainability-designed efforts are not going to be enough to erase the Games' footprint altogether. So, through its carbon offset project, it's aiming to balance out the emissions produced during the Games by investing in projects that help clear the air of such emissions.

Through the project, VANOC has partnered with Offsetters, a British Columbia-based carbon asset management company and supplier of carbon offsets. In return for being named the Official Supplier of carbon offsets for the 2010 Winter Games and the Canadian Olympic Teams for 2010 and 2012, Offsetters will put together a portfolio of offset projects being offered through new local clean-energy technologies.

The agreement with Offsetters makes the 2010 Winter Games the first in Olympic and Paralympic Games history to have a sponsor serve as the Official Supplier of carbon offsets, and VANOC hopes it will help compensate for 300,000 tonnes of greenhouse gas emissions.

“Our carbon plan is to know, reduce, offset and engage others,” says Linda Coady, Vice President of Sustainability for VANOC. “After understanding what our footprint is likely to be, our biggest focus was to reduce emissions at source wherever possible. Building green venues and the greening of our operations have been key to finding significant reductions in our carbon footprint. Even with this effort, we are going to be left with emissions we cannot eliminate, such as air travel related to the Games, so we are looking to offsets as a way to neutralize the carbon emissions we have created.”

Trading or offsetting greenhouse gas emissions is a growing trend among businesses, organizations and governments that are looking to reduce the amount of carbon dioxide and other greenhouse gases presently going into the atmosphere.

Ontario, Quebec, Manitoba and British Columbia, as members of the Western Climate Initiative (WCI), have announced plans to take part in a regional cap-and-trade program. When fully implemented in 2015, this comprehensive initiative will cover nearly 90 percent of the greenhouse gas emissions in WCI states and provinces.

Also, a Canadian offset market has been one of the planned components of the federal government’s Climate

Change Plan since it was first announced in 2007, and Canada’s National Standards System is already playing an important role in cap and trade in North America.

CSA Standards (previously the Canadian Standards Association), accredited by the Standards Council of Canada, offers training and personnel certification programs for people planning to work in the field of greenhouse gas verification and validation.

“We’ve had more than 2,000 people take part in the training in both Canada and the United States,” says Michel Girard, CSA Standards’ Director of Climate Change Services. “It’s fairly popular, and that’s quite rewarding.”

He says interest in greenhouse gas quantification for the purpose of carbon trading is gaining popularity among governments, and – to a lesser degree – with private industries that want to lessen their carbon footprints on a voluntary basis.

“We’re seeing a large demand in the regulatory market in the U.S. and a lot of interest from the provinces in Canada,” he says. “The voluntary market is picking up, but not as fast as we had anticipated. It has slowed some with the recession.”

Reducing Greenhouse Gas Emissions, continued on page 27

Canada’s Offset Market Guides Coming Soon

In June of 2009, Environment Minister Jim Prentice announced that the federal government had established a draft set of rules for claiming greenhouse gas reductions in Canada’s future carbon market.

Prentice unveiled the draft versions of two out of three documents that lay out rules and guidance for generating offset credits that represent emissions reductions. The draft version of *Program Rules and Guidance for Project Proponents and the Program Rules for Verification and Guidance for Verification Bodies* were made available for a 60-day public comment period. The first guide in the series, *Guide for Protocol Developers*, was made available in the summer of 2008.

Among the requirements set out for verification bodies is the stipulation that greenhouse gas emissions verifiers must have achieved accreditation to the ISO standard on greenhouse gas verification (ISO 14065:2007), the Standards Council of Canada procedural document, the *Greenhouse Gas Accreditation Program (GHGAP) Handbook – Conditions and Procedures for the Accreditation of Greenhouse Gas Validation and Verification Bodies* (CAN-P-1520), and the Canadian National Standard for *Greenhouse gases: Specification with guidance for the validation and verification of greenhouse gas assertions* (CAN/CSA-ISO 14064-3:2006).

The federal government plans to publish the final versions of all three guides in the Canadian Gazette during the autumn of 2009. Following the guides’ publication, Environment Canada plans to launch a process for the submission and review of the Offset System quantification protocols, which will explain the approach used in measuring reductions, as well as the monitoring and data management requirements that must be followed for the particular project type. Environment Canada expects the first project applications will be ready for department review in early 2010.

The National Carbon Market is an important feature of the federal government’s climate change plan. Though the government focuses primarily on reducing greenhouse gas emissions, such as carbon dioxide, industries will be permitted to exceed the nationally imposed limits if they purchase offset credits to compensate for excess emissions. ■





Carbon Capture **AND** Sequestration: Capturing Attention

Just outside the tiny community of Coronach, Saskatchewan, research into what could possibly be a big help in reducing the amount of carbon dioxide emissions into the atmosphere is underway. Scientists and engineers, with funding provided through a partnership between the Government of Saskatchewan and the State of Montana, are working on a hope to trap almost 1,000 tonnes of the CO₂ emitted from SaskPower's Poplar River coal-fired generating station near Coronach, Sask, and then send it by pipeline to northeastern Montana, where the gas would be injected in a geological formation almost two kilometres underground.

It's the latest in a number of projects researching and developing the practicality of carbon capture and storage

(CCS) technology, which could help Canada and other countries around the globe in the fight against climate change.

CCS is the practice of capturing carbon dioxide emissions from industrial facilities, compressing them and then trapping them in a secure location. And, it is gaining traction in Canada.

A task force created in 2007 by the Alberta and federal governments to provide advice on how government and industry can work together to facilitate and support the development of carbon capture opportunities, stated in its 2008 report, Canada's Fossil Energy Future: The Way Forward on Carbon Capture and Storage, that the technology could be used to capture

and store roughly 40 per cent of Canada's projected greenhouse gas emissions in 2050, resulting in international recognition for taking the lead on emission reductions.

In the report's foreword, task force chairman Steve Snyder wrote that while the technology "is not the only solution possible or needed...our analysis indicates that it must be part of Canada's overall plan to reduce GHG (greenhouse gas) emissions."

The federal and provincial governments are buying into this idea. In addition to the Saskatchewan-Montana project, there are a handful of other projects underway in Canada, including the Weyburn-Midale CO₂ Project, one of the largest CCS projects in the world.

"Weyburn is looking at the integrity of storing (captured CO₂) in a partially depleted oil field to enhance oil recovery and at same time is storing CO₂," says Malcolm Wilson, director of the Office of Energy and Environment at the University of Regina, which will participate along with the Government of Saskatchewan and SaskPower in the development and operation of the reference/capture unit for the Saskatchewan-Montana project.

"The Saskatchewan-Montana project is looking at the full line from capturing CO₂ from the smoke stack to piping it, injecting it and storing it. This will look at things like the operations of the power station, what are energy costs, what are CO₂ costs."

Whereas the concept and practice of trapping and storing CO₂ is rather new, there are no standards in place nationally or internationally that specifically address the technology of CCS. However, there is a range of standards developed internationally and in Canada that

are being used voluntarily and through regulation in the oil and gas sector to support the implementation of CCS. These include the standard for Oil and Gas Pipeline Systems (CAN/CSA Z662), which the Standards Council of Canada has approved as a National Standard of Canada; and the International Organization of Standardization (ISO)'s standard for Methodology of Life Cycle Costing in the Petroleum and Natural Gas Industries (ISO 15663-1:2000).

"Different standards need to be applied to different configurations of the technology," says Pierre Boileau, manager of Climate Change for CSA Standards. "For example, a project that captures a relatively pure CO₂ stream from a natural gas processing facility will use different standards for capturing and purifying the CO₂ than a project where the CO₂ is captured from a coal-fired power plant, where the CO₂ may be only 15 per cent of the flue gas."

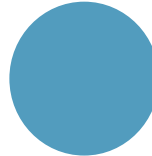
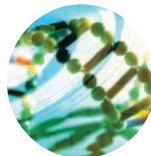
CSA Standards (formerly the Canadian Standards Association) – which is accredited by the Standards Council of Canada to develop standards in Canada – has identified standardization of the different configurations as one of the needs to enable the commercialization of the technology.

"As many countries move forward with carbon sequestration pilot projects, CSA Standards will be working with various organizations throughout the world to help bring forward the best possible carbon capture and sequestration standards for Canada," says Boileau.

"Where standards may be needed is in the approach to designing or conceiving individual CCS projects to help ensure that they perform at a high level." ■



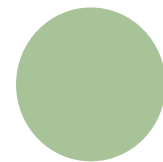
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Canada



Organic regulations— Sowing the seeds of



SUSTAINABILITY

Media hypes it. Manufacturers push it. Labels scream it. Shoppers can't push their carts or tote a basket to any aisle of their local grocery store without facing a ubiquitous choice: regular – or organic?

What once was just a fashionable option is now a real decision. Whether it is fresh beans or boxed noodles, more consumers are digging into the meaning of organic farming and its implications for our changing environment.

Organic farming has many benefits for Canada and Canadians. In addition to reducing the number of potentially harmful chemicals in the soil, water and air, it can help maintain soil quality and help crops withstand drought, disease and pests. Scientists have also pointed towards organic farming practices as a means of slowing and coping with climate change.

Laura Telford of the Canadian Organic Growers explains that organic farming is a third more energy-efficient than conventional chemical-based farming, which uses energy to produce and transport chemical-based fertilizers. Also, she points out soil that is farmed organically is capable of keeping more carbon in the soil – thus releasing fewer greenhouse gas emissions – than is the case with conventional farming practices.

On June 30, 2009, the Organic Products Regulations (OPR) came into effect in Canada, harmonizing Canada's organic food standards with international standards and making the adherence to Canadian organic standards mandatory for farmers selling products labelled as organic across provincial or international borders, or using the Canada Organic Logo on their products. Federally regulated standards and regulations will now play a real role in the future development of organic farming in Canada, as well as in communicating its benefits to the purchasing public.

The regulations are an annex to the Canada Agricultural Products Act. After three years of consultative talks led by the Canadian Food Inspection Agency (CFIA), the regulations require that organic producers adhere to criteria specified in the Canadian General Standards Board's (CGSB) national standards for organic products: Organic Production Systems, General Principles and Management Standards (CAN/CGSB-32.310-2006 Amended 1-Oct-2008); and with it the Organic Production Systems Permitted Substances Lists (CAN/CGSB-32.311-2006). Both have been approved by SCC as national standards of Canada.

Telford says Canadians will have to wait and see what kinds of impacts these regulations will have, but the industry is already optimistic. Having national regulations in place could spur more farmers to enter organic production and, consequently, more acreage may come under organic management. Telford says that's what happened in the U.S. when their organic regulations came into force in 2002.

Although Canada introduced its organics regulations to satisfy consumer labelling concerns and international trade issues, they may also help Canada fight climate change. Canada is already seeing progress in the way farmers, processors and consumers approach all things organic: Telford says she's observing increased activity at the level of certification bodies, and Canadian Organic Growers is fielding more farmers' questions than usual. She says in three years (the transition period for the regulations), that activity will translate into more organic farmers.

"Standards and third-party verification of standards are needed to provide consumers with the guarantee that they need to support organic," Telford says. "One of the strategies that Canadian Organic Growers is just starting to do some work on is to convince the climate (change) exchanges that organic agriculture merits carbon credits."

She says there are agricultural practices that are eligible for carbon credits, but so far, organic agriculture is not one of them.

"Once we are successful in convincing these organizations that there is enough science to indicate that organic agriculture is more energy efficient and can sequester more carbon in the soil, that's when standards come in. By having standards, we can determine which farmers are truly organic and tie any carbon trading schemes to organic certification," Telford explains.

She adds that standards referenced in regulations create a level playing field for all farmers who make an organic claim. Now disputes can be settled with official complaints.

Regulated standards also generate consumer confidence: if a product carries a recognizable federal logo backed by government oversight and sanctions, consumers have much more faith that the product is what it says it is. Also, the regulations will put Canada in line with its trading partners who have developed similar standards, Telford notes, and this helps guarantee access to international markets.

Brenda Frick, Organic Research and Extension Coordinator with the University of Saskatchewan, says standards may have the biggest impact in helping to increase acceptance of organic methods, and that comes back to the consumer.

Although Frick says standards can play a real role in addressing climate change, simply by moving the industry forward, standards can also change people's perceptions of farming and help evolve people's relationships with the land.

"I think standards have an important educational role," Frick says. "The 2006 (Statistics Canada) survey showed a large number of farmers that identified themselves as organic but were not certified. I think more are claiming the word because they think it means natural, or without pesticides. Organic is far more than that."

"I think people would like to see themselves as having a positive environmental impact. Standards help identify some of the ways of doing that," Frick says. ■



Environmentalists and industry praise Canada's forest management practices



Canada's forestry industry is vital to the country's economy. With 10 per cent of the world's forests, Canada is the globe's largest exporter of forestry products. In 2008, the industry accounted for about three per cent of Canada's gross domestic product.

But climate change is negatively affecting Canada's forests, according to a newly released study titled Climate

Change and Canada's Forests, prepared by the Alberta-based Sustainable Forest Management Network and Natural Resources Canada / Canadian Forest Service.

Written before the devastating British Columbia fires in the summer of 2009, the study states:

"...unprecedented events include the severe 2003 and 2004 fire seasons in British Columbia and the Yukon, the recent national drought, the mountain pine beetle epidemic, and reduced winter harvest opportunities [due to melting of frozen winter access roads] being experienced in many areas. ... Forest managers will

experience the impacts first-hand and they need the best information available on what climate change means to them so that they can develop and implement adaptation measures.”

It’s a fine line Canada must walk, between harvesting enough of its vast woodland area to meet economic demands while ensuring forests are sustainable for future generations to preserve the country’s ecosystems and climate. Fortunately, standards exist to help guide the federal government and forestry industry along that narrow path.

“The programs we have in place are there because we know how important Canada’s forests are,” said Stephen Cross, the acting director of Conformity Assessment at the Standards Council of Canada. “We want to ensure Canadians have the tools they need to keep our forests healthy and strong for centuries to come.”

Canada’s forests are not only sustainable; they are also certifiably sustainable. Currently, Canada has 1.43 million square kilometers of Canadian forests – an area larger than Peru – certified to three standards recognized worldwide.

The Standards Council of Canada (SCC) accredits forest systems management certifiers that certify to the International Organization for Standardization (ISO)’s standard ISO 14001 -- often seen as the cornerstone standard of the ISO 14000 series – for forest management systems. This standard applies to the environmental aspects of an organization over which it has control and can be expected to have an influence. It is the only ISO 14000 standard against which it is currently possible to be certified by an external certification authority.

In addition, there are the Canadian Standards Association (CSA)’s Sustainable Forest Management: Requirements and Guidance (CAN/CSA Z809-02), and the Sustainable Forestry Initiative® (SFI®)’s Sustainable Forestry Initiative Standard (SFIS 2005-2009).

Organizations accredited by the SCC that certify to ISO 14001, CAN/CSA Z809 and SFI 2005-2009, such as SAI Global Certification Services Pty Ltd., PricewaterhouseCoopers LLP, KPMG Performance Registrars Inc., and Bureau de normalisation du Quebec are demonstrating their dedication to corporate social responsibility and sustainable forestry management.

In addition, independent, non-profit certification programs endorse these standards globally. For example,

CSA and SFI are endorsed by the Programme for the Endorsement of Forest Certification (PEFC) schemes.

As well as evaluating forests against predetermined criteria, forest-based product certification programs follow the products from their origin through to the end of the manufacturing cycle. SCC offers this “Chain of Custody,” program, which it introduced in 2006 to address the origin of raw materials, and eco labels – the labels that appear on products that include raw material originating in certified forests. Companies such as PricewaterhouseCoopers LLP, Bureau de normalisation du Quebec, and retailers such as Hallmark Cards, Lowes Hardware, Office Depot and Staples recognize all three sustainable forestry management standards.

These standards encourage the sustainable harvesting of Canadian forests. Annually, Canada harvests 0.3 per cent of its commercial forest area, with 0.9 million hectares harvested in 2007. In 2006, companies planted 641 million seedlings over an estimated 449,696 hectares, seeding 18,204 hectares.

And, while nations have debated for years whether the Kyoto Protocol on climate change was even feasible, the Canadian pulp and paper manufacturing industry has gone ahead and reduced greenhouse gas emissions by 60 per cent based on 1990 levels – six times the Kyoto requirement.

Canada’s forestry industry has also advanced its approach to sustainable forestry by ensuring that pulp and paper mills get 60 per cent of their energy supply from renewable fuels, usually clean, wood-based energy from plant waste. This trend received a boost with Natural Resources Canada’s July 2009 announcement of a billion-dollar green transformation program for the pulp and paper industry.

Together, these initiatives and programs are helping to ensure Canadians can breathe easy about the future of their forests.

“There’s no question about how crucial Canada’s forests are, whether you’re talking about their monetary value or their importance to the environment,” says Cross. “But with the standards and accredited certification programs that are in place, and the fact that all sides understand how important these programs are to help preserve the forests, they’re just helping everybody win.” ■





Standards: A key to the success of renewable energy in Canada

According to the Canadian Renewable Energy Alliance “renewable power sources could meet our future power needs just as effectively and maybe at lower cost than other alternatives like nuclear power and coal with carbon capture – and do so sooner”. And, standards are an important key to this exciting future.

Canada has loads of renewable energy potential. It is the second largest producer of hydroelectricity in the world. In 2007, Canada produced 368.2 TWh of electricity using hydroelectric dams, satisfying 62 per cent of Canadian electricity requirements. In addition, the Canadian Energy Research Institute has estimated that Canada has the technical potential for more than 40GW of wind power, 10GW of small hydro, 70GW of solar power, 3GW of tidal power and 10 to 16GW of wave energy.

In May 2009, the Standards Council of Canada (SCC) invited interested stakeholders representing government, industry, regulators and consumers to participate on its Canadian committee for the development of an international standard on energy efficiency and renewable energy sources. The invitation stated that “the definition of common terminology in the area of energy efficiency and renewable energy sources is a prerequisite to enable the different actors to act together and develop shared tools which will further the dialogue between all the stakeholders”.

Already, CSA Standards, formerly the Canadian Standards Associations (CSA), accredited by the Canadian Standards Council, offers a portfolio of energy-related

standards for the design and installation requirements for renewable energy sources such as wind turbines, solar photovoltaic, solar hot water, earth energy systems, heat metering to support district heating and distributed generation.

Two renewable energies that are growing rapidly in Canada are wind and solar energy.

Wind power is one of the fastest growing sources of renewable energy in Canada and depends increasingly on standards. Today, Canada ranks eleventh in the world in installed wind power capacity. According to CanWEA, by the end of 2009, wind energy facilities will be operating for the first time in every province of Canada, producing enough electricity to power almost 1 million Canadian homes. This is almost 800 MW of new wind energy capacity installed by the end of the year, representing more than \$1.5 billion of investment, and pushing Canada over the 3,000 MW mark. In September 2009, CanWEA and the Canadian Manufacturers & Exporters announced a strategic partnership “to explore Canadian manufacturing opportunities in the growing global wind energy industry”.

Canada’s wind farms now produce enough power to meet almost one per cent of Canada’s electricity demand. The Canadian Wind Energy Association (CanWEA) has outlined a future strategy for wind energy that would reach a capacity of 55,000 MW by 2025, meeting 20% of the country’s energy needs. CanWEA believes that the plan, Wind Vision 2025, could create over 50,000 jobs and represent around CDN\$165 million annual revenue,

making Canada a major player in the wind power sector and creating around CDN\$79 billion of investment. Also, it is projected to save an estimated 17 megatonnes of greenhouse gas emissions annually.

Elizabeth McDonald, President and CEO of the Canadian Solar Industries Association, says that standards are key: “Consumers need to know that they are buying into safe, quality technologies that meet rigorous criteria: They want to know what they’re getting.”

Canada has an abundant potential for solar energy use and excellent solar resources. Canada leads the world in solar air collector development and commercialization. Since 2007, there are an estimated 544,000 m² of solar collectors operating in Canada. They are primarily unglazed plastic collectors for pool heating (71 per cent) and unglazed perforated solar air collectors for commercial building air heating (26 per cent), delivering about 627,000 GJ of energy and displacing 38,000 tonnes of CO₂ annually.

Moves toward solar domestic hot water could go far in helping to curb climate change. One-fifth of total

energy use in Canada is consumed by the residential sector, and around 17 per cent is used to heat water. This makes water heating one of the most energy consuming applications and one where solar panels can make a massive impact in further reducing bills and helping the environment. For each home that switches to this technology, the carbon offset is equal to driving approximately 3,000 kilometres a year.

In addition, McDonald says photovoltaic energy is being deployed more extensively, as it is one of the more easily adaptable technologies for the average consumer.

Things are beginning to change in Canada, McDonald says. Industry by industry, experts in renewable energy are pitching in, and standards can help with buy-in at the consumer level. “It really does assure consumers of what they’re getting,” she said.

And that’s what’s needed in as we move increasingly towards becoming a greener world. ■

Energy efficiency, continued from page 7

Michael Burke, director of the Industrial Programs Division of Natural Resources Canada’s Office of Energy Efficiency, believes awareness is the first step businesses can take to reduce their carbon footprint.

“If businesses have an interest in reducing their carbon footprint, they should get information where they can do that and get some financial reward,” Burke says.

And while not all communities have a Green Shops program to help guide businesses’ quest for energy efficiency, there is plenty of access to programs and information. The Government of Canada, for example, offers a number of tools and initiatives through the award-winning Canadian Industry Program for Energy Conservation (CIPEC), a voluntary partnership between the Canadian government and industry that brings together industry associations and companies and represents more than 98 per cent of all industrial energy use in the country.

CIPEC has been helping companies cut costs and increase profits since 1975 by delivering such programs as the Department of Natural Resource’s ecoENERGY for Industry and ecoENERGY Retrofit. These are designed to improve industrial energy intensity and reduce energy-related industrial greenhouse gases and air pollution. It also provides awareness building tools and, since 1997, has delivered four Dollars to \$ense workshops – energy management planning, spot the energy savings

opportunities, energy monitoring and energy efficiency financing – to over 15,000 representatives of industrial, commercial and institutional organizations across Canada. (More information on CIPEC and its initiatives can be found at www.cipec.ca.)

Recent reports highlight the advantages of using government stimulus funding to help individuals and businesses become more energy efficient. These reports highlight that there is more than a triple bottom-line benefit to energy efficiency. The development and use of these new technologies can help create new jobs; reduce dependence on fossil fuels and improve energy security; reduce emissions of greenhouse gases, common air pollutants and many toxic substances; and, often, reduce the need to build new energy infrastructure.

Pierre Boileau, manager of Climate Change at CSA Standards, says small Canadian companies have many options to help reduce their carbon footprint from using webinar applications to reduce the need for business travel – one of the largest sources of greenhouse gas emissions that a company has control over – to installing energy efficient lighting, heating and appliances to help reduce greenhouse gas emissions.

“Finally, reducing waste from production processes or

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Energy efficiency, continued from page 23

office operations typically has a significant greenhouse gas impact,” says Boileau. “Reducing waste often means reductions in purchasing costs for new materials. Reusing materials can also replace the need to purchase new product. Finally, recycling materials can benefit other organizations or production processes that can use these recycled materials.”

New technologies are essential contributors to the energy efficiency for businesses standards enable new technologies as they help set requirements for design, performance and safety. CSA Standards has been developing energy efficiency standards for the past 30 years – standards that have supported the Energuide™ and ENERGY STAR™ programs, which have influenced the behaviours of manufacturers and consumers with dramatic results.

Businesses can use standards and guides to help identify energy efficiencies, alternative energy options and reduce costs; to support regulatory compliance; to support company risk assessments; to help implement “greener” product design practices and to help meet stakeholder expectations.

The steady influx of efficiency requirements into national and provincial building codes also helps ensure efficiency considerations when undertaking new construction projects.

“Historically, standards have been enablers of new technologies as they help set requirements for design, performance and safety,” says Loggia. “They also help foster market acceptance and adoption through the creation of consistency, uniformity and interchangeability. By creating a framework of consistent rules and applications, standards and related certification programs help encourage innovation while supporting certain levels of safety and performance.”

“The purpose of standards is to keep raising the bar of improving energy efficiency of a product line,” says Burke. “By their very nature, standards remove the lower efficiency models and products out of the market.”

By eliminating the least efficient products from the marketplace, energy savings have translated into lower utility bills for consumers and businesses, reduced greenhouse gas emissions and pollutants whether from power plants or from direct combustion home appliances such as oil and gas furnaces or water heaters.

And through mandatory reference of these standards in legislation, such as in provincial energy efficiency acts, or procurement specifications, this process aids market transformation and can help eliminate the possibility of

the market digressing to lower energy efficient levels when other incentive based programs cease.

CSA Standards adopted a suite of international greenhouse gas accounting standards (ISO 14064) in 2006, and SCC has since named them National Standards of Canada.

As well, there are a number of international and national standards available that deal with individual aspects of construction and renovation that can improve a business’ energy efficiency. For example, the International Electrotechnical Commission (IEC) has published standards for LED modules for general lighting (IEC 62031) and Self-ballasted LED-lamps (IEC/PAS 62612), and Underwriters’ Laboratories of Canada (ULC) has developed standards for mineral fibre thermal insulation for buildings (CAN/ULC-S702-09) and for the materials and systems of exterior insulation and finish systems (CAN/ULC-S716.1-09).

“These standards continue to help governments and industry develop many of their greenhouse gas programs and regulations,” says Boileau. “For example, the Government of Canada is implementing the ISO 14064 standards in its upcoming offset system.”

Energy-efficiency standards help provide solutions for improved energy conservation which will help to reduce energy use by small and big companies in Canada and allow for an economic use of natural resources and a reduction in greenhouse gas emissions. After all, energy efficiency is about reducing waste, both of precious resources and of unwanted emissions. And, as Burke says, standards are about ongoing improvements for sustained energy efficiency gains.

“We see standards as being a cost effective thing government can do to help Canadians become more energy efficient.” ■

Reducing Greenhouse Gas Emissions, continued from page 17

He says that as Canada moves forward with its plans for a national carbon market, he expects there will be more demand for training and certification services.

There will also likely be more demand for national accreditation of the verifiers and validators who back up quantification claims.

With this in mind, the Standards Council of Canada has developed an accreditation program for greenhouse gas validators and verifiers.

Stefan Janhager is the senior program officer for SCC's Greenhouse Gas Accreditation Program (GHGAP). He says as carbon markets are established through national and provincial regulation, and as voluntary quantification becomes more popular, accreditation will ensure the numbers reported by governments and industries are accurate and adhere to international standards.

He says the SCC program ensures that verifiers in the offset system meet the requirements set out in the International Organization for Standardization (ISO) and International Electrotechnical Commission (IEC) standards on Greenhouse gases – *Requirements for greenhouse gas validation and verification bodies for use in accreditation or other forms of recognition* (ISO/IEC 14065:2007), and the procedural document that outlines the conditions and procedures are used for accrediting greenhouse gas validation and verification bodies (CAN-P-1520).

Also, the international standard for accreditation of validation and verification bodies references the ISO 14064 series of standards, which lay out the specifications for the quantification and reporting of greenhouse gas emissions and removals; for the quantification, monitoring and reporting of greenhouse gas reductions or removal enhancements; and for the validation and verification of greenhouse gas assertions.

The Canadian Standards Association (CSA) developed Canadian versions of these standards that are fully harmonized with the international standards; SCC has approved these Canadian versions as National Standards of Canada.

Janhager says that not only will companies that hire validators or verifiers who are accredited by SCC have the assurance that they are qualified to do the job, they can also be certain they meet requirements that are accepted throughout the world.

“Because the accreditation is based on ISO standards, it holds companies to international criteria,” he explains.

He says though Canada is still working out the details of its national carbon market, other jurisdictions, where markets are up and running, require accreditation to ensure the most accurate results possible. And by basing accreditation on the ISO standards, the markets are laying the groundwork for a possible international carbon market in the future.

“We’re doing what they’re doing, in terms of the criteria we demand,” Janhager says. “With many economies using a similar framework, it will greatly assist any plans to share these services, as they have the same applications.”

And it is unlikely emissions measuring tools will be any less important as countries and industries continue to consider how they can lessen their burdens on the environment, even when they can’t avoid producing greenhouse gas emissions.

“We have always recognized there will be emissions we will not be able to reduce at source,” Says VANOC’s Coady. “Offsets are the best option available to neutralize those emissions.”



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