



CO₂ CONNECTED

**Carbon
Management
Canada**

Annual
Report
2013



Contents

- 02** Message from the Chair
- 03** Message from the Scientific Director
- 04** Message from the Managing Director
- 05** An eye on the future
- 10** Universities and Network Investigators
- 12** Independent Auditors' Report
- 13** Statements of Financial Position
- 13** Statements of Operations and Changes in Net Assets
- 14** Statements of Cash Flows
- 14** Notes to Financial Statements



What Carbon Management Canada has achieved in the last year is nothing short of remarkable.

We grew our research portfolio with eight exciting new projects, we watched as our researchers filed patent applications and rolled out start-up companies, and we supported ventures and programs designed to enrich the education experience of our Highly Qualified Personnel. We also welcomed close to 200 attendees to our second annual conference and funded a wide variety of workshops and other outreach activities.

It was also a year of challenge. Much of our energy and attention was focused on preparing for our move out of the Networks of Centres of Excellence program. CMC's board and staff developed a new self-sustaining business model and we are moving ahead on this next phase of our development.

We invite you into the pages of this annual report to share the numerous achievements of which we are so proud and reflect on our plans for growth in the coming months.

Message from the Chair

It's been an exciting and challenging year for Carbon Management Canada. We funded eight new research projects under our Round Three competition, and also began planning for our transition away from the Networks of Centres of Excellence program toward a self-sustaining business model.

This was a year in which we strengthened ties with our network investigators and focused on enhancing the education experience of our many Highly Qualified Personnel (HQP). Through the efforts of all associated with the CMC network, the number of industry partnerships grew and research began to show results in the form of patent applications, invention disclosures and start-up companies. It was, in short, a year we can look back on with pride.

To briefly touch on highlights, in 2012-2013 Carbon Management Canada:

- Awarded \$3.75 million to eight new exciting research projects, bringing our total commitment to \$22 million for 44 projects;
- Broadened our reach beyond the fossil energy sector by funding projects in the cement and mining industries;
- Expanded training opportunities for HQP by funding an international exchange program, supporting travel to an energy summer school in the UK, and offering courses and webinars;
- Fostered collaboration by supporting the creation of the Low Carbon Innovation Alliance, a group of six Canadian NGO and government organizations intent on accelerating carbon management technology innovation through improved alignment and synergies;
- Celebrated as our researchers announced 3 invention disclosures, 3 patent applications filed, 1 patent issued and the launching of 2 new start-up companies; and
- Supported international collaboration by signing MOUs with three organizations: the UK Carbon Capture and Storage Research Centre (UKCCSRC), the Stanford Center for Carbon Storage (SCCS) and the Korea CCS Research Centre.

Much of the board's work over the last year has revolved around setting a new direction for Carbon Management Canada. I am privileged to work with this group of dedicated individuals whose diverse backgrounds help make for a well-rounded board able to bring a variety of valuable perspectives to problem solving. The expertise and guidance offered by our board through this time of change have enabled the successful planning of an innovative and unique new model for engaging researchers and industry, and shortening the cycle time from ideas to impact.

The performance of CMC staff also needs to be recognized. This talented group has worked diligently through the last year and has maintained its focus on the smooth functioning of the network. It is because of their continued commitment to Carbon Management Canada, its researchers and its mandate that the company has been able to reach many of its targets this year.

In the next year, the network will begin building the foundation for its new business model and as it does so, it will move into uncharted waters. But given the dedication and caliber of our board and our staff, I have every confidence that we will succeed in our drive to deliver on our mission of developing the technologies, knowledge and people to enable industries to address the challenge of industrial greenhouse gas emissions.

Sincerely,
Gordon Lambert
Chair

Message from the Scientific Director

To meet our goal of enabling large-scale industrial emitters to quickly reduce carbon emissions in the transition at the end of the fossil fuel era, CMC has been building on our success in developing a successful academic network of research across Canada.

The network has supported and encouraged some of the largest teams of researchers working in this area anywhere on Earth. It has worked with the best groups in the world within and outside Canada. It has produced many discoveries and hints of technologies that may make dramatic differences to solving the greenhouse gas emissions reduction problem. To enable the accelerated transition away from conventional usage fossil fuels, CMC has been focusing on research aimed at developing technologies to increase the efficiency of energy recovery during fossil fuel use, store CO₂ or other carbon forms away from the atmosphere/oceans, convert CO₂ to recyclable and usable materials including fuels, and even some work relevant to renewable energy systems.

The solutions, however, will not just be technological ones as the big challenge is the large scale changes in business and governance models needed for solutions to be deployed at adequate scale. Crucially we have also been supporting large social science projects and activities related to accelerating deployment of existing and future technologies. As we heard at our marvellous annual meeting in June, agreement on the social factors involved in fossil fuel decarbonisation are a major challenge, which is why we have also been investing in probably the largest scale social science projects ever seen in Canada in this area.

We realized from the start of CMC that successful academic networks are not, on their own, enough and our research must be translated into deployed solutions, both technical and social. So we have also been developing a CMC 2.0 model that keeps the discovery and invention of our current network but adds what we hope are more effective technology production, industry and government focused research institutes to the model. We expect the first institute to be up and running by early 2014.

Critical to the success of our mission is the active participation of industry as a collaborative partner, working with us to identify and then solve carbon management challenges. We do also need to see massively increased and sustained industry and government spending on research, development and deployment of emission reduction technologies in the fossil fuel sector, in addition to continued developments of the renewable energy alternatives that will ultimately replace them.

We haven't yet solved the problem but we have taken many key steps towards creating the teams and building the knowledge needed to achieve that goal. Thanks for your support and efforts. We are always happy to discuss what we have done and welcome suggestions.

Sincerely,
Steve Larter
Scientific Director

Message from the Managing Director

Looking at the progress being reported this year is tremendously gratifying. It is amazing to see the quantity of high-quality and potentially high-impact work that has been done (and is still ongoing) in the portfolio of 44 projects CMC has chosen to support.

This speaks not only to the great work of the principle investigators and their research teams, but also to the serious efforts of the Research Management Committee, CMC Theme Leads, and the many external reviewers who have worked diligently to ensure that the most promising projects make the grade.

This portfolio of mainly academic research projects provides the foundation on which CMC is now able to build. This will result in a series of sustainable research institutes. Each will address a specific industry challenge area, accelerating the innovation cycle from ideas to impact. Under the new model CMC reaches beyond the research bench to support the translation, integration, application development and field-testing of innovations to meet the risk/reward profiles necessary to attract industrial support for commercialization.

The first of these institutes, the Containment and Monitoring Institute (CaMI), hosted by the University of Calgary, is already under development. The key industry challenge here relates to development and characterization of Measurement, Monitoring and Verification technologies associated with subsurface movement of fluids. These include CO₂ in Carbon Capture and Storage or Enhanced Oil Recovery projects, and also acid gas disposal, oil sands development, and other injection technologies.

In the meantime CMC is working with industry, researchers and governments to prioritize additional institutes, each attracting a high degree of support, and offering potential for substantial impact, reducing industrial GHG emissions.

The engagement of our stellar Board of Directors throughout the development of CMC 2.0 has been crucial to setting us on a solid footing. Coupled with the ongoing support of our sponsors and valuable feedback from industry groups, the Board has established and refined the insights that will guide us to long-term success.

Finally, I want to express my thanks to the CMC administrative team who have weathered some uncertain times but remain positive and enthusiastic as we prepare for a new period of growth and development.

Sincerely,
Richard Adamson
Managing Director

An eye on the future

With an eye on its move out of the Networks of Centres of Excellence Program in June 2013, CMC spent much of the 2012-13 fiscal year developing a new self-sustaining business model to take it into the future. A Business Model Working Group comprising members of CMC's board set the initial direction for the new plan which was then further developed by CMC staff.

Still focused on addressing the challenge of greenhouse gas reduction associated with large industrial emitters, the new Carbon Management Canada will bridge the gap between use-inspired research and commercial/industrial adoption and implementation. Under this unique model, a series of institutes will be hosted by research institutions across Canada, with each focused on a particular challenge area. Each of these institutes will:

- Manage R&D projects for government clients, small to medium enterprises, and larger industries on a contract basis;
- Connect industry stakeholders to a national and international network of researchers;
- Train industry professionals, graduate and undergraduate students; and
- Provide facilities where researchers from around the world can carry out their work.

The first institute, the Containment and Subsurface Monitoring Institute (CaMI), will focus on the field-based development and performance validation of a broad range of sensors, instruments and analyses approaches associated with carbon capture and storage, enhanced oil recovery, and monitoring containment verification associated with exploration, production and stimulation activities. The technologies developed at CaMI will be transferable to other monitoring and assessing applications of commercial interest (e.g., acid gas disposal, fracking, steam chamber imaging, and enhanced coal bed methane.) Hiring has already commenced for this ground-breaking institute.

Facilitating research

In its ongoing quest to find and develop the technologies and knowledge that will help reduce carbon emissions, CMC issued a third call for proposals in late 2012. The call resulted in 95 letters of intent with 42 research proposals submitted. After a robust review process, which included reviews by international experts and by the Research Management Committee, the network approved eight research projects for \$3.75 million. This brings the network's total commitment to \$22 million for 44 research projects.

This call expanded the network's purview beyond the fossil energy sector and CMC is now engaged with the fossil energy, cement and mining industries. We also added 25 new Canadian principal investigators, five new international researchers (from the U.S., Australia and Germany), one new Canadian university (Wilfrid Laurier), four new international universities (Ohio State University, Monash University, University of Melbourne, and University of Queensland), and two new international research centres (GFZ Helmholtz Centre and TU Bergakademie Freiberg).

Like CMC's other calls, Round 3 projects straddled all four themes. Among the new projects were initiatives to build greenhouse gas sensors using nanotechnology; develop new sorbents for chemical looping CO₂ capture systems; improve ways of assessing cap rock integrity for CO₂ storage; discover ways of reducing CO₂ emissions in cement production; and use pulverized rock from mine tailings to remove CO₂ from flue gas. The new projects and lead principal investigators are:

Project A346: Pre- and post-combustion CO₂ capture using novel composite CaO/CuO sorbents
Lead Investigator: Arturo Macchi, University of Ottawa

Project B312: Development of single-molecule level multi-species nanowire-based sensors for carbon emissions
Lead Investigator: Harry Ruda, University of Toronto

Project C319: Carbonate production by sequestration of industrial CO₂: Revalorization of mine and industrial waste
Lead Investigator: Guy Mercier, Institut national de la recherche scientifique

Project C390: Accelerating carbon mineralization in mine wastes
Lead Investigator: Greg Dipple, University of British Columbia

Project C393: Physical-chemical response to geomechanical processes during geological sequestration of scCO₂
Lead Investigator: Dr. Giovanni Grasselli, University of Toronto

Project C394: A new approach to quantitative CO₂ injection monitoring with geo-electrical methods
Lead Investigator: Dr. Bernard Giroux, Institut national de la recherche scientifique

Project D363: Low carbon fuel demonstration pilot plant for the cement industry
Lead Investigator: Dr. Warren Mabee, Queen's University

Driving innovation development

Carbon Management Canada continues to support innovation by identifying high commercial potential research and connecting researchers to industry stakeholders. Working with CMC and its investigators gives industry access to some of the country's leading researchers in the field of carbon management as well as the students and postdoctoral fellows who represent the next generation of innovators. Researchers, on the other hand, benefit from this contact with industry because they can better align their research objectives with high-impact industry challenges.

Many of the researchers in our portfolio are working with industry partners to develop solutions to carbon management and sustainability challenges. Others are working with government decision makers to offer input into the impacts of various regulations and policy-making options.

For instance:

- Dr. David Sinton, Institute for Sustainable Energy at the University of Toronto, is developing a bitumen-gas interaction testing system using a Lab-on-a-chip and has partnered with Suncor Energy on a next phase of his project.
- Dr. Warren Mabee, Queen's Institute for Energy and Environmental Policy, is working with Lafarge Cement to test the use of low carbon fuels, including construction and demolition waste, asphalt shingles, utility poles and railway ties, to help power cement plants and will also assess the life-cycle impacts of different fuel sources.
- Dr. Harry Ruda, Centre for Advanced Nanotechnology at the University of Toronto, is developing—with the help of Kyoto Technologies—an affordable, ultra-sensitive sensor that can detect CO₂ at low concentrations.

In the past year, CMC's researchers have posted the following results:

- Three invention disclosures
- Three patent applications filed
- One patent issued
- One license under discussion
- Two start up companies off the ground – Dynamic Resonance Analysis Ltd. and Tai-Rocky Inc.

CMC's management team has also been heavily involved in ventures to facilitate technology uptake and knowledge transfer. Over the last year, discussions have been held with Canada's Oil Sands Innovation Alliance (COSIA) to support their Greenhouse Gas Environmental Priority Area. In addition, CMC played a key role bringing together a group of Canadian organizations to form the Low Carbon Innovation Alliance (LCIA). This strategic coalition of six Alberta and national organizations intends to work to accelerate innovation in carbon management technology through improved alignment and synergies. In addition to CMC, other members of the coalition are Climate Change and Emissions Management (CCEMC) Corporation, Sustainable Development Technology (SDTC), Canada's Oil Sands Innovation Alliance (COSIA), Alberta Innovates – Technology Futures (AITF), and Alberta Innovates – Energy and Environment Solutions (AIEES). Natural Resources Canada (NRCan) played an important role in the development of the LCIA and will work as an ongoing strategic partner to help facilitate LCIA goals.

Training tomorrow's innovators

A critical element in any plan to boost innovation in the country's carbon management sector is training and developing Highly Qualified Personnel (HQP) to step into roles as technical experts and leaders in industry, government and academia.

CMC works to create training and education opportunities for HQP beyond the walls of the classroom. For instance, two courses were held in conjunction with CMC's May 2012 conference in Gatineau: a one-day workshop on Carbon Capture and Storage was held pre-conference and a two-day GHG Accounting course was held post-conference, both at Carleton University. HQP were also offered a chance to showcase their research to industry attendees and other academics in two poster sessions held during CMC's 2012 annual scientific conference. Over 80 posters highlighted some of the work being undertaken by HQP, a significant increase over the 55 posters displayed the year before.

A CMC webinar series got its start with a presentation by former CMC HQP Alfred Lam, who talked to 15 current HQP about venture capital and start-ups. Dr. Lam has two patent applications and is currently an analyst with Chrysalix Energy Venture Capital.

The network also facilitated international experiences for its HQP. CMC supported five students to attend the 2013 UK Energy Research Centre Summer School at the University of Warwick to develop an understanding of energy systems as a whole and pathways to low-carbon and resilient energy systems. CMC is also funding an international exchange program that will send nine HQP to universities in the UK and Australia, and will support seven international HQP to travel to Canada to work with Canadian academics. The exchange is a co-operation between CMC and three research organizations: the UK Carbon Capture and Storage Research Centre (UKCCSRC), the Australian Cooperative Research Centre for Greenhouse Gas Technologies (CO₂CRC) and the Stanford Center for Carbon Storage (SCCS).

Closer to home, CMC helped six of its HQP travel to Banff for the annual Banff Venture Forum and Entrepreneur Bootcamp in October 2012. The one-day Bootcamp, held prior to the forum, provided participants with details on fundraising in Western Canada and the U.S., valuations, deal structures, and tips and trends. HQP attending were coached on how to develop an investment pitch and for their entry, they put together a pitch on CMC's research and used their own projects as examples. At the Forum, HQP got an introduction to the world of venture capitalists and available funding opportunities and start-up incubators.

To gain an idea of future demands in the marketplace, CMC commissioned Navius Research to carry out a labor demand forecast. The study focused on investments in carbon capture and storage in the electricity, oil and gas extraction, petroleum refining, and iron and steel sectors, as well as the cogeneration of heat and power in the oil sands. It then examined the labor market demands that would accompany growth projected under two GHG regulatory scenarios. The analysis showed that under either scenario, there would be a significant increase in demand for positions. Many of the skill sets required are those for which there is already a shortage projected in these industries based on a business-as-usual forecast.

Facilitating networking and collaboration

Carbon Management Canada has continued to develop opportunities to link researchers with each other and with industry. We've also collaborated with other research organizations that have sustainability/carbon management concerns and we have provided support to our researchers hosting workshops that bring together industry and academics for in-depth discussion and learning.

Certainly one of our larger, more exciting collaborations was working with the MIT Joint Program on the Science and Policy of Global Change to host the Global Change Forum in Banff, Alberta. This invitation-only forum brought together 120 energy experts from around the world to focus on the role of fossil energy in the transition toward a low carbon future. Featured speakers were drawn from both industry and academia and included Lev M. Freinkman, a senior economist from BP Russia; Sigurd Heiberg, an advisor to Statoil's Strategic Advisory Council; David Hone, a Senior Climate Advisor with Shell International; Dan Wicklum, the Chief Executive of Canada's Oil Sands Innovation Alliance (COSIA), along with several speakers from Suncor Energy including CMC Board Chair Gord Lambert, Executive Advisor, Sustainability & Innovation; and Steve Kaufman, General Manager, Sustainable Development, Oilsands.

In February, CMC hosted the first of what will become a series of webinars. For this inaugural session, Alfred Lam, an analyst with Chrysalix Energy Ventures, presented about venture capital and start-ups. Two months later, CMC investigators Greg Dipple, University of British Columbia, and Guy Mercier, Institut national de la recherche

scientifique, spoke about using carbon mineralization to reduce levels of CO₂. Dipple's research involves accelerating the mineralization process in hard rock mine tailings. Mercier, on the other hand, is developing a process that would see crushed rock from mine tailings remove CO₂ from flue gas through the process of mineralization. The webinar was attended by over 40 people, many of whom were from the mining and cement industries in Canada and in the U.S. Following the webinar, Prof. Mercier was contacted by a Canadian steel and iron ore producer about the possibility of engaging in collaborative work. Discussions are ongoing.

The Carbon Commons continued to provide a platform for collaboration and introduced the Edistorm (now Stormboard) online collaboration/brainstorming environment. Although CMC said goodbye to Patrick Mann, IT Director, the Commons is still being maintained by the network.

Our biggest networking event of the year, our annual Scientific Conference, took place in May 2012 in Gatineau, Quebec. The conference, CMC's second, grew from 135 in 2011 to 185. Academics, HQP, and industry and government experts from across Canada and the U.S. gathered to share ideas and learn about research taking place in the network. A special focus was put on transfer-to-practice and sessions were held on IP, entrepreneurship, and research and development support. As mentioned previously, two poster sessions provided the opportunity for research teams, and especially HQP, to showcase their work. A special pre-conference evening meeting was held at which HQP discussed plans to establish an Early Career Researchers Association. Conference participants were also able to take advantage of a tour of the state-of-the-art CanmetENERGY labs at Bells Corners and to listen to a panel of experts discuss carbon capture and storage at a Science Café held at a downtown Ottawa pub.

In other ventures, CMC:

- Co-hosted with TransAlta and the Global Carbon Capture and Storage Institute (GCCSI) a Carbon Capture and Storage Systems Integration Workshop for about 40 local and international experts;
- Supported, with the University of Calgary's Institute for Sustainable Energy, Environment and Economy (ISEEE) an Industry Day on Solid Oxide Fuel Cells that was organized by CMC researcher Viola Birss;
- Co-hosted, also with ISEEE, a UK-Canada trade mission on CCS that was attended by more than 40 people who participated in an all day meeting with the 12-member UK delegation;
- Supported a Risk Management Workshop in Waterloo that was organized by Project Lead Maurice Dusseault; and
- Worked with Prof. Shi-Ling Hsu to sponsor a special plenary session focused on the potential for environmental taxation to induce technology progress in reducing greenhouse gases at the Annual Global Conference on Environmental Taxation. As well as sponsoring the panel, CMC offered a prize of CDN\$1000 for a paper written on the same topic.

Board of Directors

Gordon Lambert (Chair)

Executive Advisor
Sustainability and Innovation
Suncor Energy

Steve Larter (Ex-Officio)

Scientific Director
Carbon Management Canada

Richard Adamson

Managing Director
Carbon Management Canada

Sally Benson

Director, Global Climate
and Energy Project
Professor, Energy &
Resources Engineering
Stanford University

Christian Ches

Department of Geography
University of Toronto

John Grace

Professor, Chemical &
Biological Engineering
University of British Columbia

Eddy Isaacs

Chief Executive Officer
Alberta Innovates – Energy
and Environment Solutions

John LeGrow

Vice President, Oilsands Strategy,
Planning & Integration
ConocoPhillips Canada

John Loughhead

Executive Director
UK Energy Research Centre

Heather MacLean

Associate Professor, Civil Engineering
University of Toronto

Frank Mauer

Associate Vice-President (Research) for
Edward McCauley (Ex-Officio)
Vice-President (Research)
University of Calgary

Stephanie Michaud (Ex-Officio)

Program Deputy Director
Networks of Centres of Excellence

Geoff Munro

Chief Scientist
Natural Resources Canada

Dwight Peters

President
Schlumberger Carbon Services

Vicky Sharpe

President and CEO
Sustainable Development Technology
Canada

Richard Shaw

President
Richard A. Shaw
Professional Corporation

Keith Turnbull

President
KSTurnbull Professional Corp.

Ed Whittingham

Executive Director
Pembina Institute

Research Management Committee

Steve Larter

Scientific Director
Carbon Management Canada Inc.

Richard Adamson

Managing Director
Carbon Management Canada Inc.

Marc D'Iorio

Director General,
Geological Survey of Canada
Natural Resources Canada

Stewart Elgie

Professor, Faculty of Law
University of Ottawa

John Grace

Professor, Chemical and
Biological Engineering
University of British Columbia

Don Lawton

Professor and Chair in
Exploration Geophysics
University of Calgary

Bernhard Mayer

Professor, Department of Geoscience
University of Calgary

James Meadowcroft

Professor and Canada
Research Chair in Governance
for Sustainable Development
Carleton University

Stephanie Michaud (Ex-Officio)

Program Deputy Director
Networks of Centres of Excellence

Rick Musleh

Sector Manager, Energy
Enterprise Saskatchewan/Industry
& Resources

Allen Pfeffer

Senior Expert
Alstom Power

Andrew Pollard

Professor and Queen's Research Chair
Queen's University

Mike Scribner

Manager, Technology and Optimization,
Oil Sands
ConocoPhillips Canada

John Shaw

Professor and NSERC/AB Innovates
Industrial Research Chair in Petroleum
Thermodynamics
University of Alberta

John Zhou

Executive Director,
Environmental Technologies
Alberta Innovates Technology Futures –
Energy and Environment Solutions

Jim Rowley

Independent

Universities and Network Investigators

Carleton University*

James Meadowcroft
Glen Toner

Clark University

Jennie Stephens

Cranfield University

Edward J. Anthony

Dalhousie University*

Meinhard Doelle

École Polytechnique de Montréal*

Jamal Chaouki

Robert Legros

Gregory Patience

Florida State University

Shi-Ling Hsu

GFZ German Research Centre for Geosciences

Cornelia Schmidt-Hattenberger

Institute national de la recherche scientifique*

Jean-Francois Blais

Bernard Giroux

Guy Mercier

McGill University*

Subhasis Ghoshal

Alphonso Mucci

Patrick Selvadurai

Memorial University*

Natalie Slawinski

Monash University

Siobhan Wilson

Olds College*

Ohio State University

David Cole

Queen Mary, University of London

Frances Bowen

Queen's University*

Warren Mabee

Darko Matovic

Andrew Pollard

St. Francis Xavier University*

David Risk

Simon Fraser University*

Shahin Dashtgard

Mark Jaccard

John Nyboer

Texas A&M University

Tarla Peterson

Trent University*

Stephen Hill

TU Bergakademie Freiberg

Klaus Spitzer

Université Laval*

Serge Kaliaguine

University of Alberta

Subir Bhattacharjee

Weixing Chen

Phillip Choi

Morris Flynn

Julia Foght

Jeffrey Gu

Rajender Gupta

Zaher Hashisho

Ergun Kuru

Steve Kuznicki

Sushanta Mitra

David Nobes

Vinay Prasad

Benjamin Rostron

Mauricio Sacchi

Doug Schmitt

Marc Secanelli Gallart

John Shaw

Thomas Thundat

Japan J. Trivedi

Mirko Van der Baan

Zhenghe Xu

University of Arizona

Jennifer McIntosh

University of British Columbia*

Gregory Dipple

Naoko Ellis

Peter Englezos

Baizeng Fang

John Grace

Savvas Hatzikiriakos

Michael Hitch

C. Jim Lim

Ulrich Mayer

David P. Wilkinson

University of Calgary

Joseph Arvai

Nigel Bankes

Joule Bergerson

Francis Bowen

Viola Birss

Jared Carbone

David Eaton

Edna Einsiedel

Shaun Fluker

Ian Gates

Hassan Hassanzadeh

Josephine Hill

David Keith

Janne Kettunen

Jeong Woo Kim

Steve Larter

Don Lawton

Nader Mahinpey

Gary Margrave

Bernhard Mayer

Pedro Pereira Almao

Mehran Pooladi-Darvish

Antonin Settari

George Shimizu

Michael Sideris

Venkataraman Thangadurai

Gerrit Voordouw

Harrie Vredenburg

Ron C.K. Wong

Patrick Wu

University of Lethbridge*

Luis Escobar

University of Manitoba*

Wooil Moon

University of Melbourne

Sandra Kentish

University of Minnesota

Melissa Pollak

Elizabeth Wilson

University of New Brunswick*

University of Ottawa*

Yazid Dissou
Stewart Elgie
Mamadou Fall
Daniel Krewski
Christopher Lan
William Leiss
Arturo Macchi
Poupak Mehrani
Nicholas Rivers
Abdelhamid Sayari
Tom Woo

Université du Québec à Trois-Rivières*

Louis Rinfret

University of Queensland

Gordon Southam

University of Regina*

Christine Chan
Paitoon Tontiwachwuthikul

University of Saskatchewan*

Christopher Hawkes
James Merriam
Ray Spiteri

University of Toronto*

Aimy Bazylak
Giovanni Grasselli
Olivera Kesler
Eugenia Kumacheva
Douglas Macdonald
Heather MacLean
Charles Mims
Barbara Sherwood Lollar
Harry Ruda
David Sinton
Douglas Stephan

University of Victoria*

Martin Jun
Karena Shaw
Peter Wild

University of Waterloo*

James R. Craig
Maurice Dusseault
Robert Gracie
Yuri Leonenko
Jatin Nathwani
Carolyn Ren
John Z. Wen

University of Western Ontario*

Tima Bansal
Adam Fremeth
Hugo de Lasa

Wilfrid Laurier University*

Randall Wigle

York University*

Janusz Kozinski
Spiros Pagatakis

Alberta Innovates Technology Futures

Karen Budwill
Partha Sarkar

National Research Council of Canada

Darryl Dormuth

**Natural Resources Canada
(Geological Survey of Canada)**

Joseph Henton
Don White

New Paradigm Engineering Ltd.

Bruce Peachey

Pembina Institute

Matthew Horne

**Petroleum Technologies Research
Council**

Malcolm Wilson

* Indicates academic institution is a CMC-NCE network member

Independent Auditors' Report

To the Members of Carbon Management Canada Inc.

We have audited the accompanying financial statements of Carbon Management Canada Inc., which comprise the statements of financial position as at March 31, 2013, March 31, 2012 and April 1, 2011, and the statements of operations and changes in net assets and cash flows for the years ended March 31, 2013 and March 31, 2012, and a summary of significant accounting policies and other explanatory information.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with Canadian accounting standards for not-for-profit organizations, and for such internal control as management determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditors' Responsibility

Our responsibility is to express an opinion on these financial statements based on our audits. We conducted our audits in accordance with Canadian generally accepted auditing standards. Those standards require that we comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditors' judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained in our audits is sufficient and appropriate to provide a basis for our audit opinion.

Opinion

In our opinion, the financial statements present fairly, in all material respects, the financial position of Carbon Management Canada Inc. as at March 31, 2013, March 31, 2012 and April 1, 2011, and the results of its operations and its cash flows for the years ended March 31, 2013 and March 31, 2012 in accordance with Canadian accounting standards for not-for-profit organizations.

Collins Barrow Calgary LLP

Chartered Accountants

Carbon Management Canada Inc.

(incorporated under the laws of Canada)

Statements of Financial Position

	March 31, 2013	March 31, 2012	April 1, 2011
Assets			
Current assets			
Cash (note 5)	\$ 25,618,861	\$ 22,143,528	\$ 15,348,599
Accounts receivable	187,467	5,123,611	10,210,828
Prepaid expenses	30,926	55,430	10,779
	\$ 25,837,254	\$ 27,322,569	\$ 25,570,206
Liabilities			
Current liabilities			
Accounts payable and accrued liabilities (note 3)	\$ 590,799	\$ 235,659	\$ 230,612
Deferred revenue (note 4)	23,966,020	26,231,266	24,878,635
	24,556,819	26,466,925	25,109,247
Net Assets	1,280,435	855,644	460,959
	\$ 25,837,254	\$ 27,322,569	\$ 25,570,206

Subsequent events (note 1)

Commitments and contingencies (note 7)

See accompanying notes

Statements of Operations and Changes in Net Assets

Years Ended March 31	2013	2012
Revenue		
Federal grants	\$ 7,272,768	\$ 6,845,047
Provincial grants	1,679,477	2,182,321
Industry grants	615,000	460,000
Interest income	389,812	384,581
	9,957,057	9,871,949
Expenses		
Project funding	7,451,704	7,941,947
General and administrative (note 5)	1,582,375	1,153,161
Advertising and outreach	210,530	69,349
Consultants	159,711	261,371
Professional fees	127,946	51,436
	9,532,266	9,477,264
Excess of revenue over expenditures	424,791	394,685
Net assets, beginning of year	855,644	460,959
Net assets, end of year	\$ 1,280,435	\$ 855,644

See accompanying notes

Statements of Cash Flows

Years Ended March 31	2013	2012
Cash provided by (used in):		
Operating activities		
Excess of revenue over expenditures	\$ 424,791	\$ 394,685
Changes in non-cash working capital		
Accounts receivable	4,936,144	5,087,217
Prepaid expenses	24,504	(44,651)
Accounts payable and accrued liabilities	355,140	5,047
Deferred revenue	(2,265,246)	1,352,631
	3,050,542	6,400,244
Cash inflow	3,475,333	6,794,929
Cash, beginning of year	22,143,528	15,348,599
Cash, end of year	\$ 25,618,861	\$ 22,143,528

Notes to Financial Statements

1. Nature of operations

Carbon Management Canada Inc. (the "Organization") focuses on funding the development of the technologies, insights, and highly qualified personnel to reduce fossil fuel carbon emissions in Canada while at the same time maintaining Canada's global position as a competitive and reliable energy supplier.

On February 11, 2010, the Organization signed a grant agreement with the federal government for their Networks of Centres of Excellence ("NCE") Program. The purpose of the NCE Program is to promote the development of technologies and practices for reduction of carbon emissions related to fossil fuel energy production and consumption. The NCE Program agreement with the federal government will end on June 30, 2013. The University of Calgary ("Network Host") has been appointed to administer the use of the grant funds in accordance with the terms and conditions of the agreement. The Network Host will implement and oversee controls designed to ensure transactions charged to the grant are eligible expenses and compliant with the guidelines. Commencing July 1, 2013, the Network Host will no longer be administering or overseeing the use of the grant funding.

On March 8, 2010, the Organization also signed a grant agreement with Alberta Environment, whereby the Alberta government will match the federal grant with an equal amount.

The Organization was incorporated on December 23, 2009, under Part II of the Canada Corporations Act and is exempt from tax under the Canada Income Tax Act.

2. Significant accounting policies

The financial statements were prepared in accordance with Canadian generally accepted accounting standards for not-for-profit organizations and include the following significant accounting policies:

(a) Revenue recognition

The Organization follows the deferral method of accounting for grant revenue. Restricted contributions are recognized in the year in which related expenses are incurred. Unrestricted contributions are recognized as revenue when received or when receivable if the amount to be received can be reasonably estimated and collection is reasonably assured.

Interest income is recognized on an accrual basis as it is earned.

(b) Measurement uncertainty

The valuation of accounts receivable is based on management's best estimate of the provision for doubtful accounts.

The valuation of accrued liabilities is based on management's best estimate of the expenses incurred during the year that will be payable in future periods.

The valuation of deferred revenue is based on management's best estimate of the revenue earned in accordance with each grant agreement.

By their nature, these estimates are subject to measurement uncertainty and the effect on the financial statements of changes in such estimates in future periods could be significant.

(c) Financial instruments

The Organization initially measures its financial assets and liabilities at fair value, except for certain non-arm's length transactions that are measured at the exchange amount.

The Organization subsequently measures all its financial assets and financial liabilities at amortized cost.

Financial assets measured at amortized cost include cash and accounts receivable.

Financial liabilities measured at amortized cost include accounts payable and accrued liabilities.

Financial assets measured at cost or amortized cost are tested for impairment, at the end of each year, to determine whether there are indicators that the asset may be impaired. The amount of the write-down, if any, is recognized in excess of revenue over expenditures. The previously recognized impairment loss may be reversed to the extent of the improvement, directly or by adjusting the allowance account. The reversal may be recorded provided it is no greater than the amount that had been previously reported as a reduction in the asset and it does not exceed original cost. The amount of the reversal is recognized in excess of revenue over expenditures.

3. Government remittances

Accounts payable and accrued liabilities includes payroll remittances of \$25,292 (2012 - \$19,608).

4. Deferred revenue

	March 31, 2013	March 31, 2012	April 1, 2011
Provincial grant	\$ 20,558,498	\$ 22,237,975	\$ 19,420,297
Federal grant	3,407,522	3,843,291	5,308,338
Industry partner grant	-	150,000	150,000
	\$ 23,966,020	\$ 26,231,266	\$ 24,878,635

Per the grant agreement for the NCE Program as disclosed in note 1, the Organization was to received funding of \$25 million. The grant agreement was amended in November 2012 to reduce the amount of funding by approximately \$4.2 million to \$20.8 million.

5. Related party transactions

During the year, the Organization paid general and administrative costs to the Network Host of \$121,291 (2012 – \$19,485), of which \$112,500 (2012 – \$NIL) is included in accounts receivable, and \$225,000 (2012 – \$11,751) in accounts payable and accrued liabilities. Overall costs in accounts payable were shared with another organization.

Cash includes \$4,020,956 (2012 – \$4,074,530) held in trust by the Network Host on behalf of the Organization. The Network Host paid interest of \$100,526 (2012 – \$154,800) to the Organization on the funds held in trust. The Network Host transfers funds to the Organization as it incurs expenditures related to the Federal grant. At March 31, 2013, the Organization had spent \$NIL (2012 – \$76,337) more than the Network Host had transferred due to the timing of invoices between the parties.

The Network Host leases office space to the Organization at no cost. No amount has been recorded in these financial statements related to the lease.

These transactions are in the normal course of operations and are measured at the exchange amount which is the amount of consideration established and agreed to by the related parties.

6. Financial instruments

The Organization is exposed to the following significant financial risks:

(a) Credit risk

Credit risk is the risk that one party to a financial instrument will cause a financial loss for the other party by failing to discharge an obligation. The financial instruments that potentially subject the Organization to a significant concentration of credit risk consist primarily of cash and accounts receivable. The Organization mitigates its exposure to credit loss by placing its cash with a major financial institution. Cash includes \$4,020,956 (2012 –\$4,074,530) which is held by the Network Host, which is a large government funded university. Accounts receivable consists of a receivable from a partner organization relating to their share of costs paid to the Network Host, interest receivable on the bank balances and goods and services tax due from the Federal Government of Canada, none of which result in significant credit risk.

7. Commitments and contingencies

The Organization receives a majority of its funding through grants that specify the term of the funding and the eligible expenditures under the grant. The Organization may be required to repay all or a portion of the grant if ineligible expenditures are incurred, or if all of the grant monies are not spent within the designated time frame.

Funds have been committed for future eligible expenditures through approved qualifying projects, as follows:

2014	\$ 5,568,023
2015	1,040,780
	<hr/> \$ 6,608,803

8. First-time adoption

The financial statements for the year ended March 31, 2013 are the first financial statements for which the entity has applied Canadian generally accepted accounting standards for not-for-profit organizations (“ASNPO”) in Part III of the Canadian Institute of Chartered Accountants (“CICA”) Accounting Handbook. The financial statements were prepared in accordance with Section 1501, “First-time adoption by not-for-profit organizations” which requires full retrospective application of all ASNPO accounting policies as of the date of transition, which is the beginning of the earliest period for which the Organization presents full comparative information under ASNPO. Previously, the Organization prepared its financial statements in accordance with Canadian generally accepted accounting standards in Part V of the CICA Handbook (“previous GAAP”). The Organization did not elect to use any exemptions available for first-time adopters of ASNPO nor was the Organization prohibited from the retrospective application of any standards. There are no significant differences in the accounting policies applied by the Organization under ASNPO and those applied under previous GAAP. As a result, the impact of the change in the accounting standard framework from previous GAAP to ASNPO is limited and there have been no adjustments to net assets as of the date of transition.

CONNECTED



In appreciation of
our supporters:





Carbon Management Canada
CMC-NCE

EEEL 403, 2500 University Dr. NW
Calgary, Alberta, Canada T2N 1N4
T: 403: 210 9784
E cmcinfo@cmcghg.com
www.cmcghg.com



NCE RCE

Networks of Centres of Excellence of Canada | Réseaux de centres d'excellence du Canada

