# CORPORATE RESPONSIBILITY REPORT **2012**





Encana Corporation

# CORPORATE RESPONSIBILITY REPORT 2012

# CONTENTS

A message from Clayton H. Woitas	/ 2
Operating area map	/ 4
Materiality	/ 6
Accomplishments and priorities	/ 8
Financial and operating performance	/ 10
Maintain strong governance throughout the organization	/ 12
Access land and maintain our social license to operate	/ 16
Capital focus on liquids and oil development	/ 20
Manage resources in a low-price environment	/ 24
Develop the skills and leaders to support our operations now and in the long term	/ 28
Continually improve our culture of safety at work, on the road and at home	/ 32
Manage regulatory risk	/ 36
Manage our air and greenhouse gas emissions	/ 40
Maintain a comprehensive approach to water management	/ 44
Independent assurance report	/ 48
Advisories and terms	/ 49

We leverage our knowledge for success.

# A MESSAGE FROM CLAYTON H. WOITAS

Over the past year, in the face of a challenging price environment for natural gas, Encana has continued to deliver on its corporate responsibility mandate. Despite historic market challenges, we have been consistent in our pursuit of strong governance, improving the safety of our worksites and mitigating our environmental impacts. This unwavering commitment to sound governance and responsible resource development played a critical role in our operational success in 2012 and will continue to support our business strategy in the future.

# Unlocking value through Encana's joint venture strategy

The natural gas industry faced significant market challenges in the past year. During the first half of 2012 natural gas prices reached their lowest point in the last ten years, prompting Encana to temporarily curtail and shut-in production. While prices have shown some sign of recovery over the past eighteen months, the glut of natural gas in North America is forecasted to persist well into the foreseeable future.

While the price of natural gas is beyond our control, we can control our operating costs and have a successful track record of doing so. In support of our efforts to preserve cash flow, improve profitability and spread out capital risk exposure, we successfully closed a number of joint venture agreements over the course of 2012.

These joint ventures create value for our shareholders by leveraging capital, increasing efficiencies, improving project economics, reducing risk and accelerating the development of early life resource plays. Industry partnerships also have the potential to increase North American natural gas demand. For example, our agreement with a subsidiary of Nucor Corporation supports Nucor's increased use of natural gas for its facilities such as its direct reduced iron facility currently under construction in Convent, Louisiana.

Our environmental, social and governance (ES&G) performance and sector-leading management systems played an important role in securing these joint venture agreements and were an area of particular interest for many of our prospective partners.

## Continued focus on environment, health and safety

Our heightened emphasis on profitability and efficiency has not hindered our continued focus on improving our environmental, health and safety performance. In fact, our 2012 environmental, health and safety performance was marked by some significant improvements over previous years. In terms of our environmental performance, the absolute number of spills and the volume spilled in 2012 was lower than that experienced in 2011. Moving forward, we will be working to improve our tracking systems to enable improved monitoring, reporting and management of spill costs. Furthermore, our safety performance saw total recordable injury incident frequency and lost time injury frequency decrease over last year, while motor vehicle incident frequency also continues to improve.

Our otherwise strong safety performance was marred by two tragic, fatal incidents in 2012. In response to these two fatalities, at the direction of our divisional leadership in both Canada and the United States, we launched a company-wide initiative to examine and improve how we manage early lifecycle operations at our sites.

As a result of this extensive review, the multi-disciplinary team identified fifteen areas for improvement in our early lifecycle well management. While the teams work to implement new administrative controls, we have also created six Pressure and Pipe Principles, which apply specifically to early lifecycle well operations. For more information on this important review, please see page 32.

## Developing the skills of our staff

Realizing the vast opportunities of our resource portfolio, venturing into new plays and managing changes in the pace of our development comes with a number of challenges, particularly when it comes to developing and retaining staff.

To help manage these challenges, we undertook a number of initiatives over the past year. For example, in October we held technical forums, known as The Hub, in Calgary, Denver and Plano. These events profiled multi-disciplinary efforts from across the company that led to improvements in our operations, identified opportunities for increased efficiency or profiled key strategic undertakings. These collaborative events provided an opportunity for staff from all areas of our operations to share knowledge, best practices and expertise on issues of importance to our business.

We are also moving to implement a comprehensive talent management system which will enable us to better track and evaluate the effectiveness of our various training programs and set clear career development plans for our employees. As employees grow in their roles, we will be able to identify leadership development opportunities and ensure that training reflects both operational and individual employee goals.

## Taking the next step

Delivering on and, in many cases, exceeding the targets we set at the start of 2012 demonstrates the deep pool of talent possessed by our leadership team and our staff. These achievements also reflect the management of our former Chief Executive Officer, Randy Eresman. We thank Randy for his many contributions to our company over his distinguished career. We are confident the milestones achieved under Randy's tenure will position our company for long-term success. Randy's focus on sound corporate governance and the responsible development of our significant portfolio of assets has positioned Encana well for future growth under a new leader. As we look ahead, our sharpened focus on profitability and running our business as cost-efficiently as possible will help us maximize the value of our opportunity-rich portfolio. We will continue to identify risks and opportunities throughout our business in order to streamline our operations and improve our ES&G performance.

This report outlines the crucial role that corporate responsibility plays in effectively managing risk and demonstrates how responsible development practices support sound operations. While the report is fundamentally a disclosure of our annual performance, we have expanded its scope this year to give our stakeholders a better sense of how we intend to manage our ES&G priorities moving forward. We believe that the nine overarching priorities identified in this report will support our business strategy, help mitigate risk and encourage performance improvement both in the short and long-term.



**Clayton H. Woitas** Interim President & Chief Executive Officer Encana Corporation

# Operating areas

3

5

6

10

13

15

12

11

- 1. Greater Sierra, BC
- 2. Cutbank Ridge, BC
- 3. Peace River Arch, AB
- 4. Bighorn, AB
- 5. Duvernay, AB
- 6. Clearwater, AB
- 7. Clearwater Oil, AB
- 8. Deep Panuke, NS
- 9. Utica/Collingwood, MI
- 10. Jonah, WY
- 11. DJ Niobrara, CO
- 12. Niobrara/Mancos, CO
- 13. Piceance, CO
- 14. Mississippian Lime, OK/KS
- 15. San Juan, NM
- 16. Texas, TX
- 17. Haynesville, LA/TX
- 18. Eaglebine, TX
- 19. Tuscaloosa Marine Shale, MS/LA

**RESOURCE PLAY** 

EMERGING PLAY

This graphic is for artistic illustration purposes only.

4



# Materiality



ncana Corporation has a longterm vision that uses collaboration, innovation and the expertise and knowledge of its people to achieve success. That success is dependent upon our ability to create opportunities and minimize risks. Encana's 2012 Corporate Responsibility Report illustrates how our environmental, social and governance (ES&G) priorities support this long-term vision.

The process for determining the materiality of the information included in this report is exhaustive and driven by our stakeholder engagement efforts. We take into consideration our overall competitive strategy, stakeholder feedback and broader societal expectations. We seek input on what should be included in the report by conducting stakeholder surveys, benchmarking against industry peers and engaging with investors, non-governmental organizations, regulators, employees and ES&G rating agencies.

The report is prepared using the Global Reporting Initiative G3.1 sustainability reporting guidelines, which serve as a generally accepted framework for reporting on an organization's ES&G performance. In addition, we refer to guidance from organizations such as the International Petroleum Industry Environmental Conservation Association and the Canadian Association of Petroleum Producers' Responsible Energy Program. These standards inform how we report our corporate responsibility performance. However, the specific proofs and measures we use are determined by the areas which have been identified as material to our business and our stakeholders.

Deloitte LLP (Deloitte) was engaged to provide independent assurance on selected performance indicators. For the 2012 report, assurance was focused on seeking guidance on how to improve data tracking systems and assuring air metrics. The Corporate Responsibility Report is prepared by Encana's Corporate Responsibility team, but reflects the efforts, goals and challenges of all Encana employees as we seek to capitalize on ES&G opportunities and manage ES&G risks. Expanded internal stakeholder dialogue this year helped identify key ES&G priorities and helped set the parameters of this report. Meetings were held with subject matter experts from diverse disciplines across Encana, including eight vice-presidents from corporate and divisional teams. These included representatives from Stakeholder Relations, Community Engagement, Environment, Human Resources, Corporate Legal Services and Corporate Secretary, Government Relations and Financial Compliance and Audit. Each person was chosen based on their responsibility for ES&G activities and accountabilities. Information was gathered on the risks, opportunities and priorities for each of these disciplines.



From these meetings we identified nine common priority areas:

- Maintain strong governance throughout the organization;
- Access land and maintain our social license to operate;
- Capital focus on liquids and oil development;
- Manage resources in a low-price environment;
- Develop the skills and leaders to support our operations now and in the long term;
- Continually improve our culture of safety at work, on the road and at home;
- Manage regulatory risk;
- Manage our air and greenhouse gas emissions; and
- Maintain a comprehensive approach to water management.

These nine priorities comprise the chapters of this report. This report demonstrates that Encana's ES&G risks are also opportunities and comprehensive efforts to manage risks and capitalize on these opportunities contribute to operational success. The report endeavors to communicate how we plan to use corporate responsibility programs and initiatives to meet our future operational goals.

# Accomplishments and priorities

# **2012 Accomplishments**

**CONDUCTED** a third-party review of the Ethos Audit Program against ISO 19011 standards and industry best practices to support the integrity of our audit systems.

**PERFORMED** a comprehensive review of our pipeline integrity and spill prevention, management and response.

**IDENTIFIED** new or modified practices to improve the safety of operations associated with well operations early in their lifecycles.

**CONTINUED** to focus on improving the environmental efficiency of our operations and reducing our emissions intensity through our Environmental Innovation Fund. Projects included vent gas capture systems at compressor stations, a portable flare unit and instrument gas to air conversion programs. **FULLY IMPLEMENTED** our Responsible Products Program. This risk-based tool allows us to carefully assess the hydraulic fracturing fluid additives we use for the potential to impact human health or the environment using generally accepted toxicological criteria.

**PARTNERED** with industry peers and regulators in Alberta and Colorado to assess local water resources in an effort to better understand and evaluate regional water sources.

**COMPLETED** a project to map our current water tracking and reporting processes across our operations to further refine our internal systems for tracking and reporting water use.

**DEVELOPED** a Business Code of Conduct, which includes updated direction on corporate policies including ethical business conduct, conflict of interest, prevention of fraud, competition and antitrust, lobbying, prevention of corruption and privacy.

**DEVELOPED** a Community Impact Assessment Tool to provide a standardized approach to evaluating social and community risks which can sometimes accompany new or changing development programs.

# **2013 Priorities**

**CONTINUED** focus on strong corporate governance, and on becoming one of the most profitable natural gas producers in North America.

**MEASURE**, report and improve our air and greenhouse gas emissions performance, and forecast how policy and carbon price changes could affect Encana's future operations in order to support appropriate risk management, strategic responses and company policy.

**IMPLEMENT** our Community Impact Assessment tool and refine as necessary.

**DEVELOP** tools to measure and evaluate the effectiveness of our community investment programs. **DEVELOP** a comprehensive health surveillance protocol to determine consistent standards of care for employees who are exposed to workplace hazards and integrate workplace hazard training into our talent management system.

**LEVERAGE** opportunities to increase the visibility, utility and availability of natural gas within our own operations and the North American transportation and energy infrastructure.

**FOCUS** on our workforce planning process, including the implementation of Talent Hub, in order to manage the risks associated with the retirement of experienced staff, while proactively identifying emerging leaders for development and succession planning.

**DELIVER** training and communications on our Business Code of Conduct and related policies in order to reinforce the understanding and enforceability of our corporate policies to all staff.

# Financial and operating performance Year-end highlights

cash flow of approximately



# Financial highlights<sup>(1)</sup>

(US\$ millions, except per share amounts)	2012	2011
Revenues, Net of Royalties	5,160	8,467
Cash Flow <sup>(2)</sup>	3,537	4,216
Per Share – Diluted	4.80	5.72
Net Earnings	(2,794)	5
Per Share – Diluted	(3.79)	0.01
Operating Earnings <sup>(2)</sup>	997	1,191
Per Share – Diluted	1.35	1.62
Total Capital Investment	3,476	4,610
Net Acquisition and Divestiture Activity	(3,664)	(1,565)
Net Capital Investment	(188)	3,045
Dividends Per Common Share	0.80	0.80
Dividend Yield (%) <sup>(3)</sup>	4.0	4.3
Debt to Adjusted Capitalization (%) <sup>(2)</sup>	37	33
Debt to Adjusted EBITDA (times) <sup>(2)</sup>	2.0	1.9

(1) Reported daing interformation proportion proportion of the Advisories and Terms on page 49.
 (3) Based on NYSE closing price at year-end.

# oil and NGLs production of

# **31**,0000

## Operational highlights

After Royalties	2012	2011
Production		
Natural Gas (MMcf/d) Canada USA	1,359 1,622	1,454 1,879
Total Natural Gas (MMcf/d) Oil & NGLs (Mbbls/d)	2,981	3,333
Canada	19.4	14.5
USA	11.6	9.5
Total Oil & NGLs (Mbbls/d)	31.0	24.0

total natural gas production of



# Maintain strong governance throughout the organization

aintaining sound governance throughout our operations – whether through the development of effective corporate policies and practices or adherence to Ethos, our environment, health and safety (EH&S) management system – is critical to executing our business strategy.

Strong governance enables us to comply with and often exceed applicable federal, state and provincial regulations and laws. It also promotes accountability and transparency throughout our operations and supports the confidence of our investors, joint venture partners and staff. We continue to refine and evolve our governance model to respond to shifting regulatory and societal expectations. Over the past year, we have worked to refine our governance systems and plan to further evaluate and improve those systems in 2013.

A recognized leader in corporate governance, Encana has been ranked among the world's most ethical large companies by the Ethisphere Institute for the third year in a row. The Ethisphere Institute is dedicated to the advancement of best practices in business ethics, corporate social responsibility, anticorruption and sustainability.

# Facilitating the transition to a new Chief Executive Officer

With the announced retirement of Randy Eresmen as President & Chief Executive Officer (CEO) in January 2013, the Board of Directors has initiated a search for Encana's next President & CEO. Our Board is committed to identifying the ideal person to lead Encana moving forward. In the meantime, Board member Clayton H. Woitas, Interim President & CEO, continues to steward the company and maintain the operational momentum we generated over the course of 2012. The Board has also endorsed a plan for Board Chairman Mr. David P. O'Brien. O.C. to continue in his current role and step down as Chairman after a new President & CEO is firmly in place. At that time, Clayton Woitas will move into the Chairman's role.



The operational transition to more balanced sources of cash flow generation that we began through 2012 is progressing well. The company's extensive resource base and depth of operational knowledge, combined with its financial strength, has Encana well positioned for future success.

In striving to be the most efficient and profitable developer of natural gas in North America, focused on capital discipline and driving down costs, Encana is well positioned for future success. Our sharpened focus on operating our business as cost-effectively as possible and increased emphasis on developing our oil and liquids assets will lay a solid foundation for long-term success and profitability. We are confident that our next President & CEO will continue to develop a solid foundation for long-term success, profitability and environmental, social and governance excellence.

## **Results of independent investigation**

In June 2012, Encana's independent Directors authorized Chairman Mr. David P. O'Brien, O.C. to oversee an investigation into allegations of collusion with competitors regarding land leasing in Michigan in 2010. External legal counsel were retained in both the United States and Canada to assist in undertaking a thorough investigation, which was conducted independent of Encana's management.

Based on the results of the investigation, the Board has concluded that Encana and its employees did not engage in such conduct. Encana has been served with a subpoena from the Antitrust Division of the United States Department of Justice and a civil investigatory demand from the Michigan Attorney General and is cooperating fully with the investigations of both bodies. Although Encana's investigation found no evidence of wrongdoing, it is possible that the company may become a defendant or otherwise involved in potential legal actions, including class actions, in connection with matters relating to the allegations. While Encana's Board is satisfied with the conclusion reached, Encana is mindful that the public nature of these allegations has been distracting and may have impacted Encana's reputation. We trust that the conclusion reached by the Board has helped assure our stakeholders of Encana's continued commitment at all levels to legal and ethical conduct in all that we do.

## Supporting audit efficiency and effectiveness

Supporting the effectiveness of Ethos is critically important in maintaining the integrity of our business and encouraging continuous improvement of our processes and operations. In addition to conducting four annual corporate audits based on Ethos, multiple internal checks and balances exist to support our operations in ensuring compliance. In fact, over the course of 2012, we conducted approximately 5,500 EH&S reviews and inspections. These efforts are designed to ensure conformance with our Ethos standards and support compliance with specific regulatory requirements in the jurisdictions in which we operate.

To support the integrity of our audit systems, a third-party review of the Ethos Audit Program was conducted in 2012. The review, carried out by Deloitte, assessed the design of the Ethos Audit Program against International Organization for Standardization ISO 19011 criteria and industry best practices. The results of Deloitte's review were encouraging. The Ethos Audit Program was found to be in strong alignment with ISO 19011 and there was a high degree of management commitment from within our business units, which was attributed to the transparency of the Program. While no material gaps were identified, Deloitte did make several recommendations to strengthen our Audit Program moving forward. Many of these recommendations have already been planned and implemented - the most significant of which is transitioning the focus of the Ethos Audit Program from management system design to management system implementation.

## Maintaining a sound business conduct and ethics framework

While we remain confident that our governance framework and policies and practices position us as a leader in business ethics and governance, we recognize that there is always room for improvement. As a result, a review of our governance framework and the policies, practices and guidance documents we use to communicate ethical business expectations and obligations was undertaken in 2012. The results of this review suggested that our governance framework could be simplified to improve its effectiveness and provide more clarity to employees.

To achieve the above, we developed a Business Code of Conduct which replaced our existing Business Conduct & Ethics Practice. The expanded scope of the Business Code of Conduct provides overarching business conduct and ethics direction across the organization. The Code includes direction on ethical business conduct, conflict of interest, prevention of fraud, competition and antitrust, lobbying, prevention of corruption and privacy, among others. A number of new or revised policies were also created including the Prevention of Corruption Policy, which provides guidance to employees, contractors and directors on the requirements of anti-bribery and prevention of corruption of foreign public officials legislation. The Business Code of Conduct and other revisions to Encana's corporate governance framework were formally endorsed by the Board of Directors in February 2013. The goal of the project was to improve our governance framework and the associated training programs and resources. With that work now underway, it is expected that these efforts will ultimately improve the ability of staff to understand and comply with Encana's expectations. The project also provided an opportunity for the Board of Directors and senior management to visibly and proactively reaffirm Encana's commitment to ethical business conduct and reinforce expectations regarding appropriate business conduct.

Moving forward, training and communications are being developed and delivered to staff. All staff will be

expected to understand the Business Code of Conduct and sign off on their commitment to adhere to the Code and its related policies and practices as part of our policy re-commitment process. Depending on their role, staff engaged in the activities specifically covered by the Business Code of Conduct will be required to participate in more detailed training programs tailored to support their compliance given their roles and responsibilities. By ensuring that our business conduct and ethics framework is simple, easy to understand and widely integrated, we are able to mitigate legal, operational and reputational risks and ensure compliance with Encana's policies and practices.

## Governance

	2010	2011	2012
Integrity Hotline contacts	93	120	64
Concerns	47	80	58
Requests for information	46	40	6
New Business Conduct investigations	49	35	28
Total incidents of violations involving rights of indigenous people	0	0	0
Percentage of business units analyzed for risk related to corruption	100	100	100
Percentage of employees who have signed off and are training on	100	100	100
Encana's dusiness Conduct and Ethics Practice	100	100	100
Monetary value of significant fines and total non-monetary sanction			
for non-compliance with laws and regulations	0	0	\$146,870 <sup>(1)</sup>
Environmental fines <sup>(2)</sup>	\$205,263	\$54,680	\$46,971 <sup>(3)</sup>

(1) In 2012, Encana was assessed an administrative penalty by Worksafe BC. The penalty is currently under appeal by Enca

(1) If 2012, Elicative data assessed an administrative periatry by volksate BC. High periatry is contently under appear by Endertal.
 (2) The amount reported for environmental fines reflects the amount paid in the year indicated, and may include fines levied for allegations in previous years. Each area where we operate presents distinct environmental challenges and we are constantly learning and defining how we incorporate environmental considerations into our operations. Encana began enhancing its compliance programs in 2009 and we are beginning to see an increase in compliance rates.
 (3) In the United States, most federal actions against businesses or individuals for alleged failure to comply with environmental laws are resolved through settlement agreements. As part of a settlement, an alleged violator may voluntarily agree to undertake an environmentally beneficial project related to the violation in exchange for mitigation of the penalty to be paid. Supplemental Environmental Projects (SEPs) further the federal and state agencies' goal of protecting and enhancing public health and the environment. Encana paid \$166,880 towards SEPs in 2012. The indicator shows only the portion of the settlement agreement that may be considered an environmental fine.

# Access land and maintain our social license to operate

ur ability to access land is dependent not just on licensing and regulatory requirements, but on support from communities in the areas where we operate – often referred to as our "social license to operate". Effectively addressing stakeholder concerns related to our operations, ensuring economic and social benefits are shared locally and building community dialogue all play significant roles in maintaining that license. Our responsibility to landowners and stakeholders begins when we acquire surface land for exploration and continues until the land has been reclaimed. In order to create long-term success, we look to create long-term partnerships.

While no one-size-fits-all-approach is used in all of our operating areas, we carefully consider the social impacts of development for each region. As the pace of development changes within our operations, effectively engaging local communities, including Aboriginal groups, remains important. In most of the areas we operate, development occurs over the course of a number of years. Although we develop long-term development plans for each area, those plans often evolve as our understanding of the play increases and we respond to market conditions and stakeholder input. Keeping our stakeholders informed and engaged in our development plans builds community awareness and support and helps facilitate our continued access to land.



# Partnering with joint venture partners in our operating communities

Joint venture relationships help us unlock the value contained in our asset base and can generate employment and investment in the communities where these operations are located. Choosing partners who share our belief that environmental, social and governance factors contribute to long-term value for our shareholders is important.

Each joint venture agreement we enter into requires careful consideration of community impacts, both as it relates to the pace of development and the presence of new members of the business community. Informing local stakeholders about these agreements, who our partners are and how these agreements will impact the community are important in maintaining stakeholder trust. Over the course of 2012, in order to provide stakeholders with a better understanding of how our joint venture agreements will impact them, we facilitated the introduction of joint venture partners to some of our operating communities.

A subsidiary of Mitsubishi Corporation, our partner in the Cutbank Ridge Partnership, was formally introduced to local leaders as a community partner in Dawson Creek, British Columbia at the 2012 Dawson Creek Energy Conference. At the announcement of Encana's renewed five-year sponsorship of the Encana Events Centre in Dawson Creek, we introduced executives from Mitsubishi Canada Ltd. to local community and government leaders. Mitsubishi was also acknowledged for its shared financial support of the Encana Events Centre sponsorship. Meanwhile, in southern Alberta, we held community tours and introductions between key community stakeholders and representatives of the subsidiary of Toyota Tsusho Corporation. Multiple tours of our operations in both regions were also conducted with representatives from our joint venture partners in order to help them fully understand our unique approaches to resource development in these areas.

By effectively communicating about our joint venture partners in our operating areas, we can help our stakeholders understand how these agreements may affect them. Although not every joint venture relationship requires this same approach, ensuring that we keep stakeholders up-to-date on our business strategy helps to support our license to operate over the long-term.

## **Developing a Community Impact Assessment Tool**

Failing to identify community impacts within our operations can create significant regulatory and social pressure. Identifying, assessing and managing community risk early on in our development planning process creates opportunities to improve our engagement with key stakeholders and reinforces our social license to operate.

In 2012, we developed a Community Impact Assessment Tool to help us take a comprehensive look at the social and community risks that can sometimes accompany new or changing development programs. Community relations, corporate responsibility and surface land professionals from both of our operating divisions developed a methodology to identify and quantify the risks associated with commonlycited community concerns, identify existing controls and suggest mitigation strategies. Internal discussions regarding mitigation strategies and collaboration among members of our various development teams will further enhance the effectiveness of this tool moving forward.

By evaluating the unique community needs in each of our operating areas we are able to better manage and anticipate community concerns based on specific developments. Using the tool not only enables us to proactively evaluate community impacts, it also directly supports our engagement efforts with key stakeholders.

# Realigning of our community investment priorities with our business strategy

We continuously assess community concerns from a social and economic standpoint and evaluate our community investments to support community need and align with our business priorities. In 2012, we revised our community investment program to focus on three areas: environment, education and community life. Our intent is to not only maximize our return on these important investments as it relates to access to land and community support, but to proactively respond to community need – needs which often vary across our operating areas.

These new priority areas are designed to provide the greatest strategic relevance for Encana. For example, we have made investments which expand market share for natural gas, directly strengthen brand awareness and community support and align with our employee recruitment and retention efforts.

While we remain committed to contributing to communities in our operating areas, in the face of challenging commodity prices we will focus our most significant community investments in areas that support our operational priorities. We will also look to measure the effectiveness of our community investment programs by requiring grantees to provide information on Encana's return on investment, including recognition and the community benefits of the program.

## Supporting economic capacity within Aboriginal communities

Effectively engaging with Aboriginal communities is of paramount importance in supporting our license to operate and accessing land. As land users, business owners and staff, members of Aboriginal communities play important roles in informing how we operate and supporting the success of our operations. In 2012, our Aboriginal engagement efforts were focused largely on economic development, education and training. This work is consistent with our broader efforts to build capacity in our operating communities and to effectively engage with Aboriginal communities, recognizing their unique needs.

In 2012, Encana and Eh Cho Dene Enterprises, a Fort Nelson First Nation owned and operated company, continued to build upon a long and mutually-beneficial business relationship. Eh Cho Dene Enterprises has been active in providing service to the construction of the Cabin Gas Plant, road maintenance for our operations team and has undertaken road and lease construction for our drilling, completions and construction groups in the Fort Nelson area. These efforts have generated significant business success for Eh Cho Dene Enterprises, with 2012 earnings of well over \$14 million. In addition, two 4th Class Power Engineering students from



the local post-secondary institution in northern British Columbia, Northern Lights College, were hired by Eh Cho Dene Enterprises. Funding for the Northern Lights program is provided via a partnership between Northeast Aboriginal Skills and Employment Program, Spectra Energy, Encana and Northern Lights College.

In further support of these economic development efforts, we continue to sponsor the Ch'nook Aboriginal Business Education program, offered through the University of British Columbia. Since the program's inception, the Aboriginal Certificate in Management program has produced 85 graduates, with five students from our operating communities in northeastern British Columbia receiving sponsorship to attend.

These business relationships support an educated, engaged and financially successful Aboriginal workforce. As we move forward in 2013 and beyond, we will continue to engage with Aboriginal communities to facilitate timely access to land while seeking opportunities to contribute to the economic capacity of those communities.

## Refining our Courtesy Matters<sup>®</sup> program

Our Courtesy Matters program continues to play a critical role in supporting our license to operate and engaging stakeholders. In 2012, we incorporated a Courtesy Matters education section into our General Safety Orientation for Service Providers in Canada. This orientation, which was converted from on-site to electronic delivery in 2013, is required for staff from the 1,868 service providers that will be on an Encana site. With the online section, we can identify which service providers have accessed our Courtesy Matters material and identify specific individuals within those companies who have completed the orientation. Since the start of 2013, we have engaged approximately 6,367 individuals from 706 separate organizations.

Personal engagements, wherein we have had personal interactions with staff and service providers, also play an important role in reinforcing our Courtesy Matters program in our operating areas. Over the course of 2012, Encana staff conducted Courtesy Matters presentations for 932 workers from 111 organizations in our Canadian Division. These meetings were usually specific to a project or discipline, such as pipeline and facility construction projects, completions operations, summer student orientations and new employee training. Since 2010, we've presented the program to over 3,600 people.

The Courtesy Matters program was an important link to our operating communities over the course of the year. On average, we received roughly 30 emails or phone calls to our Courtesy Matters Hotline from community members on a monthly basis. This correspondence was related to localized issues such as dust, noise and traffic. Two formalized community-based Courtesy Matters Advisory Committees are also in place within our Canadian operations - one in the Dawson Creek region while the other includes Encana's Chinook and Wheatland operating areas. These committees convene on an as-needed basis (typically quarterly) and include members of the community, service providers and municipal representatives. The meetings allow us to review our program performance, identify emerging issues and potential mitigation strategies and share information on our development activities in the area.

Community Involvement <sup>(1)</sup>			
	2010	2011	2012
Environment	\$2,207,486	\$5,756,228	\$2,600,495
Education	\$6,139,863	\$3,401,778	\$3,491,981
Community Life	\$3,744,287	\$3,088,527	\$5,748,782
Family & Community Wellness	\$2,181,786	\$4,182,040	N/A
Sport & Recreation	\$1,447,315	\$1,441,237	N/A
Total	\$15,720,737	\$17,869,811	\$11,841,259

(1) Encana's focus areas for Community Investment in 2012 included Environment, Education and Community Life. Our Community Investment budget is directly related to cash flow. In 2012, we worked to ensure new investments aligned with business strategy and our long-term partnerships continued to deliver maximum mutual benefit.

## Aboriginal Engagement

	2010	2011	2012
Procurement from Aboriginal suppliers <sup>(1)</sup>	\$16,850,000	\$30,800,000	\$30,900,000 <sup>(2)</sup>

(1) Procurement spend is rounded to the nearest \$10,000. (2) The extraordinary spend in Aboriginal procurement in 2011 and 2012 is directly related to the contracts awarded for services as a result of construction of the Cabin Gas Plant.

# Capital focus on liquids and oil development



s we focus on heightened profitability and the development of oil and natural gas liquids, it is crucial that we adequately identify and manage environmental, social and governance (ES&G) risks and opportunities. While our core business remains the same, the risk profile associated with oil and natural gas liquids development is unique in a number of areas. For example, based on the resource composition, the emission intensity may increase and the potential impacts of an oil or natural gas liquids spill are more complex. The transition also involves accelerating the pace of development in some of our emerging plays, which brings with it increased ES&G risk. Increasing production requires us to maintain – and in some cases advance - industry-leading best practices in safety, environmental stewardship and community engagement.

Over the past year, we have taken a number of steps to identify the risks and opportunities inherent in liquids and oil development. Moving forward we continue to identify areas for potential improvement in our operations and work to mitigate challenges.

# Understanding and assessing our impacts

Understanding the environmental impacts of oil and natural gas liquids development and assessing how those impacts differ from natural gas development supports effective and efficient decision making during the planning process. In understanding our environmental footprint, we are better able to prioritize our mitigation strategies. In our USA Division, we use a process to identify and evaluate the beneficial and adverse impacts our operations can potentially have on the environment and communities where we operate. This process is called an Aspects and Impacts (A&I) Procedure. Beyond a conventional review of our regulatory compliance, this A&I Procedure effectively summarizes our environmental footprint and enables Encana to prioritize and focus resources on the most significant environmental impacts. This process, which was first utilized by Encana in 2009, was revised and enhanced in 2012.

Each business unit within our USA Division applies the process to its operations, including new ventures. With increased focus on liquid plays, we are using this process to evaluate differences in potential environmental and community impacts presented by oil and natural gas liquids exploration and production compared with those typically associated with natural gas activities.

Through this process, we have identified 24 areas which are assessed early on when entering an operating area to help manage, understand and mitigate our impacts. These areas include potential impacts such as noise vibration, visual changes, increases in wastewater generated, air emissions and dust issues. Once each potential impact is assessed, we are able to deploy resources and fit-for-purpose strategies to manage impacts deemed to be high priority. For example, our Mid-Continent Business Unit has found that a liquids resource play can have different impacts than a natural gas play in areas such as air emissions, materials handling



and spills. This information is used to develop specific objectives and targets that are uniquely tailored and appropriate for the business unit and type of resource play.

## Managing spills and pipeline integrity

We have always maintained a robust pipeline integrity program, allowing us to monitor our pipeline infrastructure. An annual risk assessment, based on Encana's EH&S Risk Matrix, is completed on all operating pipelines. This annual assessment uses a customized approach and considers the effects of internal and external corrosion, construction practices, weather and other outside forces. To support our increased focus on liquids development, we have performed a comprehensive review of our pipeline integrity and our spill prevention, management and response as they relate to pipeline management.

This review was particularly comprehensive. As part of the review process, we conducted aerial right-of-way surveys and geotechnical assessments of all pipeline water crossings. In addition to reviewing the condition of existing pipelines, we undertook a variety of initiatives to support pipeline damage prevention, integrity management and spill response.

For example, in an effort to consolidate information specific to our integrity management program, an information hub was created to house forms and tools for maintaining pipeline assets, including mitigation and inspection methods, regulatory requirements and Encana procedures. A formal program consolidating and documenting our existing practices and procedures related to damage prevention was also established. The program includes processes specific to public awareness, risk assessment, mitigation, surveillance and ground disturbance. As part of our refined program, we are developing riskbased training and awareness programs to improve our mitigation and response to spills. This includes identifying sites with greater potential for liquid spills and control points, developing area-specific training, working with business units to develop specific mitigation plans and refining local spill response resources.

The development of training and resources complete with identification of high risk points and mitigation strategies will continue in 2013 with specific training for staff to follow.

# Managing community expectations and the changing pace of development

As we continue to carry out our development plans and commit capital in areas with the greatest returns on investment, the pace of our development changes. Some communities are exposed to greater activity, while others are experiencing industry activity for the first time. In certain communities, changes in commodity prices and capital allocation may mean slowing or stopping development. Engaging and educating local stakeholders about these changes is critical in maintaining our social license to operate in some areas and building it anew in others.

As the pace of development increased in certain areas over the past year, we worked to identify in advance key risks that could impede land access and community acceptance for a given area (see more on our Community Impact Assessment on page 17). These risks could include financial factors, social issues or environmental concerns. With these risks identified, we were then able to estimate the likelihood of a given risk materializing and consider our options for managing that potential risk. In Dawson Creek, British Columbia, where we expect activity to increase significantly over the next few years, we developed preferred routing for



trucks, implemented noise mitigation and continued our efforts to develop an upstream water treatment facility. The facility, called the Farmington Water Resource Hub, will be a source of produced and non-potable source water for our hydraulic fracturing operations. These efforts were driven by the need to improve our operational efficiency and ensure continued access to water resources while addressing the concerns of local stakeholders.

In Colorado's DJ Basin, where limited acreage, prolific production and urban growth converge to create unique challenges and opportunities, our Courtesy Matters program played a significant role in helping us manage community concerns in 2012. In the midst of a charged debate over hydraulic fracturing, our DJ Basin team was among the first operators in the United States to complete a Memorandum of Understanding with a municipality. The agreement outlined in detail our commitment to:

- consider our surroundings and maximize setbacks wherever feasible;
- notify our neighbors in advance of planned activity;
- share our location plans;
- share our mitigation plans;
- participate in FracFocus' fluid disclosure initiative; and
- uphold our Responsible Products Program.

As we move toward a robust horizontal drilling program in the DJ Basin, maintaining the principles of Courtesy Matters is paramount. Reaching similar operator-committed practice agreements, continued Courtesy Matters and stakeholder communications training and the use of automated telephone notification systems and town halls will support our community engagement efforts in the area. Innovative engineering and fundamental changes to how we approach our work in urban areas will set us apart from our DJ Basin peers.

With our continued emphasis on capital discipline and focusing our investments in the most profitable resource plays, we plan to continue this comprehensive engagement strategy. In order to build community support in advance of our developments, we continue to work toward proactive community and municipal outreach and strive to provide detailed, meaningful information to stakeholders throughout the development process.



(1)The decline in spill volumes is attributed in part to our ongoing training and awareness efforts to improve our performance as it relates to spill management.

# Manage resources in a low-price environment

Which is the continued low natural gas prices, we are working to efficiently and effectively manage our resources without impacting our ability to deliver on our business objectives or our environmental, social and governance priorities. Significant progress was made in 2012 in improving our capital efficiency and access to resources through joint venture agreements and investment in environmental efficiency projects. Our main partners are world-class companies and their investments in Encana are a testament to our reputation as a world class energy producer.

We have pioneered a number of technological advancements through the resource play hub model. These technological advances have improved our cost structures and helped mitigate our environmental impacts. We continue to look for opportunities to create environmental and operating efficiencies and direct resources toward the most effective programs.

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# Pairing operational efficiency with environmental benefit

Managing resources in a low-price environment without sacrificing our environmental performance is important in managing regulatory, operational and reputational risks and creating opportunities to meaningfully improve the way we operate.

To support these environmental and cost efficiencies, in 2012 we launched a revised Environmental Viewer in our USA Division. This geographic information system (GIS) project was designed to assist our business units in new development planning, ensuring regulatory compliance and supporting operational needs. The Environmental Viewer is now fully functioning across our USA Division and can be used to interact with spatial information on natural resources such as wildlife, wetlands, weeds, water, soil and

archeological areas. The Environmental Viewer process provides cross-disciplinary data sharing regarding what surveys have been conducted for a field, what resources were documented and what challenges need to be taken into consideration during development planning. By consolidating this information in one system, we are reducing duplication of efforts, allowing for comprehensive development decisions and facilitating cross-disciplinary collaboration. This streamlined approach not only supports sound decision making and reduces environmental risk, it also significantly reduces the costs of planning and data procurement. Our Canadian Division also uses GIS as an integral part of the development planning process.

We continue to invest in energy efficiency and emission reduction projects through our Environmental Innovation Fund, a dedicated annual capital budget providing for investments in projects that economically improve the environmental performance of the natural gas sector by developing and implementing innovative technology. In Alberta, we have invested approximately C\$1.2 million to date to complete instrument gas to air conversion projects at six older gas processing and compression facilities. These conversions help to improve efficiencies and reduce greenhouse gas emissions from pneumatic instrumentation and other devices. Five of these conversion projects were successfully commissioned in 2012 and we expect to save approximately 55 million cubic feet of natural gas per year while reducing greenhouse gas emissions by more than 20,000 tonnes of carbon dioxide equivalent annually. We also successfully verified and registered the first ever carbon offsets from instrument gas to air conversion projects in Alberta and in doing so increased the value of each unit of gas saved at these facilities by more than \$5 per thousand cubic feet.



The innovative use of carbon offsets reflects our commitment to investing in projects that reduce greenhouse gas emissions beyond our current regulatory requirements while maintaining our focus on profitability. Additional instrument gas to air conversion projects are underway to retrofit another three facilities in 2013 and to pilot a new remote instrument air system developed by Encana engineers, which can be operated at sites that lack access to grid electricity.

These types of environmental and operational synergies help improve our environmental performance while creating significant operational and cost efficiencies outcomes that support our goal of becoming the most efficient and profitable natural gas developer in North America.

## Encouraging natural gas use to create long-term certainty

Advocating for, and implementing the use of, natural gas as a more economic fuel source continues to play a major role in supporting our low-cost focus. The increased use of natural gas as a fuel source within our operations has multiple benefits. It improves our environmental and financial performance and demonstrates the competitive benefits of natural gas to other companies and potential customers ultimately leading to increased, long-term commercial opportunities.

In 2012, we announced the commissioning of our Cavalier liquefied natural gas (LNG) facility located approximately 15 kilometers (9 miles) east of Strathmore, Alberta. The Cavalier facility will play a key role in providing an alternative fuel to diesel for heavy-duty transportation, including rail and long-haul trucking. The project provides necessary infrastructure to support natural gas use in transportation. The facility receives its feedstock from our neighbouring gas plant, and will provide LNG to Calgary-based Ferus Inc. and Canadian National Railway Company, which is now piloting mainline dieselelectric locomotives fueled principally by natural gas.

In Louisiana, we opened our first public LNG station. The station is currently used by Heckmann Water Resources, our partner who, in 2011, ordered 200 big-rig trucks that use LNG as a fuel source. We also recently secured a contract with Pivotal LNG, a subsidiary of AGL Resources Inc., which owns and operates a major liquefaction facility. This contract enables us to provide LNG to consumers and will create further opportunities for natural gas in the transportation sector.

In addition to looking for opportunities to develop critical infrastructure and commercial partnerships, we are leading by example and converting many of our vehicle fleets and drilling rigs to run on natural gas. As of January 2013,

Environmental Innovation Fund <sup>(1) (2) (3) (4)</sup>					
	2010	2011	2012		
Internal rate of return (%)	33	90	72		
Cumulative CO2e avoided (tonnes)	397,790	630,000	900,000		
Cumulative natural gas conserved (Bcf)	3.40	5.23	6.81		
Capital	\$11,810,000	\$12,240,000	\$11,500,000		

Internal rate of return is pre-tax, non-royalty, non-depreciated.
 CO<sub>2</sub>e avoided includes results from projects completed in previous years that have ongoing emissions reductions. Figures for 2011 and 2012 are rounded to the nearest 10,000 tonnes.
 Gas conserved includes results from projects completed in previous years that have ongoing gas savings.



approximately 28 percent of our nearly 1,300 fleet vehicles were capable of using natural gas as fuel – an increase from 15 percent at the same time in 2012. In support of our efforts to further improve efficiencies within our operations, 22 of our 39 drilling rigs are also capable of using natural gas as a fuel source. In 2012, as a direct result of these holistic efforts, we saved approximately \$16 million in fuel costs by using natural gas instead of diesel.

These types of initiatives help establish critical infrastructure to support the viability of natural gas as a fuel source, reduce our operating costs and generate potential new sources of revenue. In 2013 we will continue to leverage these opportunities to increase the visibility, utility and availability of natural gas in the North American transportation and energy infrastructure.

## Heightening emphasis on profitability

Moving forward, we have three priorities. The first is to ensure that our business is sustainable in the current low natural gas price environment. Secondly, we will focus on maintaining financial strength and flexibility. Third, we will continue in our pursuit to be among the lowest cost producers of natural gas in North America. We were also able to realize tremendous success in 2012 through joint ventures and other third-party agreements. This same approach will remain a key component of our strategy moving forward, while maintaining and improving strong governance and responsible development practices.

While we continue to pursue these priorities, we also understand that our environmental, safety and social programs play a critical role in supporting our license to operate, creating opportunities to improve our overall competitiveness and mitigating a variety of risks.

Our plan is to proceed at a measured pace and capital discipline is critical. In this environment of low natural gas prices, we have to achieve optimal results to make Encana more efficient and profitable.

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# Develop the skills and leaders to support our operations now and in the long term



Delivering on our operational and environmental, social and governance (ES&G) objectives requires talented staff and leadership. Leveraging the knowledge and collaboration of our people is crucial to our success. Our greatest assets are our people and their diverse skill sets. By ensuring staff are engaged and challenged, even in difficult market conditions, we are able to retain the best and brightest in order to deliver on our business objectives.

In 2013, we look to improve and refine our talent management process and deliver the appropriate training to support our business strategy. We are continuing our efforts to ensure we are developing a talented and capable staff in order to position ourselves for long-term success.

# Encouraging cross-border collaboration and knowledge-sharing

Effectively communicating and sharing learnings among business units and between operating divisions helps create efficiencies in a variety of areas and encourages the development of our employees. By encouraging the sharing of best practices, we are able to equip our employees with the skills and knowledge necessary to support our low-cost, innovative approach to resource development. To encourage these ongoing, company-wide efforts we initiated a number of programs over the course of 2012.

In October we held internal technical forums, known as The Hub, in Calgary, Denver and Plano. These events profiled cross-disciplinary, cross-border efforts from across the company that led to improvements in our operations, identified opportunities for increased efficiency or profiled key strategic undertakings. These events provided an excellent opportunity for staff from disparate regions across our operations to share knowledge, best practices and expertise on issues of significant importance to our business. Topics discussed included well design and completions for liquids-rich plays, balancing our need for water with our social license to operate and liquids play evaluation methodology. The events also encouraged relationship building between business units that might otherwise rarely interact and resulted in presentations on strategy related to these important issues.

These events were preceded by the release of a cross-border social collaboration tool, known as myHub. This online platform is focused on streamlining daily tasks and enabling enhanced knowledge management and knowledge sharing within and between Encana's various business groups. Ultimately, the goal is to allow for greater collaboration among team members, regardless of geographic or operational boundaries, and accelerate the pace of developments moving forward.

Facilitating and promoting these types of opportunities for collaboration played a critical role in our operations in 2012 and continue to be a priority as we advance our business strategy in 2013 and beyond.

# Improving leadership capacity and talent management

Professional and personal development at Encana reflects our business strategy as well as the company's culture. Ensuring that leaders are proactively identified and developed throughout all areas of our operations helps to support the immediate execution of our business strategy and ensures a strong pool of staff from which we can draw from in the future.

In our 2011 employee engagement survey many of our employees identified personal and professional development as critical areas. As a result, an extensive research initiative was conducted in 2012 that identified four Leadership Capabilities for all employees, regardless of their role, which were deemed as critical to the company's current and future success:

- Change and Innovation
- Communication
- Teamwork
- Execution Excellence

Because leadership is not limited to formal titles but reflects an approach that people take to their work, we plan to use the Leadership Capabilities in all talent management processes and have integrated them into recruitment, career planning, performance management, succession planning and employee development.

In support of our efforts to source, attract, select, train, develop, retain, promote and transition staff, we have also begun to introduce a new, centralized talent management system. This system, which was deployed in early 2013, effectively enables the company to improve our efficiency in regards to organizational reporting, analytics and audit compliance. This new system, referred to as the Talent Hub, replaces a number of existing and duplicate systems which had been running independently. The Talent Hub will grow over time to support performance evaluation, career development, succession planning and compensation.

With this comprehensive system in place, we are better able to provide adequate resources to employees in terms of career progression and better identify areas for further training. Encana's Talent Hub will improve our ability to identify, plan, access and track employee career development and directly supports our succession planning process. The system also supports our ability to execute on our business strategy, reduces the administrative burden of training and development and sets a clear path forward for Encana's future leaders.



# Managing impending retirements and workforce risk

With approximately 30 percent of our employees eligible for retirement in the next five years, effective workforce planning and development is crucial in ensuring the continuity and effectiveness of our senior staff and leadership. Effectively transferring the critical knowledge and know-how of our experienced workforce to the next generation supports our ability to execute on our business strategy. If we are unable to facilitate that process smoothly, our competitive advantage is at risk.

In order to mitigate the risks associated with impending retirements and retain and recruit the talented staff needed to support our operations now and in the long-term, we use a multi-faceted approach involving proactive workforce forecasting, comprehensive employee development programs and regular employee surveys to assess employee engagement and enablement.

Our annual workforce planning process accounts for potential vacancies and anticipated changes in staffing requirements throughout the business. The workforce planning process encourages the organization to make deliberate decisions regarding staffing requirements in order to meet business objectives and identifies key performers throughout all areas of our operations. The process also helps to forecast areas of future growth and enables resources to be allocated based on need.

In order to fill the gaps created by staff departures, we have also increased our efforts to encourage employee and leadership development. A suite of training programs is available, targeting both new and existing leaders within the company. New to 2012, we partnered with Queens University to develop the Advanced Leadership Program. This program, specially designed for employees with at least five years of leadership experience, provides development focused on our key Leadership Capabilities. The first 30 participants completed the program late in 2012, while a second group began training in early 2013.

Our recruitment efforts also play an important role in filling vacancies and building a depth of talent. For example, in addition to our postsecondary outreach and new graduate recruitment and New Grad Program, our New Grad Society helps to support the development of recent graduates working with Encana. The New Grad Society encourages growth and development through technical training, lecture series and networking opportunities in social and professional settings.

Our employee survey, conducted every two years, helps us measure the effectiveness of these various programs and allows us to evaluate employee engagement in company strategy, confidence in its leadership, support for skill development, recognition for work performed and commitment to being an ethical and socially responsible employer. The survey helps to identify areas of strength as well as areas of potential improvement, and provides valuable baseline data to our senior management team.

This lifecycle approach to workforce planning allows us to manage the risks associated with the gradual retirement of experienced staff, while proactively identifying emerging leaders for development and succession planning. While these retirements are inevitable, our efforts are designed to support a smooth transition to the next generation of talented employees.



People			
Total staff (employees and contractors)	2010	2011	2012
Canada	2,978	3,105	2,995
U.S.	2,081	2,020	1,942
Other	3	0	0
Total Staff	5,062	5,125	4,937
Gender ratio (percent of total)			
Male	62	62	62
Female	38	38	38
Breakdown by age (percent of total)			
20-25	6	5	6
26-30	15	15	14
31-35	15	15	15
36-40	13	14	14
41-45	12	12	11
46-50	13	12	11
51-55	14	14	15
56-60	8	9	9
61-65	3	3	3
66-99			1
Voluntary attrition by gender (percent of age group) <sup>(1) (2)</sup>			
Male	4.30	8	7.20
Female	2.80		6.80
Management average salary			
Management female average salary	230,500	249,500	266,670
Management male average salary	247,512	261,110	278,450
Ratio	1.07	1.00	1.04
Executive Team gender ratio			
Male	75	80	80
Female	25	20	20
Board of Directors gender ratio			
Male	70	70	70
Female	30	30	30

(1) Of the 296 voluntary terminations in 2012, 108 were women and 188 were men. There were 39 voluntary retirements in 2012.
 (2) Encana's 2012 voluntary attrition rate of 7.1% is approximately 50th percentile (median) of our Canadian Industry peers as per the T20 Canadian Survey.

# Continually improve our culture of safety at work, on the road and at home

aintaining our strong safety performance while accelerating development plans and increasing production remains a core value. Improving the safety of our operations is a constant area of focus. Like all oil and gas producers, Encana faces risks throughout its operations – particularly as it relates to worker health and safety. Proactively looking for opportunities to improve our safety performance supports the immediate wellbeing of our staff and neighbouring communities, helps improve operational efficiency, mitigates legal and regulatory risk and reinforces positive relationships with key stakeholders.

In 2012, we continued to refine and improve our safety programs with Ethos, our environment, health and safety (EH&S) management system, providing the primary framework. Over the course of 2013, we will continue to identify opportunities to promote strong safety leadership throughout the organization and strive to improve our health and safety performance.

# Supporting worker safety as it relates to early lifecycle well operations

In the wake of the two tragic fatalities within our operations last year, we undertook a company-wide initiative to examine and improve how we manage operations early in their lifecycle at our worksites.

Over the course of 2012, a crossdisciplinary project team worked to identify new, additional or modified practices to improve the safety of operations associated with well operations early in their lifecycles, including well completion, commissioning and initial production operations. Our EH&S leaders reviewed over 200 incidents associated with early lifecycle well operations since January 2009, along with audit results and staff observations, in order to identify common contributing factors to incidents, regardless of the severity of the incident. The team of senior EH&S, completions, production operations, supply management and engineering leaders convened in September 2012 and identified 15 areas for improvement in our early lifecycle well operations management. Controls ranging from administrative to engineering were examined in detail to identify opportunities to improve safety performance.



While the teams work to develop these new controls, we have also created six new Pressure and Pipe Principles, which apply specifically to early lifecycle well operations. We have committed to working with contractors and service providers to:

Shut-in wells, bleed off pressure, and utilize lockout / tagout measures prior to working on or near a wellhead.

Establish restricted work areas or "no-go zones" around high-pressure sources during pressure testing, pumping and hydraulic fracturing operations. We will eliminate non-essential personnel from work areas, respect pressure and avoid being in the line of fire even around low-pressure sources.

Verify that pipe and pumping equipment is designed, installed, inspected, tested, and maintained based on integrity management programs and quality assurance / quality control processes. We support the use of pipe restraint systems on permanent and temporary piping.

Effectively manage flowback relative to rates and velocities, pressures, sand production, appropriate surveillance, and wellhead configuration. We will conduct a risk assessment prior to flowing through side outlet casing valves.

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Conform with procedures. If conditions change, if deviations are required, or if proper tools are not available, we will stop work, reassess risk and develop an updated, approved procedure.

Support our Stop Work program. Everyone involved with a particular operation has the right and responsibility to stop the job if they observe a situation that could impact the safety of the operation.

Working with contractors and service providers to enact these principles will support our ongoing efforts to create a workplace free of recognized hazards.

## Continuously improving safety performance

We are continuously working to improve our safety performance. We work closely with our service providers to identify and implement strategies to improve workplace safety. These efforts help to create safe worksites and foster positive working relationships with our contractors and service providers. Our goal is to eliminate safety incidents at our worksites.

In 2012, Encana's total recordable injury frequency was reduced by approximately 10 percent from 2011, demonstrating a strong overall safety performance improvement across the company. These results were driven by focused efforts by staff in all of our business units working alongside our service providers. For example, the Northwest Business Unit in our Canadian Division finished 2012 with a total recordable injury frequency of 0.41 – the best ever performance for that business unit – and a 50 percent reduction in motor vehicle incidents (MVI) from the previous year. Meanwhile, in our USA Division, the Mid-Continent Business Unit Drilling Operations team finished 2012 without a single recordable incident.

Motor vehicle incidents, identified as one of the company's most prevalent safety risks, were also down significantly in 2012. Our concerted efforts to train and educate staff on safe driving behaviours coincided with a 20 percent reduction in MVIs across the company in 2012.

Moving forward, we will continue our efforts to improve our safety performance by developing new approaches and continuously improving existing strategies, programs and practices to identify and reduce both the number and severity of health and safety incidents.

## Managing occupational health risk

Over the past year, we undertook a number of initiatives to support the anticipation, recognition, evaluation and control of workplace health hazards such as benzene, noise, ergonomics, radiation, heat stress and silica exposure. These efforts help mitigate long-term operating risk by reducing human health risks, contributing to cost savings and supporting regulatory compliance. In support of those efforts, we finalized the implementation of our industrial hygiene electronic information management system in 2012. The system allows us to collect and report on a variety of industrial hygiene indicators, such as workplace exposure data, air monitoring, sound level maps, naturally occurring radioactive material surveys and silica exposure. This system was configured to align with our industrial hygiene monitoring program and risk tolerances. It allows us to efficiently consolidate data and assess industrial health risk within our operations based on specific hazards and tasks.

We also made significant strides in 2012 in mitigating the risks associated with workplace health hazards, such as silica. For example, in our USA Division, our industrial hygiene team assisted with the development and testing of several systems to control potential silica exposures in partnership with the National Institute for Occupational Safety and Health and our service providers. Several of these systems show promise for reducing occupational exposures to respirable silica and have a secondary benefit of reducing visible dust emissions from completions sites. We are also involved in the South Texas Exploration and Production Safety Network, an association of regional exploration and production safety networks. This industry group is developing next steps to protect workers from respirable silica dust during hydraulic fracturing or treating of wells. While these engineering controls are being used to mitigate silica hazards in our worksites, we have also worked to implement robust silica awareness and training programs. In our Canadian Division we developed a suite of silica dust management educational materials specifically for Encana staff and service providers in our field locations, including an online orientation and e-learning course.

Moving forward, we will continue efforts to improve our occupational health management, including increased awareness and communications efforts regarding health hazards. We are also developing a comprehensive health surveillance protocol, which will allow us to determine consistent standards of care for employees who are exposed to workplace hazards. We are also working to integrate workplace hazard training into our talent management system (for more on our talent management system see page 29).





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Recordable number of incidents:	2010	2011	2012
Employees	8	5	19
Contractors	213	209	154
Total Encana	221	214	173
Lost time number of incidents			
Employees	2	2	4
Contractors	48	33	24
Total Encana	50	35	28
Number of fatalities			
Employee	0	0	0
Contractor	0	0	2
Total Encana	0	0	2
Recordable injury frequency			
 Employees	0.20	0.11	0.46
Contractors	0.76	0.72	0.52
Total Encana	0.68	0.64	0.51
Lost time injury frequency			
Employees	0.05	0.05	0.10
Contractors	0.17	0.11	0.08
Total Encana	0.15	0 10	0.08

(1) Recordable injuries include permanent total disabilities, lost workday cases, restricted work cases, medical treatment cases and fatalities.
(2) Estimation of contractor hours is based on gross operational and gross capital expenditures using 2009 American Petroleum Institute conversion factors.
(3) Frequency is based on 200,000 exposure hours.
(4) We calculate exposure hours based on U.S. dollars in our Canadian and USA Divisions.
(5) Frequency equals (number of occurrence X 200,000)/exposure hours.

# Manage regulatory risk

ffective regulation is essential to natural resource development. Access to land, resources and infrastructure would be impossible without sound regulatory frameworks. Managing regulatory change in all areas of our operations enables us to better deliver on our business strategy, sustains value for our shareholders and helps manage reputational risk.

Cooperation with regulators and governments, whether they be federal, state, provincial or municipal, is essential to ensuring the long-term sustainability of our industry. We operate in a number of jurisdictions in both Canada and the United States and managing compliance with a number of interrelated and complex regulations related to oil and gas development can be resource-intensive and challenging. For this reason, we look for opportunities to engage our industry peers and governments in dialogue specific to regulatory developments in order to encourage responsible development, protect industry's competitiveness, create regulatory certainty and support continued investment in the sector.

We create internal policies, procedures and disclosures that meet or exceed regulatory requirements. The Corporate Responsibility, Environment, Health and Safety Committee of Encana's Board of Directors reviews and recommends environmental policy to the Board of Directors for approval and oversees compliance with government laws and regulations. Monitoring and reporting programs for environmental, health and safety performance in dayto-day operations, as well as inspections and assessments, are designed to help ensure that environmental and regulatory standards are met.

Measuring the impacts of our activities, engaging regulators on effective and practical policy, utilizing innovative technologies and strategically positioning ourselves in an ever-changing regulatory environment are critical to managing our regulatory risk. Moving forward, we continue to look for opportunities to mitigate regulatory risks through active monitoring, assessment, forecasting and industry collaboration.

# Promoting transparency throughout our operations

Transparency and accountability help manage our regulatory risks and create opportunities to educate stakeholders on how Encana develops energy resources, the economic benefits of energy development and the environmental opportunities available to industry. Unless we effectively understand our risks, we are unable to manage them; unless we are transparent about the impacts of our activities we cannot expect trust from regulators or the public. Our efforts in this regard include communicating and educating stakeholders on our activities, the impacts of those activities and the programs underway to improve our environmental, social and governance (ES&G) performance.

Over the course of 2012, we took a number of steps to encourage transparency throughout our operations. These initiatives include communicating our overarching ES&G performance, disclosing our hydraulic fracturing fluid components through the publically accessible website FracFocus and the advancement of our Responsible Products Program, which we use to manage hydraulic fracturing fluid additives (for more on this program, see page 45).

We continually evaluate how we measure ES&G data and voluntarily report performance through this report, as well as various disclosure-driven surveys throughout the year. In 2012, we reported information on our ES&G performance via the Carbon Disclosure Project, the Dow Jones Sustainability Index and the Carbon Disclosure Water Project.

We disclose hydraulic fracturing fluid components used in our operations online via FracFocus. Our participation, which applies to both our Canadian and U.S. operations, includes disclosing information about oil and gas well locations, the amount of water and proppant (sand) used in hydraulic fracturing, chemicals used in fracturing fluids and the chemical abstract number assigned to specific components of these chemicals. We began voluntarily disclosing this information in our USA Division in 2011 in an effort to improve public disclosure regarding the composition of fluids used in hydraulic fracturing and the tool is now being widely adopted as the medium of choice for regulators introducing mandatory disclosure.

This report also marks the first year that we have disclosed water use in our annual corporate responsibility reporting. Although we regularly report on water use to various regulatory bodies, we have identified that a consolidated, companywide disclosure of our water data is an opportunity to improve transparency among key stakeholders. Environmental regulation establishes a number of obligations related to water management in connection with energy development and requires robust data management in order to ensure compliance (read more about our efforts to improve these systems on page 46).

# Evaluating the impact of a carbon price on our operations

We assess the impacts of possible legislative changes and regulatory requirements in all areas of our operations by forecasting and planning for a number of medium and long-term scenarios. We support internal strategic decision-making and risk management by partnering with a third-party external service provider to forecast and analyze projected compliance liability costs in North America for a range of greenhouse gas (GHG) regulatory and carbon pricing scenarios. The regulatory and carbon price scenarios cover all of our North American operations, and are updated annually to provide reasonable estimations of the forecasted total compliance liability resulting from anticipated climate change-related policies in Canada and the USA.

In these analyses, forecast data and scenarios are generated using our GHG emissions and strategic planning data along with our service provider's proprietary carbon modelling application. The results of our analyses provide insight on how policy and carbon price changes could reasonably affect Encana's future operations, and support the formulation of appropriate risk management, strategic responses and company policy.

Within our operating divisions, we actively work with governments to support policy development which supports industry's competitiveness. For example, we continue to work with the Canadian government in the development of greenhouse gas regulations specifically for the oil and gas industry. We have also conducted internal analysis to determine exposure to pending carbon regulation and provide that information to our business units.

The emerging carbon-focused regulatory system is of material importance to Encana, and we intend to position ourselves to excel as an efficient producer, as well as an



innovator in developing new technologies. This leading-edge approach to carbon forecasting and emissions mitigation will support our competitive advantage moving forward and create long-term certainty within our operations.

# Collaborating on applied environmental research

Advancing the development of applied scientific research as it pertains to energy development helps to improve the way we operate, supports sound strategic decisions and provides valuable information to regulators and industry. In our highly technical industry, partnerships between industry members, leading postsecondary institutions and governments play a critical role in informing regulatory and policy decisions, particularly in areas where little baseline data exists.

In Wyoming, our long-term partnership with the University of Wyoming recently culminated with the installation of an advanced X-ray microscope. This customdesigned equipment allows researchers to obtain ultra-high resolution micro-images of porous media. Once scanned, these 3D maps of pore space can be used to accurately characterize and model flow and fluid occupancy in reservoir rocks relevant to subsurface reservoirs, which can contain oil and gas. This research advances our understanding of reservoirs and may significantly improve resource recovery. Moreover, it may also have direct application for the potential geologic storage of greenhouse gases, supporting the potential for effective future environmental policy decisions.

In Alberta, Encana is sponsoring Dr. Daniel Alessi (currently of the Environmental Microbiology Laboratory, Ecole Polytechnique Fédérale de Lausanne, Switzerland) to move from his current position to become Assistant Professor and Encana Chair in Water Resources at the University of Alberta, effective July 1, 2013. Encana will contribute C\$100,000 annually over a period of five years. Dr. Alessi's fields of expertise include low-temperature geochemistry, hydrogeology and geomicrobiology. The primary goal of the Encana Chair in Water Resources is to conduct research to inform water monitoring and best practices for hydraulic fracturing operations. In support of that overarching goal, Dr. Alessi will focus his efforts on a number of projects, including (i) the use of near-fresh, non-potable groundwater in hydraulic fracturing operations and (ii) potentially toxic transformation products in produced water.

Engaging in projects like these helps to inform regulators and stakeholders by providing critical baseline data while also helping to inform the way we interact with the environment. As the industry continues to grow, these types of partnerships will enable us to improve operational efficiency, reduce costs and support informed industry development by making valuable, objective research available to policy-makers. See page 40 for another example of how our cooperation with industry and academia is helping us better manage our emission footprint.

# Understanding and mitigating induced seismicity

Mining, dam construction, injection of fluids, oil and gas development and geothermal energy operations involving deep fluid injection have the potential to trigger induced seismic events. Understanding, monitoring and mitigating induced seismicity is important in a number of industries, including natural gas development.

In August 2012, the British Columbia Oil and Gas Commission (OGC) released its findings regarding low-level induced seismic events in the Horn River Basin. We participated in the study and provided data from our Horn River operations.



The OGC's investigation determined that seismic events recorded in the Horn River Basin were induced by fault movement resulting from injection of fluids during hydraulic fracturing. Micro-seismic activity is a routine and well-documented occurrence associated with hydraulic fracturing. Both minor seismic events (2 to 3.6 Richter magnitude scale) and microseismic events (less than 2 magnitude) were recorded between April 2009 and December 2011 by government and industry seismic sensors in the Horn River. It's important to note that the OGC's report was consistent with our internal findings that the induced seismicity posed no risk at any time to health, safety or the environment or caused any injury or property damage.

Through the research process, we adopted practices in the Horn River that are in line with the recommendations put forward by the OGC in its final report. Industry practices, drawing heavily upon our learnings and guidance from the U.S. Department of Energy and the international geothermal industry, were developed by the Canadian Association of Petroleum Producers, allowing for the safe management of induced seismicity and providing quantitative metrics to help determine whether an injection scheme should proceed, proceed with caution or stop. Industry funding of additional seismic monitoring in the region is also being provided in cooperation with Geoscience BC.

Within our USA Division, we are working closely with our industry peers and third parties, such as state geological surveys and area universities, in order to better understand induced seismicity in specific areas and to develop best practices. Wastewater injection and disposal in the U.S. is subject to strict regulation administered by the Environmental Protection Agency through the Underground Injection Control (UIC) program, with authority delegated to the states. We are supportive of improvements in the technical review portion of the permitting process. We also strongly support scientific approaches when investigating these cases of seismic activity and are in proactive discussions with key stakeholders including state regulatory agencies, other operators and trade associations.

Moving forward, we will continue to monitor areas where claims have been made involving other operators and proactively monitor our own operations. We will also share our learnings with our industry peers and regulators in order to develop a holistic understanding of the issue.

	2010	2011	2012
Total abandoned wells awaiting reclamation	662	699	537
Total abandoned wells, active reclamation complete, awaiting reclamation certificate	172	86	217 <sup>(1)</sup>
Well site reclamation certificates received	84	107	52
Total wells undergoing active reclamation	621	893	937
Total reclaimed land (acres)	298	424	434

(1) In 2012, in order to reduce our overall environmental liability, our Canadian Division made a concerted effort to finalize reclamation activities and apply for reclamation certificates for sites where the majority of reclamation was complete.

# Abandonment and reclamation

# Manage our air and greenhouse gas emissions

atural gas is a highly efficient form of energy. Not only does natural gas produce approximately 50 percent less carbon dioxide emissions than coal, it also releases very small amounts of sulphur dioxide and nitrogen oxides during the combustion process. Our large portfolio of natural gas assets is advantageous in managing the regulatory, financial and reputational risks associated with air emissions. We are able to leverage the expertise of our people and existing systems in managing air emissions during increased liquids and oil production. Ensuring that we are adequately able to track, measure, report and manage the emission of criteria air contaminants and greenhouse gases allows us to manage regulatory changes, mitigate reputational risks and create opportunities for operational efficiencies.

We monitor developments in emerging climate change policy and legislation, and consider the associated costs of carbon in our short, medium and long-term planning. The Corporate Responsibility, Environment, Health and Safety Committee of Encana's Board of Directors reviews the impact of a variety of carbon constrained scenarios on Encana's strategy. We are also working alongside Canadian provincial and federal governments as they design new greenhouse gas regulations for the oil and gas sector, which are slated to be released in 2013. In the United States we are closely monitoring the greenhouse gas policy discussion at both the federal and state level.

To improve our environmental performance and operational efficiency, we maintain comprehensive air quality programs that are designed to manage our air emissions inventory and identify opportunities to reduce emissions. We also make investments in projects that improve energy efficiency and mitigate the emissions associated with our operations. Moving forward, we will continue to evaluate opportunities to improve our emissions management processes and, where feasible, reduce emissions intensity and limit our air emissions.

# Refining our understanding of emissions sources

While natural gas produces less carbon dioxide than other fossil fuels when burned, unintended methane leakage during production and transportation creates risk in managing our greenhouse gas emissions. In addition to developing an extensive fugitive emissions management



plan to reduce the occurrence of methane leaks and deploying technologies to manage, monitor and capture fugitive emissions, we have taken steps to better understand methane leakage rates as part of our holistic efforts to improve our operational efficiency.

In conjunction with other industry peers, the University of Texas at Austin and the Environmental Defence Fund, we participated in a study to determine the total methane emission rates associated with unconventional natural gas production activities.

The study, which will provide objective, scientifically rigorous data from multiple gas producing basins, focuses on measuring emissions from completions, gas well liquids unloading and well workovers, in addition to other more routine well-site fugitive emission sources. The participants were committed to generating accurate data on methane emissions from natural gas exploration and production. Encana and the other companies participating in the study provided access to production facilities in order for the University of Texas at Austin to collect data for the study. The completed report will be publically available this year, and help to inform public policy discussion regarding methane emission from natural gas operations and how these emissions compare to the use of other fossil fuels.

With this information, we will be better able to identify improved operating practices, increase efficiency and conserve natural gas within our operations. Ultimately, this research will provide Encana – and industry – with valuable baseline knowledge with which it can better manage its methane emissions and subsequently its environmental, reputational and regulatory risks.

# Continuing to improve the efficiency of our operations

We continue to focus on improving the environmental efficiency of our operations and reducing our emissions intensity. There is no single solution to improving our emissions performance and each of our operating areas has unique circumstances and opportunities.

In 2012, with funding from our Environmental Innovation Fund and Climate Change and Emissions Management (CCEMC) Corporation, we initiated a two-year program to install vent gas capture systems at 52 natural gas compressors in southern



Alberta. The CCEMC was created by the Government of Alberta in 2009 to support the province's Climate Change Strategy and establishes and participates in funding initiatives that reduce GHG emissions or improve society's ability to adapt to climate change. The successful deployment of the technology began in 2012 after two prototype vent gas capture systems, developed by Calgary-based REM Technology, were piloted in 2011. Each system captures fuel gas that was previously vented to the atmosphere as part of normal operations and redirects the gas into the compressor engine's air intake to help fuel the engine. By capturing and redirecting this gas to fuel the engines, we expect to recover approximately 180 million standard cubic feet of sales gas per year once the program is fully implemented. The program is expected to reduce our greenhouse gas emissions by more than 67,000 tonnes of carbon dioxide equivalent annually and generate an additional C\$1,000,000 per year in carbon offsets under the Alberta government's greenhouse gas offset system. To date, almost 40 percent of the vent gas capture systems are operational and we have successfully verified and registered the first Alberta carbon offsets from vent gas capture projects using the government-approved protocol. We can use these carbon offsets to reduce regulatory compliance costs in Alberta, bank the offsets for future use or sell the offsets into the Alberta market and reinvest the proceeds into other energy efficiency projects.

In northern Louisiana, with funding from Encana's Environmental Innovation Fund, we designed and implemented a portable flare unit in order to reduce the emissions associated with removing fluid from the wellbore. Historically in this area, the gas associated with removing liquids from a well was transferred directly into closed tanks and then vented. In early 2012 we developed a small scale pilot project to operate a trailer-mounted flare to reduce vented emissions. Operating since November 2012, the flare unit is forecast to reduce emissions by 2,592 tonnes of carbon dioxide equivalent per year. Although not currently required by regulation, the portable flare unit enables us to move from location to location and flare the associated gas instead of simply venting it, eliminating the emission of methane to atmosphere and creating significant emissions reductions.

Continuing to measure, report and improve our emissions performance will help to ensure we are able to meet and exceed emerging regulatory and community expectations as well as create efficiencies within our operations. Our emphasis on continuously improving our emissions performance will help support broader adoption of natural gas as a core element of North America's energy portfolio.

## **Developing our climate change strategy**

In order to support our long-term decision making and risk management related to air and emissions issues, Encana is developing a comprehensive, long-term air emissions and carbon offset strategy. As part of our commitment to continuous improvement, we have applied significant effort and resources over recent years to refine our air emissions inventory using leading emissions management applications. The increased accuracy of our data over time has improved our ability to evaluate current performance, emerging trends and forecasts to better identify opportunities and risks.

A second key component of our climate change strategy is to invest directly in energy efficiency and emission reduction projects within our operations by dedicating an annual capital budget to invest in projects through our Environmental Innovation Fund. These projects not only achieve direct emission reductions but may also enable the creation of tradable carbon offsets, which can be used to reduce our liabilities under current and future greenhouse gas emission regulations. The value of carbon offsets can greatly enhance the economics of energy efficiency projects and help finance new efficiency projects within our operations. In 2012, we successfully verified and registered carbon offsets from 22 vent gas capture installations and six instrument air conversion projects completed in Alberta. Under the Alberta Specified Gas Emitters Regulation, these qualifying projects can continue to generate carbon offsets, currently valued at approximately C\$15 per tonne of carbon dioxide equivalent, for a period of up to eight years.

As evolving North American climate change policies may include some form of carbon trading, our experience in Canada with the quantification, verification and registration of tradable carbon offsets will enhance our longterm climate change risk management strategy. Our air emissions and carbon offset strategy includes both internally and externally-focused elements which support informed responses to emerging regulatory policy. Internally, we will focus on continuous performance improvement, data management, analysis of long-term trends, scenario forecasting and risk management. Our external focus will include communications, education and collaboration with various stakeholders. including governments.

With this approach, Encana is well prepared to mitigate financial and regulatory risk as it relates to emerging climate change policy and legislation. This proactive approach to climate change response planning reinforces our competitive advantage and creates opportunities to remain a low-cost producer.

Emissions			
	2010	2011	2012
Total energy use			
Canadian Division (10 <sup>3</sup> GJ)	35,341	36,562	31,001(1)
USA Division (10 <sup>3</sup> GJ)	NPR	NPR	5,396 <sup>(2)</sup>
Emissions intensity Canadian Division			
Production energy intensity (GJ/m³OE)	2.28	2.03	1.86 <sup>(3)</sup>
Direct carbon intensity (tonnes/m³OE)	0.18	0.16	0.15(4)
Production carbon intensity (tonnes/m <sup>3</sup> OE)	0.19	0.17	0.16 <sup>(5)</sup>
Emissions intensity USA Division			
Direct carbon intensity (tonnes/m³OE)	0.08	0.09	0.06 <sup>(6)</sup>
Production carbon intensity (tonnes/m³OE)	0.10	0.10	0.09
GHG emissions			
Canadian Division			
Direct CO <sub>2</sub> e (10 <sup>3</sup> tonnes)	2,967	3,074	2,854
Total purchased electrical consumption (MWh)	397,162	413,790	368,068
Indirect CO <sub>2</sub> e (10 <sup>3</sup> tonnes)	170	177	136
USA Division			
Direct CO <sub>2</sub> e (10 <sup>3</sup> tonnes)	2,276	2,373	1,435(7)
Total purchased electrical consumption (MWh)	462,367	457,152	678,412
Indirect CO <sub>2</sub> e (10 <sup>3</sup> tonnes)	429	389	577
Nitrogen oxides (NO <sub>x</sub> ) emissions (tonnes)			
Canadian Division	18,960	17,724	11,361®
USA Division	4,451	1,948	1,235 <sup>(9)</sup>
Sulphur dioxide (SO2) emissions (tonnes)			
Canadian Division	2,949	2,747	2,475(10)
USA Division	21		3
Total gas flared (10 <sup>3</sup> m <sup>3</sup> /yr)			
Canadian Division	51,889	50,102	34,662(11)
USA Division	52,199	25,482	32,878(12)
Total gas vented (10³m³/yr)			
Canadian Division	4,490	2,742	3,184
USA Division	70,387	88,409	67,668

(1) Energy use decreased in 2012 in our Canadian facilities due to reductions in fuel and flare volumes and electrical consumption in our operations.
 (2) Reported energy use in Canadian Division is higher than in USA Division due to the inclusion of additional sources in the Canadian value, as well as operational differences. USA Division energy represents fuel used by Encana-owned and operated equipment in generating useful work. Energy resulting from flaring and fuel used by leased and mobile equipment are excluded.

(3) Production energy intensity in the Canadian Division decreased in 2012 due to greater reductions in fuel and flare volumes and electrical consumption compared to reductions in production volume.

production volume.
(4) Direct carbon intensity decreased in 2012 due to greater reductions in fuel, flaring, and venting emissions compared to reductions in production volume.
(5) Production carbon intensity decreased in 2012 due to greater reductions in fuel, flaring, venting, and purchased electricity emissions compared to reductions in production volume.
(6) Carbon intensity decreased in 2012 due to greater reductions in fuel, flaring, venting, and purchased electricity emissions compared to reductions in production volume.
(6) Carbon intensities in our USA Division are comparatively lower than in our Canadian Division due to a combination of more processing and compression in our Canadian operations, and lower emissions calculation methodology underwent a number of data, process, and methodological improvements in 2012 resulting in a significant decrease in calculated direct emissions from 2011. If the current methodology is applied to the 2011 emission inventory, the revised value for last year would be 1,568 10<sup>3</sup> tonnes CO<sub>2</sub>e.
(8) Canadian Division NO, emissions decreased significantly in 2012 due to lower overall fuel usage in our operations combined with a refinement of our NO<sub>2</sub> emissions calculation methodology that involved converting engines from generic to actual configurations, and switching from default emission factors to fuel-based factors calculated from manufacturer specifications
(9) USA Division NO emissions decreased in 2012 due to a number of divestitures that reduced our engine inventory, and thus reduced engine emissions. In addition, the NO

(9) USA Division NO<sub>2</sub> emissions decreased in 2012 due to a number of divestitures that reduced our engine inventory, and thus reduced engine emissions. In addition, the NO<sub>2</sub> calculation methodology underwent a number of data, process, and methodological improvements in 2012 resulting in a decrease in calculated NO<sub>2</sub> emissions from 2011. If the current methodology is applied to the 2011 NO<sub>2</sub> emission inventory, the revised value for last year would be 1,826 tonnes.
(10) Canadian Division SO<sub>2</sub> emissions decreased in 2012 due to the divestiture of two large sour gas plants.
(11) Canadian Division flared volume increased due to a combination of ongoing systemic improvements in tracking the use of flares in drilling and completions activities as driven by GHGRP Subpart W compliance activities, and a shift in production focus toward oil plays where the amount of gas flared tends to increase initially as new locations flare associated gas (gas that that is co-produced with the oil but cannot be sold).

# Maintain a comprehensive approach to water management



ur ability to develop oil and gas resources depends on water and a rigorous approach to water management is critical to executing on our business objectives. As the energy industry faces continued scrutiny from stakeholders for how it sources, uses and disposes of water, we are using a comprehensive water management strategy to address concerns. We work to ensure that sound operating practices are in place to address issues such as water sourcing, wellbore construction, additive selection and disclosure and flowback fluid reuse, recycling and disposal. We adapt our approach to account for local geological factors, local water resources, stakeholder feedback and our operational needs. This fit-forpurpose approach allows for the creation of tailored water management program which is efficient and effective from an operations perspective while at the same time responsive to stakeholder concerns.

We continue to identify opportunities to develop and improve on existing best practices as it relates to water management to help mitigate our reputational and operational risk. Over the course of 2012 we made advances in tracking and monitoring water use, developing alternative sources in certain areas and improving the efficiency of our operations. We continue to develop and implement improved operating practices, look to engage key stakeholders and refine our water management approach.

## Advancing the deployment of Encana's Responsible Products Program

In 2010, in response to increasing stakeholder concerns regarding the use of chemical products in hydraulic fracturing, we began to develop a comprehensive hydraulic fracturing fluid product assessment and management program. The program was designed to mitigate stakeholder concerns, improve operational practices and help manage environmental, regulatory and safety risks. To adequately manage the complexity of this issue, we involved experts from throughout our operations including our environment, industrial hygiene, completions, procurement, legal and regulatory teams.

The result, Encana's Responsible Products Program, was initiated in 2011 and fully implemented in 2012. This risk-based tool allows us to carefully assess the hydraulic fracturing fluid additives we use for the potential to impact human health or the environment using generally accepted toxicological criteria. Using the program, we determined that the most effective way to manage the risks associated with diesel, 2-BE and benzene was to eliminate those chemicals from use as hydraulic fracturing fluid additives. Additionally, through the course of implementing the Responsible Products Program, we have prohibited the use of arsenic, cadmium, chromium, lead or mercury in our hydraulic fracturing fluids. Over the course of 2012, we

assessed in excess of 350 fluid system products across our operations. Although only a limited number of these products are actively used depending on the nature of our operations, we screen products for potential use to support a comprehensive evaluation process.

We have shared our Responsible Products Program with members of the Canadian Association of Petroleum Producers (CAPP) who have adopted it for use as an industry-wide tool to help address stakeholder concerns related to the chemicals used in hydraulic fracturing. We have also had several discussions over the past year with the American Exploration and Production Council and other U.S. trade associations regarding the viability of a similar approach in the United States. The Responsible Products Program was also among three projects recognized with the top honour at CAPP's 2013 Responsible Canadian Energy Awards. Encana received the President's Award, which is presented to an energy company for activities that demonstrate exceptional environmental, health, safety or social performance.

# Continuing to responsibly manage water resources

With increasing concern from a variety of stakeholders regarding how our industry manages water, ensuring we are managing our water sourcing requirements appropriately is critical to the execution of our business strategy. Concerns regarding our water use from communities, other water users and regulators can significantly impact the way we develop our resources, making it imperative that we effectively manage our water sourcing requirements. Water is also fundamental to our operations and carries a large cost, making responsible management not just good for our reputation but also our operational efficiency.

In 2012 we began construction of our Water Resource Hub, a unique project for water use in the Arras, Farmington and Dawson Creek areas of British Columbia. This multi-phase project targets an unutilized source of saline water as an additional source for our development needs. The project includes a water distribution network to allow for the increased use of pipelines to deliver water to specific locations instead of using trucks. To date, we have completed one vertical water well and drilled two horizontal water wells. Our development plan calls for additional water wells to be drilled in 2013 and beyond. Ultimately, this project will decrease the need for surface water use and reduce the traffic, emissions, dust and noise associated with trucking water to specific well sites. Construction of the facility is expected to be completed in 2014.

In Alberta, we are actively participating with our industry peers and government to better understand regional surface water, groundwater and deep saline water resources in the Montney and Duvernay. This project is designed to assist our industry in accessing reliable water sources and disposal zones while minimizing impacts on other water users and stakeholders. The initiative, which is modelled after a successful GeoScience BC project in British Columbia that we also participated in, will provide a comprehensive review of potential source water from surface sources, unconsolidated sediments and deep saline bedrock aquifers. The work performed will provide an understanding of regional variability and resource potential, support responsible and sound decision making and provide valuable information to a variety of interested stakeholders. Phase one of the project is anticipated to conclude in the summer of 2013.

In Colorado, we partnered with the U.S. Geological Survey (USGS), regulators, municipalities and a number of industry peers in a baseline groundwater and surface water-quality assessment for the Piceance Basin. The data, which is available online, is administered by the USGS and is designed to gain a better understanding of the current water quality in the Basin, as well as to identify and address any concerns about water quality. The need for this repository and baseline water quality assessment was identified by both industry and local governments in order to proactively address concerns regarding water resources in the face of large-scale energy development and population growth. The platform of a common data repository has resulted in the most comprehensive collection of water-quality sampling information available in a single location.

Managing our sourcing requirements in the future will require a robust and comprehensive review of regional considerations. Continuing to work to find the best solution given our operating needs, applicable regulations and stakeholder feedback will help us in developing the best water management approach for each operating area.

# Improving our water tracking systems and reporting

Environmental legislation imposes restrictions and obligations in connection with the management of fresh or potable water sources in connection with natural gas and oil operations. In response to



these increasing regulatory obligations, we have worked to improve our water management and tracking systems over the past several years.

Because we operate in areas with varying water demands, regulatory environments and reporting requirements, robust water tracking systems are critical to operational efficiency. In an effort to further understand the way we are managing and using our water resources we completed a project to map our current water tracking and reporting processes across our operations.

We reviewed all of our activities which utilize water and documented the processes we follow in order to compile and report water data in each of our sub-business units. The results have allowed us to improve our processes and increase our confidence in the water data we collect and report internally and externally.

## Supporting the development of industry best practices

In February 2012, CAPP announced new Canada-wide hydraulic fracturing operating practices designed to improve water management and water and fluids reporting for shale gas and tight gas development across Canada. Developed by natural gas producers – including Encana – the practices apply to all CAPP members exploring for and producing natural gas in Canada.

Encana's Vice-President, Corporate EH&S, Security & Corporate Responsibility served as the chair of CAPP's Shale Water Steering Committee and was actively involved in the creation of these practices. The operating practices include:

- Fracturing Fluid Additive Disclosure
- Fracturing Fluid Risk Assessment and Management
- Baseline Groundwater Testing
- Wellbore Construction and Quality Assurance
- Water Sourcing, Measurement and Reuse
- Fluid Transport, Handling, Storage and Disposal

The development of CAPP's operating practices strengthens the industry's focus on continuous performance improvement and a number of elements of our water management strategy already align with CAPP's operating practices. The creation and adoption of our Responsible Products Program is a significant step and aligns seamlessly with CAPP's practices, as does our participation in the FracFocus online disclosure registry. CAPP expects that the hydraulic fracturing operating practices will complement existing regulatory requirements.



## Water

Encana water use (bbls)	2010	2011	2012
Total fresh water (surface & groundwater)	NPR	NPR	34,325,457
Total saline water (groundwater)	NPR	NPR	52,419
Total source water used <sup>(1)</sup>	NPR	NPR	34,377,876

(1) Total source water used consists of fresh and saline water sources but does not include produced, recycled or reused water.

# Independent assurance report

# To the Board of Directors and Management of Encana Corporation ("Encana")

We have reviewed selected performance indicators (the "Subject Matter") presented in Encana's Corporate Responsibility Report (the "Report") for the year ended December 31, 2012. A review does not constitute an audit and, consequently, we do not express an audit opinion on the selected performance indicators.

## **Subject Matter**

We reviewed the selected performance indicators listed below and set out in the Report [GRI Reference]:

### Canadian Division

- Canadian energy use [EN3]	31,001 Terajoules (TJ)
- Canadian carbon dioxide equivalent [EN16]	2,854 Kilotonnes of carbon dioxide equivalent (ktCO <sub>2</sub> e)
- Canadian nitrous oxide emissions [EN20]	11,361 Tonnes of $NO_x$ (tNO <sub>x</sub> )
- Canadian sulphur dioxide emissions [EN20]	2,475 Tonnes of SO <sub>x</sub> (tSO <sub>x</sub> )
US Division	
- US energy use [EN3]	5,396 TJ
- US carbon dioxide equivalent [EN16]	1,435 ktCO2e
- US nitrous oxide emissions [EN20]	1,235 tNO <sub>x</sub>
- US sulphur dioxide emissions [EN20]	2.66 tSO <sub>x</sub>

The Subject Matter was chosen by Encana management primarily on the basis of perceived external stakeholder interest. We did not review the narrative sections of the Report except where they incorporated the Subject Matter, nor did we review other performance indicators included in the report.

## **Responsibilities**

Encana management is responsible for the collection and presentation of the Subject Matter set out in the Report. Our responsibility is to express a conclusion, based on our assurance procedures, as to whether anything has come to our attention to suggest that the Subject Matter is not presented fairly in accordance with the relevant criteria.

## Assurance standards and procedures

We conducted our work in accordance with the International Standard on Assurance Engagements (ISAE) 3000, "Assurance Engagements other than Audits or Reviews of Historical Financial Information", issued by the International Federation of Accountants. As such, we planned and performed our work in order to provide limited assurance with respect to the Subject Matter. We obtained and evaluated evidence using a variety of procedures including:

- Interviewing relevant management and staff responsible for data collection and reporting;
- Obtaining an understanding of the management systems, processes and the relevant controls used to generate, aggregate, and report the data at Encana operations and corporate office;
- Reviewing relevant documents and records on a sample basis;
- Testing and re-calculating information related to the selected performance indicators on a sample basis; and,
- Assessing the information for consistency with our knowledge of Encana's operations, including comparing Encana's assertions to publicly available third-party information.

Our assurance criteria comprised the Global Reporting Initiative (GRI) Sustainability Reporting 3.1 Guidelines (2011), industry standards, and Encana internal management definitions as disclosed in the Report, informed by relevant regulations. Our assurance team included individuals with environmental and assurance experience.

Environmental and energy use data are subject to inherent limitations of accuracy given the nature and the methods used for determining such data. The selection of different acceptable measurement techniques can result in materially different measurements. The precision of different measurement techniques may also vary.

### Conclusion

Based on our work as described in this report, nothing has come to our attention that causes us to believe that the Subject Matter is not, in all material respects, presented fairly in accordance with the relevant criteria. This report is intended solely for use by the Management and Board of Directors of Encana.

elotte ILP

Deloitte LLP Calgary, Alberta, Canada May 7, 2013

# Advisories and terms

## **Currency and volumes**

All information included in this document has been prepared in accordance with United States ("U.S.") generally accepted accounting principles ("U.S." GAAP") and in U.S. dollars, except where another currency has been indicated. Production volumes are presented on an after royalties basis consistent with U.S. oil and gas reporting standards and the disclosure of U.S. oil and gas companies. The term "liquids" is used to represent oil, natural gas liquids ("NGLs") and condensate. The term "liquids rich" is used to represent natural gas streams with associated liquids volumes.

## **Non-GAAP measures**

Certain measures in this document do not have any standardized meaning as prescribed by U.S. GAAP and, therefore, are considered non-GAAP measures. Non-GAAP measures are commonly used in the oil and gas industry and by Encana to provide shareholders and potential investors with additional information regarding the Company's liquidity and its ability to generate funds to finance its operations. Non-GAAP measures include: Cash Flow; Operating Earnings; Adjusted Earnings Before Interest, Taxes, Depreciation and Amortization ("Adjusted EBITDA"); Debt to Adjusted EBITDA; and Debt to Adjusted Capitalization. Further information can be found in the Non-GAAP Measures section of Encana's Management Discussion and Analysis for the year ended of December 31, 2012.

### **Resource play**

Resource play is a term used by Encana to describe an accumulation of hydrocarbons known to exist over a large areal expanse and/or thick vertical section, which when compared to a conventional play typically has a lower geological and/or commercial development risk and lower average decline rate.

### **References to Encana**

Unless otherwise specified or the context otherwise requires, reference to Encana or to the Company includes reference to subsidiaries of and partnership interests held by Encana Corporation and its subsidiaries.

For convenience, Encana may refer to third-party capital investments, farmouts or partnerships from time to time as "partnerships" or "joint ventures" and the funds received in respect thereof may be refered by Encana from time to time as "proceeds", "deferred purchase price" and/or "carry capital", regardless of the legal form.

## Definitions

**Aquifer** – a body of permeable rock that can contain or transmit groundwater.

**Deep saline** – a deep underground rock formation composed of permeable materials and containing highly saline fluids.

**Direct emissions** – emissions resulting from our activities and that come from sources owned and controlled by us.

Flowback – water that is brought to the surface during the completions operations and may include fracturing fluids.

**Indirect emissions** – emissions that arise from our consumption of purchased electricity.

**Motor vehicle incident** – an incident which involves a motor vehicle in motion coming in contact with another vehicle, other property, person(s) or animal(s).

Non-potable water - water that is not of drinking water quality.

**Produced water** – water that is brought to the surface during the production of hydrocarbons. Produced water may include reused water or water produced from the geologic formation.

**Reclamation** – the process of restoring, improving or reclaiming disturbed land to productive uses and sustainability, or as defined and required by applicable regulatory agencies.

### Abbreviations

bbls	barrels
bbls/d	barrels per day
Bcf	billion cubic feet
Bcf/d	billion cubic feet per day
CO <sub>2</sub> (e)	carbon dioxide equivalent
CO <sub>2</sub>	carbon dioxide
EBITDA	earnings before interest, taxes, depreciation
	and amortization
Mbbls	thousand barrels
Mbbls/d	thousand barrels per day
MMbbls	million barrels
MMbbls/d	million barrels per day
Mcf	thousand cubic feet
MMcf	million cubic feet
MMcf/d	million cubic feet per day
NGL	natural gas liquids
NO <sub>x</sub>	nitrogen oxides
NPR	not previously reported
SO <sub>2</sub>	sulphur dioxide
Tcf	trillion cubic feet

## About the images

The portraits at the front of this report were created by Karen Klassen, a Calgary-based artist and illustrator whose work has appeared in Rolling Stone, Runner's World and a host of other books and campaigns in the U.S., Canada, France, England and Russia.

To ensure these engaging images live a deserved life beyond these pages, they will be re-invested into the valued people and communities in which we work. Stay tuned to our website and social media channels over the upcoming year to find out how.



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