



CANADA-NOVA SCOTIA BENEFITS

DEEP PANUKE 2013 ANNUAL REPORT

Encana Corporation
Halifax, Nova Scotia

March 31, 2014

TABLE OF CONTENTS

	Page
I. Executive Summary	3
II. Introduction	3
II.I Local Office	
III. Business Opportunities & Supplier Development	4
III.I Communication of Business Opportunities	
III.II Stakeholder Communications	
IV. Business Expenditures and Employment	5
IV.I Business Expenditures	
IV.II 2013 Person Hours	
V. Disadvantaged Groups	5
V.I Sharing Business and Employment Opportunities	
V.II Aboriginal Liaison	
V.III Persons with Disabilities	
V.IV Members of Visible Minorities	
V.V Women	
V.VI Diversity Training and Reporting	
VI. OSEA – Offshore Strategic Energy Agreement	9
VI.I Update on Activities	
VII. Education & Training / Research & Development	10
VII.I Deep Panuke Education & Training and Research & Development Fund (the Fund)	
VII.II Calls for Proposals	
VII.III Education & Training Funded Projects	
VII.IV Other Education & Training	
VII.V Research & Development Funded Projects	
VII.VI Other Research & Development	
VIII. Activity Forecast for 2014	14

I. Executive Summary

During 2013, Encana achieved first gas and full production from Deep Panuke. Deep Panuke is now in the operations phase. The following report provides an overview of Encana's activities in Nova Scotia from January 1, 2013 until December 31, 2013.

Highlights of the report include:

- Total spending by Encana on Deep Panuke was \$100.5 million Canadian dollars.
- 732,945 person hours of work by Nova Scotians.
- 113,159 person hours of work by Canadians from other provinces.
- 918,156 person hours of work carried out within Nova Scotia.

Person Hours (January-December 2013) & Cumulative Hours

CATEGORY BY RESIDENCE	2013 PERSON HOURS	CUMULATIVE PERSON HOURS
Nova Scotia Residents	732,945	4,365,141
Canadian Residents from other provinces	113,159	661,937

Note: Table above includes all Nova Scotian and all Canadian Person Hours for Deep Panuke.

II. Introduction

The following report is filed in compliance with Condition 10 (Monitoring, Reporting and Auditing) of the Canada-Nova Scotia Benefits Plan Decision Report ("the Decision Report") for the Deep Panuke Offshore Gas Development as issued by the Canada-Nova Scotia Offshore Petroleum Board (CNSOPB). This report covers the period from January 1, 2013 to December 31, 2013.

II.I Local Office

Encana's local office for Deep Panuke is located in Founders Square at 1701 Hollis Street in Halifax. Resident in the office is the general manager and an interdisciplinary management team, supported by employees and contract staff.

Appropriate levels of decision-making are directed from or take place in the office including management, engineering, procurement, commercial arrangements, accounting, regulatory, communications and community relations, and environment, health, safety and quality.

Through 2013, Encana production field centre (PFC) contractor SBM maintained its office in Dartmouth, NS near the offshore supply base.

At December 31, 2013, the total complement of Encana employees and contract staff supporting Deep Panuke was 35. During the year, Encana personnel worked at the Encana office, at Deep Panuke pipeline landfall in Goldboro, the offshore supply base in Dartmouth or offshore at the PFC in the Deep Panuke field.

III. Business Opportunities & Supplier Development

III.I Communication of Business Opportunities

In 2013, Encana and SBM continued to share business opportunities for Deep Panuke activities with the local supply community. Information regarding Expressions of Interest (EOI), Bidders' Lists and Results/Awards were included in postings to the Business Opportunities section of the Deep Panuke pages on the Encana website, postings to the electronic bulletin board BIDS Nova Scotia and an email distribution list comprised of disadvantaged group representatives. New in 2013, Encana introduced an Atlantic Canada business opportunities RSS feed for interested suppliers to provide another means for sharing information on Deep Panuke procurement. As well, Encana uses social media, particularly Twitter, to notify followers of business opportunities released by Encana for Deep Panuke.

The link to the Encana website for Deep Panuke business opportunities is <http://www.encana.com/communities/canada/atlantic/business-opportunities/> Deep Panuke business opportunities are also reported through third party organizations. For example, information on EOIs, Bidders' Lists and Results/Awards typically are posted the day of issue by The Maritimes Energy Association for its members. Media in Nova Scotia have reported on Deep Panuke business opportunities as well.

III.II Stakeholder Communications

One of the key Project Management Principles contained in The Benefits Plan (Volume 3, Deep Panuke Development Plan Application) described Encana's commitment to developing relationships with stakeholders to inform and involve them in Deep Panuke during the development and operations phases.

In 2013, Encana continued to liaise with stakeholders to share information on Deep Panuke. Methods of liaison included meetings, presentations and/or participation at industry conferences and workshops, phone calls, email notices, social media (Twitter, Facebook and Linked In), information mailings, print material distribution, media relations, participation and/or support of community events and website updates to www.encana.com/deeppanuke (Deep Panuke pages).

Two newsletters were distributed in 2013 to provide stakeholders with updated information on Deep Panuke. The newsletters were distributed to a wide audience through mailings and insertion in publications as well as distribution at meetings, conferences and other business and/or community events attended by representatives of Encana or supported by Encana.

The Deep Panuke web pages include information on procurement activities, community information and links to relevant web sites. In December 2013, refreshed web pages were launched at www.encana.com/deeppanuke in tandem with Deep Panuke achieving full production. Moving forward, these web pages will be used to provide stakeholders with updates on Deep Panuke. Previously in 2013, updates were posted to the Deep Panuke business opportunities pages and the page for the Deep Panuke Education & Training and R&D Fund. As well, new offshore video from Deep Panuke was posted to the Encana Multimedia Gallery at <http://www.encana.com/news-stories/multimedia-gallery/> and Deep Panuke information was featured in the Our Stories area of the site at <http://www.encana.com/news-stories/our-stories>.

Through 2013, there were 13,926 unique page views and 19,744 page views (includes repeat views) to Deep Panuke web pages on the Encana website. The web pages recording frequent

visits during the period were those for business opportunities, newsletters, contact information and community information, as well as the illustration of the PFC and field.

Encana also monitors a general information email box (dpinfo@encana.com), and members of the Deep Panuke team respond regularly to unsolicited inquiries about employment and business opportunities.

IV. Business Expenditures and Employment

IV.I Business Expenditures

The total expenditure for Deep Panuke during the period of January 1 to December 31, 2013 was \$100.5 million Canadian.

IV.II 2013 Person Hours

Total Nova Scotia Person Hours from January 1 to December 31, 2013 for Deep Panuke were 732,945 and Other Canadian hours were 113,159 with 918,156 hours of work performed within the Province of Nova Scotia during the period.

Nova Scotia person hours focused on support for the commissioning of the Deep Panuke production field centre, production operations and for ongoing management.

The cumulative Nova Scotia Person Hours to date are recorded as 4,365,141. Total cumulative hours of work performed within the Province of Nova Scotia was 5,702,776.

V. Disadvantaged Groups

V.I Sharing Business and Employment Opportunities

As directed by the CNSOPB in the Decision Report, the four disadvantaged groups engaged for Deep Panuke are:

- Aboriginal people
- Members of visible minorities
- Persons with disabilities
- Women

In 2013, contact has been maintained with groups and organizations representing the business, employment and educational/training interests of these groups including the Black Business Initiative (BBI), the Encana Native Council Opportunities Fund, Entrepreneurs with Disabilities Network (EDN), Nova Scotia Advisory Council on the Status of Women, the Centre for Women in Business at Mount Saint Vincent University, the Mi'kmaq Rights Initiative, the NSERC Chair (Atlantic Region) in Women in Science and Engineering and Immigrant Settlement and Integration Services or ISIS.

In February 2013, Encana supported the participation of representatives of ISIS, the NSERC Chair, the NS Advisory Council on the Status of Women, Easter Seals, the Centre for Women in Business, the BBI and EDN to attend Oil and Gas 101 in Halifax, a learning opportunity regarding the offshore oil and gas industry hosted by The Maritimes Energy Association.

As well, in 2013 Encana continued to support the four designated disadvantaged groups and their delivery of core programs and services to members by purchasing tickets for events or donating items for fundraising. Among the groups receiving support were:

- CACL Antigonish
- Atlantic Provinces Special Education Authority
- Sunnyville Multicultural Festival
- Black Educators Association
- Micmac Benevolent Society
- L'Arche Halifax
- Leukemia and Lymphoma Society of Canada
- Special Olympics

V.II Aboriginal Liaison

In 2013, Encana liaised with representatives of the Kwilmu'kw Maw-Klusaqn Negotiation Office (KMKNO) and the Encana Native Council Opportunities Fund.

Encana maintains contact with the KMKNO Mi'kmaq Benefits Officer on behalf of the Assembly of Nova Scotia Mi'kmaq Chiefs (the Assembly). In 2013, activity under the five-year agreement between Encana and the Assembly regarding education and training and related opportunities from Deep Panuke included steps toward the development of a Mi'kmaq strategy for increased engagement in the oil and gas industry. A Request for Proposals relating to this strategy was released in July 2013 with nine responses received. Four consultants were interviewed with a final selection being made at year end.

Other activities under the agreement included funding for Eskasoni METS (Mi'kmaq Employment Training Secretariat) to assist eight students in a variety of courses related to the oil and gas industry, Eskasoni Corporate to assist with costs for training 10 students in custom metal fabrication (joint venture of Eskasoni First Nation, Membertou First Nation and East Coast Metal Fabrication) and a Unama'ki Economic Benefits Office Frontline Workers Conference held in Halifax in September 2013.

In addition, funding was provided in 2013 for three Mi'kmaq high school students from Eskasoni and Waycobah to attend the Canada-Wide Science Fair in Lethbridge, Alberta where one of their science projects received a bronze medal. As well, work continued on three other initiatives, with the welding program and the electrical construction and industrial program wrapping up in 2013:

- A provincial skills database of Mi'kmaq individuals and businesses to assist with tracking capacity and training to respond to the needs of the offshore oil and gas industry by allowing frontline workers to match people and businesses for individual hiring and contracting opportunities. A proposal was developed by Membertou Geomatics Solutions to create the required software.
- A welding program for the Mi'kmaw at the Nova Scotia Community College, with 16 students including one female participant. Classes began in February 2013 with training completed in the fall of 2013.
- An electrical construction and industrial program run by the Nova Scotia Community College with 12 students participating. Nine of the students (four females and five males) completed course work and graduated in June 2013.

Through 2013, Encana continued to monitor the progress with the Encana Native Council Opportunities Fund (ENCOF), a fund established to help off-reserve Aboriginal people in Nova

Scotia engage in employment and business opportunities related to the offshore oil and gas industry. During this final year of Encana's support, the focus for ENCOF was on tuition disbursements for technical schools and university studies. In 2013, 15 new individuals were approved for post-secondary training (including University, Nova Scotia Community College, Atlantic Petroleum Training College, Commercial Safety College, New Dawn College, Operating Engineers Training Institute and Maritime Environmental Training Institute) in fields related to the offshore oil and gas industry such as Bachelor of Arts – Aquatic Resources, Bachelor of Science – Marine Biology, Diploma of Engineering, natural resources environmental technology, welding, steamfitting/pipefitting, entry level floorhand, electrician apprenticeship, mobile crane operations, mechanical engineering technology, environmental health and safety and marine engineering. Over the five years of funding from Encana, a total of 67 students received support from ENCOF. Representatives of ENCOF continued to support careers fairs, and made presentations at Native Council zone meetings and other community gatherings to explain ENCOF and the educational opportunities that could be supported by it. ENCOF representatives continued to meet with potential employers and labour organizations of relevance to the offshore oil and gas industry to share employment information on students who have completed training and to discuss possible partnerships and employment requirements. ENCOF representatives also continued to meet with representatives of college and training organizations such as the Nova Scotia Community College, Survival Systems, the Atlantic Petroleum Training College, Pipe Trades College, Carpenter Millwrights Trade College (Electrical), Trucking Human Resource Sector Council and the Operating Engineers Training Institute to discuss entrance requirements and training programs offered. Career Industry Exploratories attended by ENCOF took place in Sydney, Dartmouth and Truro in May 2013 and Yarmouth in June 2013. Industries involved in these exploratories included: welding, steamfitting/pipefitting, electrical, earth moving & mobile crane, class 1 trucking, oil and gas skilled worker program, sheet metal and small business development. In September 2013, ENCOF participated in recruitment sessions in Dartmouth, Sydney and Bridgewater for welding and oil and gas skilled labour programs directed to Aboriginal students.

Also in December 2013, a representative of Encana attended the I Do Business regional summit in Truro, NS for Aboriginal entrepreneurs in Nova Scotia. The summit was supported by funding from Encana and included a presentation by the CEO of The Maritimes Energy Association. See <http://www.idobusiness.ca/atlantic-regional-summit.html>.

V.III Persons with Disabilities

In 2013, Encana continued to work with the Entrepreneurs with Disabilities Network (EDN). EDN promotes and facilitates entrepreneurship among persons with disabilities and has approximately 500 members across Nova Scotia. Encana's support in 2013 was directed to EDN's emerging entrepreneur award, the launch of EDN entrepreneurship workshops in Northeastern Nova Scotia (Antigonish, NS) and assistance with EDN's participation at Ability Starts Here, an annual provincial conference on inclusive education and employment for persons with disabilities. Encana also supported the attendance by an EDN staff member at the Oil and Gas 101 learning day hosted by The Maritimes Energy Association.

Encana also liaised with representatives of Easter Seals in Nova Scotia and the Canadian Paraplegic Association (Nova Scotia) to provide support for fundraising activities.

In December 2013, a representative of Encana attended the Ability Starts Here conference, participating in the workshops offered. See http://www.youtube.com/watch?v=ZF1u_1_QQvI.

In 2013, Encana continued to utilize the services of New Leaf Enterprises, a division of Easter Seals that works with adults with physical disabilities to develop job skills and to support employment opportunities. New Leaf coordinated the mail-out of the Deep Panuke newsletter.

V.IV Members of Visible Minorities

In 2013, Encana engaged with representatives of the Black Business Initiative (BBI), Immigrant Settlement and Integration Services (ISIS) and Imhotep Legacy Academy to support their programming and to share information on Deep Panuke.

Encana's work with ISIS included support for a team of students to participate in Junior Achievement's Company Program during the 2012-2013 school year, thus helping to foster entrepreneurial and business skills among immigrant youth.

Encana's support for Imhotep saw the program delivered at Saint Andrew Junior School in Antigonish, NS (students in Grades 6 to 8) and at Sir John Hugh Gillis Regional High School (students in Grade 9). The Imhotep program encourages youth of African Nova Scotian heritage to pursue careers in sciences, technology, engineering and mathematics, fields that are key to careers in the offshore petroleum industry in Nova Scotia and areas of study in which African Nova Scotian youth are under-represented.

As well, Encana's support for the SuperNOVA program at Dalhousie University in 2013 supported the delivery of summer science camps for students of African Nova Scotian heritage in three Nova Scotian communities as well as science workshops and clubs. SuperNOVA worked closely with existing community programs like Imhotep to recruit participants for the camps.

V.V Women

Encana recognizes that attracting more women to careers in sciences, trades, technology and engineering will help to increase their participation in the offshore oil and gas industry. To help achieve this goal, Encana engaged in several initiatives in 2013.

Funding from Encana for Techsploration's Women in Action web video series supported the addition of three new videos to the series in 2013. The videos are of the former President of ExxonMobil Canada, a Marine Survey Technician and a Mechanical Engineer. Techsploration encourages girls in Nova Scotia to consider educational paths in sciences, trades and technology that could lead to a career in the offshore oil and gas industry. The videos utilize a medium preferred by youth to convey career and educational information and can be viewed via www.youtube.com/techsploration. To directly assist with the delivery of Techsploration, an Encana engineer volunteered during 2013 as a program mentor for young women from Springhill Junior Senior High School.

As well, a female engineer with Encana attended the career retreat in June 2013 hosted by the Chair's office, Women in Science and Engineering (WISE) Atlantic Region program based at Mount Saint Vincent University. In the fall of 2013, Encana participated in planning with the Chair's office for a forum slated for March 2014 regarding attitudes toward STEM (science, technology, engineering and mathematics), which are key educational pathways for a career in the offshore oil and gas industry.

Encana also continued to support the programming offered by the Centre for Women in Business at Mount Saint Vincent University, sharing information on procurement for the offshore

oil and gas industry and inviting a Centre representative to the Oil and Gas 101 learning day hosted by The Maritimes Energy Association.

V.VI Diversity Training and Reporting

In 2013, new hires to Deep Panuke were required to participate in on-line Aboriginal Awareness Training offered by Encana.

Data from Encana's annual diversity survey of staff supporting Deep Panuke was the following:

Group	Responses received	
Aboriginal Peoples	*	*
Women	11	28%
Members of Visible Minorities	*	*
Persons with Disabilities	*	*
Total Survey Forms Issued = 39	(Please note individual survey forms may include response to more than one group. As well if responses numbered less than three for any group, it is marked with an asterisk to protect individual privacy).	

Data from Encana's contractors for 2013 with respect to diversity is reported as the following:

Group	Number of Positions
Aboriginal persons	5
Women	47
Members of Visible Minorities	2
Persons with Disabilities	*
TOTAL (January - December 2013)	54

VI. OSEA – Offshore Strategic Energy Agreement

VI.I Update on Activities

The OSEA signed between the Province of Nova Scotia and Encana in 2006 outlined certain commitments made by Encana with respect to specific industrial and employment opportunities for Nova Scotians resulting from the development of Deep Panuke. In 2010, Encana exceeded both the total OSEA commitment to 850,000 person hours of work for Nova Scotians and 1.35 million hours of work to be conducted in Nova Scotia.

From January 1 to December 31, 2013, 91,012 hours of work were conducted in Nova Scotia with 88,826 of these hours being Nova Scotia Person Hours on engineering, procurement and management activities, as described in the OSEA. From the commencement of the OSEA, 2,100,040 hours of work have been conducted in Nova Scotia on categories described in the OSEA, with 1,900,096 of these hours being Nova Scotia Person Hours.

In addition to the OSEA hours, additional Nova Scotia hours were recorded in 2013 for work activities such as logistics support for offshore hook-up and commissioning and the start up to

operations. During this period, 827,198 hours of work were conducted in Nova Scotia with 644,119 of these hours being Nova Scotia Person Hours.

VII. Education & Training/ Research & Development

In 2013, Encana continued to invest in research and development, education and training initiatives in Nova Scotia with a focus on advancing the development of the offshore oil and gas industry.

VII.I Deep Panuke Education & Training and Research & Development Fund (the Fund)

To December 31, 2013, Encana confirms spending of approximately \$8 million to date on education & training and research & development initiatives under the Fund.

VII.II Calls for Proposals

Thirteen submissions were received in response to the fourth call under the Fund. The call theme was environment for the offshore oil and gas industry. Five submissions were shortlisted for submission of full proposals. Subsequently, the proposal review committee recommended funding for four projects. The recommended projects were approved by the Canada-Nova Scotia Offshore Petroleum Board in the spring of 2013. Information on all Calls for Proposals under the Fund is posted on the Encana website at: <http://www.encana.com/communities/canada/atlantic/training-research-fund.html>.

VII.III Education & Training Funded Projects

The following updates are provided for selected education & training initiatives approved by the CNSOPB under the Fund:

- Graduate Offshore Surveyor Training

For the second consecutive year, Encana supported the placement of a new graduate from the marine geomatics program at the NSCC Lawrencetown campus with DOF Subsea, the subsea surveying contractor for Deep Panuke. The graduate was posted to the Atlantic Condor offshore supply vessel during the summer of 2013 while the survey was being conducted over the Deep Panuke natural gas export pipeline and other subsea assets. The work on the Condor provided the graduate with relevant, hands on experience conducting offshore surveys, an important monitoring activity for an offshore oil and gas field like Deep Panuke.

- Techsploration

Encana is supporting a three-year extension to the Women in Action web video series featuring women in fields where they are under-represented, in particular careers related to the offshore oil and gas industry. It is anticipated that three oil and gas industry careers will be added to the series each year over the three years of the commitment. In 2013, three new videos were added to the series, one of the former President of ExxonMobil Canada, a Marine Survey Technician and a Mechanical Engineer. By the end of December 2013, there were more than 120,000 views of the videos in the series, with the video of the Encana drilling engineer the most frequently viewed of all the videos. The videos are now available through Career Cruising (<http://public.careercruising.com/ca/en>), which has reach across Canada and the United States, and are being shared during school assemblies in Nova Scotia and elsewhere to large audiences of students. Also in 2013, an Encana engineer mentored a Techsploration school team from Springhill, NS, escorting them during a tour of Encana's offices and industry facilities

such as a site where survival training is conducted for offshore helicopter transport. The mentor also visited the students' school in Springhill to conduct a learning session with all students in grades 8-10, and participated in a Techsploration year-end conference where she met with approximately 55 young women in a round robin career session. To view the web video series, see www.techsploration.ca and click on the Women in Action Web Video Series, or visit the YouTube channel at www.youtube.com/techsploration.

- Imhotep Legacy Academy (ILA)

With support from Encana, this science and mathematics enrichment program for students of African Nova Scotian heritage expanded to Saint Andrew Junior School in Antigonish, NS. Imhotep encourages participants to consider careers in science, technology, engineering and mathematics fields (STEM), core fields for a career in the offshore oil and gas industry in Nova Scotia and fields in which African Nova Scotians are under-represented. During the 2012-13 school year, nine students in Grades 6 to 8 from Saint Andrew and Grade 9 at Dr. John Hugh Gillis High participated in the After-School program. Three of these students attended the African Nova Scotian Youth Engagement Conference in Halifax at Mount Saint Vincent University on March 25. In addition, seven other students were enrolled in the Virtual School tutoring program which offers daily online tutoring to African Nova Scotian students in grades 9-12 across Nova Scotia. One of these students also participated in a math and science tutoring workshop at Dalhousie University on May 4 which was organized by ILA's Virtual School. The Antigonish After-School program was led by three science students from St. Francis Xavier University.

- Youth Projects – Skills Canada-Nova Scotia

Encana supported Skills Youth Projects offered by Skills Canada-Nova Scotia at the Nova Scotia Community College (NSCC) to encourage high school students from across the province to consider a skilled trade or technology career – a key educational path for work in the offshore oil and gas industry. Participating students have the opportunity to work with a college instructor and a student mentor who is currently enrolled in a skilled trade or technology program at the college. In 2013, Encana supported five of the projects: TechShops at NSCC Lunenburg, NSCC Akerley (Dartmouth) and NSCC Lawrencetown campuses, and two Young Women's Conferences at NSCC Truro and NSCC Burrige (Yarmouth) campuses. At Lawrencetown, students engaged with instructors in the marine geomatics program and examined a career path in subsea surveying. A total of 275 students were introduced to skilled trade and technology careers and participated in a range of interactive and hands-on workshops through Encana's support of Skills Canada-Nova Scotia.

- Encana High School Scholarship

Funding from Deep Panuke supported seven Nova Scotia students to receive the scholarship beginning in the fall of 2013. Each of seven public school boards selected one graduating student to receive the \$2,500 annual scholarship renewable for up to four years. All seven students are expected to pursue studies in engineering at Nova Scotia universities. Since 2010, Encana has supported 29 Nova Scotia students pursuing post-secondary studies through the scholarship program. The majority of participating students are studying engineering at Nova Scotia universities.

- SuperNOVA

In 2013, SuperNOVA at Dalhousie University moved forward with planning for the third and final year of week-long science day camps in Halifax, Antigonish and Truro for students of African

Nova Scotian heritage. In addition, science outreach activities such as clubs and workshops took place with African Nova Scotian students in Dartmouth and Preston, NS. In total, 257 African Nova Scotia students participated in the camps and outreach activities. Many campers were recruited through the Imhotep Legacy Academy program, ensuring continuity for these students in science-technology-engineering-mathematics (STEM)-related activities throughout the year. Students of African heritage are under-represented in STEM fields. The SuperNOVA programming focuses on supporting students with demonstrated interest in STEM, which is a key area of study for careers in the offshore oil and gas industry.

VII.IV Other Education & Training

Encana actively supports local universities through the employment of students enrolled in co-op programs at Nova Scotian institutions. Since May 2007, 43 co-op placements have been offered by Encana, generally on a four-month term. To date, Encana co-op students have been enrolled at Acadia, Dalhousie and Mount Saint Vincent universities, as well as the Nova Scotia Community College, in engineering, commerce and public relations fields of study.

To share information on Encana and offshore careers, a representative of the Deep Panuke team participated in the Halifax Career Fair in September 2013. The fair is a well-attended recruitment event for students from Dalhousie, Saint Mary's and Mount Saint Vincent universities. As well, a representative of Encana attended the Halifax Regional School Board career fair in October 2013, providing information on careers in the offshore oil and gas industry.

In 2013, Encana distributed three Energy Information kits to educators. The kits include information on geology, careers in the offshore oil and gas industry and science education. Materials from the Atlantic Geoscience Society, the Canadian Centre for Energy, the Canadian Association of Petroleum Producers and the Petroleum Human Resources Council of Canada (now part of Enform) are included in the kit. In October 2013, Encana participated in the provincial science teachers' conference for Nova Scotia, providing information to educators on the Canadian energy map developed by Canadian Geographic Education in partnership with the Canadian Association of Petroleum Producers (CAPP). The map can be used by teachers as an energy education tool. See <http://energyiq.canadiangeographic.ca/>.

To support the development of staff at Deep Panuke, Encana funded training totaling \$42,413 from January 1 – December 31, 2013. Cumulative training now totals \$465,287.

In the area of education & training, in 2013 contractors reported 618 placements for training totaling \$310,917.

VII.V Research & Development Funded Projects

The following section provides an update on selected R&D projects approved under the Fund.

- Produced Water – Pro-Oceanus

A project led by Pro-Oceanus of Bridgewater, NS, including partners at the Centre for Offshore Oil, Gas and Energy Research (COOGER), to develop a new ultraviolet (UV) fluorometry system to track oil dispersion in the ocean. In 2013, the participants posted an article summarizing the research to the Pro-Oceanus website at <http://www.pro-oceanus.com/wp-content/uploads/2013/01/fluorescence-intensity-ratio-for-determining-efficiency-of-oil-dispersion.pdf>. Encana's support for the project has wrapped up.

- Safety Research at Saint Mary's University

The main focus for 2013 was the development of a set of safety culture metrics. Draft metrics were developed following literature reviews and stakeholder engagement activities in 2012. Feedback from steering group members (representatives of operating and contracting companies in Nova Scotia's offshore) suggested that the draft metrics developed were too complex for practical use in the field so the metrics were revised. A half-day training session was held in November 2013 to train industry stakeholders (operating, contracting, industry associations and regulators) in how to use the metrics. Workshop participants were invited to test the metrics in their organizations, with three companies now testing the metrics and providing feedback on their usability. In parallel to the development of the safety culture metrics, work progressed on the safety culture knowledge transfer aspect of the project. Building on the industry survey conducted in 2012, offshore managers (operating and contracting companies) were interviewed about safety culture including what information should be included in a safety culture guidance document. Based on the results of these interviews, a series of two-page safety culture 'articles' have been produced. These articles are designed to provide a quick summary for the main safety culture issues (e.g. assessment). These articles will be refined further based on steering group feedback.

- Integrated Bird Management at Offshore Installations

In 2013, researchers from Acadia University continued to progress the study investigating potential bird-platform interactions at Encana's Deep Panuke platform. During the winter they focused on data analysis and continued the development of new VHF receivers that will be used for bird tracking this year. In the spring of 2013 more than 100 birds, including sparrows, gulls and terns, were banded and had telemetry devices attached along the Eastern Shore of Nova Scotia and on Sable Island. These devices enable researchers to track bird movements during foraging trips and migration periods to identify potential interactions. To date, gull tracking has identified seasonal periods of bird associations with the platform and with supply vessels servicing the platform. Ipswich Sparrows were tracked from mainland Nova Scotia to determine the timing and routes of their migrations to Sable Island. Tern tracking will reveal the duration and direction of their foraging trips from nesting colonies on Sable Island. In November 2013, the following article was published by Bird Studies Canada describing the Blackpoll Warbler segment of the Acadia research. See <http://www.birdscanada.org/organization/newsarchive/11-15-13.html> The researchers share information on the study via a blog, which also assists with receiving reports of sightings of the tagged birds. See <http://sableislandgulls.wordpress.com/>.

- Beached Bird Survey on Sable Island

This long-term study of seabird oiling rates and generic identification of oil contamination found on bird plumage and/or on the beach at Sable Island provides information on background levels of oiling and possible sources. The research enables the offshore oil and gas industry to assess its potential impact on seabirds in the region, and to investigate any changes in oiling rates or oiling events that may be attributed to oil and gas activities. Results of the survey are included in Encana's annual Environmental Effects Monitoring reports which are posted to the CNSOPB website at <http://www.cnsopb.ns.ca/environment/environmental-assessments/public-registry/file-no-3000823>.

- Climate Technical Gear (formerly Helly Hansen Canada)

Progress continued with research to study clothing system improvements to provide added safety for offshore helicopter transport suit wearers. Four prototypes have been developed: Two summer weight and two winter weight. The technology uses moisture management techniques of water movement and water absorption to manage what happens to the ingress of water

inside the helicopter transport suit system (HPTSS). Initial in-water thermal manikin testing has been conducted at the CORD Group in Dartmouth, NS with various amounts of water leakage along with escape buoyancy tests using the HTS-1 HPTSS. Initial results show the summer weight clothing performed within acceptable limits. Thermal manikin testing on the winter weight clothing was conducted in the summer of 2013. Mathematical modeling shows the winter weight clothing systems should have performed better with simulated leakage, so in 2014 modeling will be refined as the project draws to a close. Funding for the research was awarded by Encana under the second call for proposals to researchers in Nova Scotia under the Deep Panuke Education & Training and R&D Fund. The theme for the call was offshore safety and risk.

VII.VI Other Research & Development

In 2013, Encana continued to provide funding and/or participation through a number of task forces and committees on safety and environmental issues linked to the offshore such as the Sable Island Stakeholder Committee and the Gully Advisory Committee.

Encana has continued to participate in several technical advisory groups from the Environmental Studies Research Fund and represents the Canadian Association of Petroleum Producers as part of the CNSOPB's SARA (Species at Risk) Working Group.

In addition, a representative of Encana attended a NSERC research connector in April 2013 to explain the process for funding research and development at Deep Panuke. Encana also supported the annual meeting of the Fishermen and Scientists Research Society, held in February 2013 in Truro, NS.

Reflecting the expertise on the Deep Panuke team, the senior environment coordinator co-wrote a paper on environmental assessment methodology that was presented in May 2013 at the Annual Meeting of the International Association for Impact Assessment. See: <http://www.iaia.org/conferences/iaia13/proceedings/Final%20papers%20review%20process%2013/Environmental%20Risk%20Assessment%20-%20Methodological%20Framework%20for%20Focused%20Environmental%20Assessment%200.pdf>.

VIII. Activity Forecast for 2014

The Encana team in Halifax will continue to manage and monitor production operations at Deep Panuke. Oversight of logistics services including helicopter transport, support vessels, ROV services and supply base will continue to support natural gas production operations. The Atlantic Condor continues to be the primary supply vessel in support of operations. The vessel's ROV spread will be utilized for the annual subsea asset integrity inspections, anticipated in Q2 and Q3 2014, and post storm surveys. As well, an in-line inspection of the Deep Panuke pipeline is anticipated to take place in 2014. The Atlantic Tern is the primary stand-by vessel for the field. Cougar Helicopters will continue to provide helicopter transport services averaging three to four flights per week in support of production operations at Deep Panuke.

SBM Nova Scotia Contractors Inc., based in Dartmouth, are responsible for the operation and maintenance of the PFC, including coordination of all field operations supporting the production operation.