

# CANADA-NOVA SCOTIA BENEFITS 2010 ANNUAL REPORT

Encana Corporation Halifax, Nova Scotia

March 31, 2011

# **TABLE OF CONTENTS**

			Page
I.	Executi	ve Summary	3
II.	Introduc II.I	ction Local Office	3
III.	Busines    .     .      .      .	Communication of Business Opportunities Stakeholder Communications Contracts Awarded Business Expenditures	5
IV.	Project IV.I IV.II	Employment 2010 Person Hours Update on Activities	8
V.	Disadva V.I V.II V.III V.IV V.V V.VI	Sharing Business and Employment Opportunities Aboriginal Liaison Persons with Disabilities Members of Visible Minorities Women Diversity Training and Reporting	10
VI	OSEA VI.I	Update on Activities	15
VII	Education VII.II VII.III VII.IV VII.V VII.VI VII.VI	Petroleum Research & Development Petroleum Research Atlantic Canada (PRAC) Deep Panuke Education & Training and Research & Development Fund Deep Panuke Education & Training and Research & Development Fund – R&D Call for Proposals Education & Training Funded Projects Other Education & Training Research & Development Funded Projects Other Research & Development	17
VIII	Activity VIII.I VIII.II VIII.IV VIII.V VIII.V	Forecast for January-June 2011 Project Management Element Element 1 – Drilling and Completions Element 2 – Subsea Element 3 – Export Pipeline Element 4 – Production Field Centre (PFC) Element 5 – Ready for Operations and Operations	27



# I. Executive Summary

In 2010, major milestones were achieved in preparation for first gas from Deep Panuke including:

- The drilling and completions program at the Deep Panuke field site, including the drilling of the disposal well and the re-entries of four previously drilled wells to prepare them for production utilizing the Rowan Gorilla III (RGIII) jack-up rig.
- Installation of subsea flowlines at the Deep Panuke site to connect the four production wells and the acid gas disposal well to the site of the Production Field Centre.
- The installation and trenching of three kilometres of onshore pipeline by Robert B. Somerville Co. Limited to connect the subsea export pipeline installed in 2009 with the Maritimes & Northeast Pipeline system.
- Ongoing construction of the PFC by Single Buoy Moorings Inc. (SBM).

The following report provides an overview of Encana's activities in Nova Scotia from January 1, 2010 until December 31, 2010.

Highlights of the report include:

- Total spending by Encana on Deep Panuke was \$305 million Canadian dollars.
- 1,177,802 person hours of work by Nova Scotians.
- 178,965 person hours of work by Canadians from other provinces.
- 1,379,654 person hours of work carried out within Nova Scotia.

# Person Hours (January-December 2010) & Cumulative Hours

	2010	CUMULATIVE	
CATEGORY BY RESIDENCE	PERSON HOURS	PERSON HOURS	
Nova Scotia Residents	1,177,802	2,110,120	
Canadian Residents from other provinces	178,965	329,249	

Note: Table above includes all Nova Scotian and all Canadian Person Hours for all elements of the project.

#### 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.

This report covers the period from January 1, 2010 to December 31, 2010.

Encana's Deep Panuke contracting opportunities are comprised of six key elements:

- Element 0 project management;
- Element 1 drilling and completions;
- Element 2 subsea;
- Element 3 export pipeline;
- Element 4 production field centre; and,
- Element 5 ready for operations and operations.

Reference is made in this report to the various project elements.

#### II.I Local Office

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

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

In addition to the Halifax office, Encana maintained a site office at Goldboro, NS to oversee onshore pipeline construction in the spring and summer of 2010. During the work program, field representatives based at this office provided liaison between the work site and the Deep Panuke project office at Founders Square in Halifax. In 2010, the onshore construction at Goldboro was led by Robert B. Somerville Co. Limited with that company establishing a site office alongside the Encana office in Goldboro. Both Encana and Somerville maintained the offices in Goldboro until mid-July 2010 following the completion of 22-inch onshore pipeline installation.

At Sheet Harbour, NS, a small yard for storing the Encana 22-inch diametre export pipe remained in place through the first five months of 2010. In May 2010, approximately 225 sections of the 12-metre long pipe were loaded out to Goldboro, NS for the onshore construction of the Deep Panuke export pipeline and the storage yard was demobilized. Also at Sheet Harbour, in April 2010 subsea contractor Subsea 7 (formerly Acergy) delivered 1,217 joints of eight-inch diameter pipe that form the flowlines at Deep Panuke. The pipe joints were loaded to the Acergy Falcon pipelay vessel at Sheet Harbour in the summer of 2010 for installation in the field.



Through 2010, Encana maintained an operational presence at the supply base operated in Dartmouth, NS in support of the drilling and completions program offshore. Surplus drilling materials remained stored at Goodwood, NS until mid-November 2010 when these remaining materials were transferred to Dartmouth, NS with the wrap up of the program and subsequent close out of Encana's space at Goodwood.

At December 31, 2010, the total complement of Encana employees and contract staff supporting the Deep Panuke project was 81 individuals, including personnel who, during the year, worked in Goldboro, NS, at Encana's office at the construction site in Abu Dhabi, an SBM project in offshore Brazil and an SBM project in offshore Angola.

During 2010, Encana PFC contractor SBM maintained its office in Halifax, and has been increasing its presence in Nova Scotia as the project gets closer to first production.

# III. Business Opportunities and Supplier Development

# III.I Communication of Business Opportunities

Throughout 2010, Encana shared its business opportunities at Deep Panuke with the local supply community utilizing recognized channels of distribution. Information regarding Expressions of Interest, Bidders' Lists and Contract Awards were included in postings to the Business Opportunities section of the Deep Panuke pages on the Encana website (<a href="www.encana.com/deeppanuke/business">www.encana.com/deeppanuke/business</a>), postings to the electronic bulletin board BIDS Nova Scotia, an email distribution list comprised of disadvantaged group representatives and newsletter distribution. For 2011, Encana is examining the use of social media, such as Twitter, to augment the ongoing channels of distribution of information regarding these business opportunities.

Encana's Deep Panuke business opportunities are also frequently reported through third party organizations. For example, information on Encana's Expressions of Interest (EOI), Requests for Proposal (RFP) and Contract Awards typically are posted the day of issue in the Offshore/Onshore Technologies Association of Nova Scotia (OTANS) Daily Bulletin to members. Media in Nova Scotia report on Encana business opportunities as well.

To help alert suppliers to business opportunities at Deep Panuke, Encana inserted a Procurement Update in four project newsletters in 2010 – March, June, September and December. The 2010 newsletters also included procurement opportunity information for three major Deep Panuke contractors: SBM, the owner and operator of the PFC for Encana; Subsea 7, the company contracted for subsea flowline installation; and, Tideway, the contractor for rock placement in three areas offshore at Deep Panuke. Approximately 6,000 hard copies of each edition of the newsletter are circulated as well as being posted to the Deep Panuke pages on the Encana website at <a href="https://www.encana.com/deeppanuke">www.encana.com/deeppanuke</a>. By December 1, 2010, there were 474 individuals registered to receive an e-copy of the newsletter.



As well, in October 2010, Encana updated the local supply community on Deep Panuke with a presentation made before more than 100 delegates at the annual CORE conference in Halifax.

In parallel to Encana's activities, contractors to Deep Panuke such as SBM, Subsea 7, Robert B. Somerville Co. Limited and Tideway released 34 Deep Panuke-related business opportunities to the local supply community in 2010 via the BIDS Nova Scotia portal. Distribution of opportunities via BIDS is often supplemented by listing of the opportunities in the OTANS Daily Bulletin circulated to OTANS members and media coverage.

#### **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 fully inform and involve them in the Deep Panuke project.

In 2010, Encana continued to liaise with stakeholders to share information on Deep Panuke. Methods of liaison in 2010 included face to face meetings, presentations and/or participation at conferences and workshops, an open house in Guysborough County prior to the start of 2010 work programs, phone calls, email notices, information mailings, print material distribution, media relations, participation and/or support of community events and regular website updates to <a href="https://www.encana.com/deeppanuke">www.encana.com/deeppanuke</a> (Deep Panuke pages).

During 2010, four project newsletters were distributed to provide stakeholders with updated information on Deep Panuke.

Each edition of the newsletter is:

- posted to the Deep Panuke pages on the Encana website at www.encana.com/deeppanuke;
- inserted in the weekly Guysborough Journal to help ensure circulation in Guysborough County;
- dropped by Canada Post to mailboxes in Guysborough County;
- distributed to representatives of local, provincial and federal government, fisheries organizations, environmental groups, suppliers and other diverse stakeholders on a large mailing list; and,
- distributed directly to participants 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 project procurement activities, community information and links to relevant web sites. In April 2010, an updated field centre rendering for Deep Panuke was added to the landing page at <a href="https://www.encana.com/deeppanuke">www.encana.com/deeppanuke</a>. Through 2010, there were more than 10,300 unique



visits to Deep Panuke web pages on the Encana website. The web pages recording the most visits during the period were those for the most current project newsletter, the Contact Deep Panuke page, the Business Opportunity page and the Community Information page. The Business Opportunity page is where Expressions of Interest, Bidders Lists and Contracts Awarded are posted.

The general project information email box (<a href="mailto:dpinfo@encana.com">dpinfo@encana.com</a>) is monitored on a daily basis. In 2010, queries were received in the mailbox from the general public, from contractors seeking business opportunities, from individuals seeking employment opportunities at Deep Panuke and from individuals or organizations requesting community sponsorships. In addition, members of the Deep Panuke team regularly respond to unsolicited inquiries about employment and business opportunities with the project.

In Q2 2010, a fourth construction supplement was produced for Deep Panuke describing major local project activities anticipated in the summer and fall of 2010 including the drilling and completions program, the installation of subsea flowlines, rock placement on the flowlines, sections of the gas export pipeline and at the PFC site for scour protection as well as onshore construction at Goldboro. The supplement was:

- posted to the Deep Panuke pages on the Encana website at www.encana.com/deeppanuke;
- inserted in the June 2010 edition of the Deep Panuke newsletter to broaden distribution; and
- regularly distributed at meetings, conferences and other events.

Subsequent amendments were made to the on-line version of the supplement at <a href="https://www.encana.com/deeppanuke">www.encana.com/deeppanuke</a> in Q3 2010 when the rock placement scope of work was transferred to 2011.

#### III.III Contract Awards

Among the contracts Encana awarded for Deep Panuke in 2010, included contracts related to the onshore construction at Goldboro, NS for the Deep Panuke export pipeline, contracts for the drilling and completions program and contracts to support the subsea program and offshore hookup in 2010 and 2011. Among the contracts awarded by Encana during the period were:

- DSV for Gauge Plate Recovery and Inspection Acergy Canada
- Contingency Vessel Atlantic Towing
- Seabed Hazard Survey Dominion Diving
- IT / Computer Services IMP Solutions
- Welding / Fabrication Mulgrave Machine Works
- Welding / Fabrication Marener Industries
- Installation of PFC Scour Protection Tideway BV
- Rental of Air Tuggers for PFC Hercules



#### **III.IV** Business Expenditures

The total expenditure for Deep Panuke during the period of January 1-December 31, 2010 was \$305 million Canadian.

# IV. Project Employment

#### IV.I 2010 Person Hours

Total Nova Scotia Person Hours from January 1 to December 31, 2010 for Deep Panuke were 1,177,802 and Other Canadian hours were 178,965 with 1,379,654 hours of work performed within the Province of Nova Scotia during the period.

The cumulative Nova Scotia Person Hours to date are recorded as 2,110,120. Total cumulative hours of work performed within the Province of Nova Scotia was 2,874,042.

# IV.II Update on Activities

Encana is fully committed to employing a competitive, open and fair recruitment process for Deep Panuke, with full and fair opportunity for Nova Scotians and all Canadians, and with first consideration to qualified Nova Scotians. Foreign workers will be hired when specialized knowledge or experience is required and when qualified Canadian workers are not available.

The Encana Project Management Team supporting the Deep Panuke was comprised of 81 individuals at the end of December 2010, including Encana contractors located in Abu Dhabi and at SBM facilities in offshore Brazil and Angola.

Significant Nova Scotia person hours were recorded through 2010 to support the construction of the offshore supply boat, project management, the drilling and completions program and onshore construction of the pipeline at Goldboro, NS.

In 2010, Encana advertised for four additional contract positions to support engineering, onshore construction of the gas export pipeline and business services. In Nova Scotia, the positions were advertised at <a href="https://www.careerbeacon.com">www.careerbeacon.com</a>, a well recognized website for local opportunities in the offshore oil and gas industry, in the Chronicle Herald and for positions affiliated with onshore work at Goldboro, NS, in the Guysborough Journal. As well, notices for the positions appeared on the Encana website at <a href="https://www.encana.com">www.encana.com</a>.

In the spring of 2010, Subsea 7 via subcontractor Reliance Offshore advertised for positions available to support the installation and trenching of the subsea flowlines at Deep Panuke. The advertisement appearing in the Chronicle Herald on June 12, in the OTANS Daily Bulletin on June 28 and was circulated to representatives of disadvantaged groups in Nova Scotia and other interested stakeholders via an edistribution list.



In January 2010, SBM advertised on <a href="www.careerbeacon.com">www.careerbeacon.com</a> for a senior engineering and a procurement position based in its Halifax office. Subsequently, in Q3 2010, SBM advertised in The Chronicle Herald, the Guysborough Journal and on <a href="www.careerbeacon.com">www.careerbeacon.com</a> for positions supporting operations at the Deep Panuke production field centre.

Since May 2007, 31 students have joined the Deep Panuke team, generally on a four-month basis, with seven of the 31 students participating in 2010. To date, students in the program 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.

# 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 the Deep Panuke project are:

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

Regular contact is maintained with groups and organizations representing the business, employment and educational/training interests of these groups include the Black Business Initiative, the Encana Native Council Opportunities Fund, Entrepreneurs with Disabilities, the Centre for Women in Business at Mount Saint Vincent University, the Mi'kmaq Rights Initiative and Immigrant Settlement and Integration Services or ISIS (formerly MISA).

During 2010, to directly share information on Deep Panuke contracting opportunities with disadvantaged groups, 43 opportunities were emailed by Encana via a distribution list to immediately alert key representatives of these groups to the issuing of an EOI, RFP or Contract Award by Encana or major project contractors such as SBM, Subsea 7, Tideway and Somerville.

The established process continued in 2010 to share employment opportunities at Deep Panuke with representatives of disadvantaged groups via fax and email distribution lists. During the period, Encana shared information on four Encana employment opportunities as well as employment opportunities on behalf of SBM and Reliance Offshore for Subsea 7.

To supplement direct notifications of business and employment opportunities, in 2010, Encana placed advertising in local publications focusing on disadvantaged groups. The



advertising directed readers to where the Deep Panuke business and employment opportunities are posted on the Encana website.

Per past practice, in 2010 Encana continued to support the four designated disadvantaged groups and their delivery of core programs and services to members by purchasing tickets for or donating items to be auctioned at fundraising events and activities, or donating goods or services to be used by the organization. Among the groups receiving support in 2010 were:

- Bonny Lea Farm
- Special Olympics (NS)
- LakeCity Woodworkers
- Camp Triumph
- Black Educators Association
- Ronald McDonald House
- IWK Foundation
- Alice Housing
- Canadian Cystic Fibrosis Foundation
- Regional Residential Services Society
- Deaf Youth Association
- Micmac Benevolent Society
- Special Olympics Nova Scotia
- Halifax Refugee Clinic
- Easter Seals
- Canadian Paraplegic Association

#### V.II Aboriginal Liaison

To facilitate the communication of business and employment opportunities at Deep Panuke to Mi'kmaq and Aboriginal stakeholders in 2010, Encana focused on participation in career fairs, workshops and face to face meetings.

Encana also monitored 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. Under the ENCOF in 2010, there were 19 individuals undertaking post-secondary training (including University, Nova Scotia Community College, Atlantic Petroleum College, Survival Systems Ltd.) in fields related to the offshore oil and gas industry such as power engineering and process operations, floorhand training, basic survival and fast rescue craft training, HVAC, electrical engineering technology, ironworking, drafting and aquatic resources. The Fund also supported "career exploratories" in 2010, allowing four individuals to job shadow in areas of work such as respiratory therapy (among the skills for offshore medics) and culinary arts (offshore catering). Job shadowing gives students opportunities to experience careers before making a commitment to formal programs of study. Encana also participated in ENCOF career fairs held in February and March 2010 in Truro, Sydney and Dartmouth, NS and



attended the Native Council Annual General Assembly in September 2010 where ENCOF representatives shared information with delegates on the educational support available under the fund. ENCOF coordinated four information sessions on the fund and two business sessions on offshore oil and gas in October and November 2010. The information sessions were held in Dartmouth, Sydney, Windsor and Yarmouth, NS with the business sessions held in Sydney and Dartmouth, NS. In November 2010, representatives of ENCOF attended an information session hosted by Reliance Offshore at the Mi'kmaq Friendship Centre in Halifax, NS to recruit Aboriginal candidates for upcoming offshore programs at Deep Panuke. As well, the Native Council profiled the work of ENCOF, and included information on the application process for educational grants from the Fund, in the March, June, September and December 2010 editions of the newsletter Taliaq.

Encana maintains regular contact with the Encana Mi'kmaq Liaison Advisor working with the Mi'kmaq Rights Initiative (MRI) on behalf of the Assembly of Mi'kmaq Chiefs, and continues to engage with this individual regarding Deep Panuke opportunities for the benefit of Mi'kmaq companies and individuals.

In 2010, Encana and the Assembly of Mi'kmaq Chiefs entered into a five-year agreement regarding education and training and related opportunities from the Deep Panuke project. The agreement has four main components: a Mi'kmaq Business Growth Initiative; a Mi'kmaq Developing Skills Initiative; a Mi'kmaq Research and Development Initiative; and, a Mi'kmaq Science, Culture and Technology Initiative.

The Mi'kmaq Business Growth Initiative is expected to create capacities for Mi'kmaq companies through mentorships with offshore companies, and will expand business opportunities via partnerships, joint ventures and capital investments. The Developing Skills Initiative will provide funding for Mi'kmag applicants to attend key training programs currently offered by oil and gas training institutions such as NSCC, Survival Systems and the Atlantic Petroleum Training College and will facilitate the Atlantic Towing Aboriginal Cadet Program (offshore supply boats) as well as facilitate training funds to assist the Mi'kmag in acquiring a major contract in the offshore catering sector. The Mi'kmag Research and Development Initiative will provide the basic financial support for the Mi'kmag to investigate the R&D sector as it relates to the oil and gas industry. The initiative also is expected to fund innovative Mi'kmaq research initiatives helping to create the foundation for a Mi'kmag R&D Centre of Excellence. The Mi'kmag Culture, Science and Technology Initiative is designed to support Mi'kmag high school students to consider careers in science and technology, key skill sets for work in the offshore oil and gas industry. The initiative is expected to include scholarship support and partnerships with universities and research associations to explore the interconnections between Mi'kmag culture/traditional knowledge and mainstream science.

Between April and June 2010, an Aboriginal Monitor from the MRI was on site to monitor excavation activities during onshore construction for the Deep Panuke pipeline at Goldboro, NS.



Building on meetings and dialogue held in 2009 between Reliance Offshore and Native Employment Officers from the 13 Nova Scotia Mi'kmaq bands, four Mi'kmaq individuals were recruited for the Subsea 7 program at Deep Panuke during the summer and early fall 2010.

In addition, to support Mi'kmaq and Aboriginal community development, Encana supported and/or participated in several initiatives in 2010 including:

- National Aboriginal Day at the Glooscap Heritage Centre in Truro, NS on June 21, 2010 – Encana attended the activities and events.
- Youth ARISES Conference in February 2010 Conference for discussion of Species at Risk for 30 participating Aboriginal youth, see <a href="http://www.mapcmaars.ca/theblog/">http://www.mapcmaars.ca/theblog/</a>.
- Participation by Aboriginal people in the Bluenose Coastal Action Foundation's Species at Risk Stewardship Workshop in Wolfville, NS in February 2010.

#### **V.III** Persons with Disabilities

During 2010, Encana continued to work closely with the Entrepreneurs with Disabilities Network (EDN). EDN promotes and facilitates entrepreneurship among people with disabilities and has approximately 500 members across Nova Scotia.

Encana's support in 2010 of the EDN Small Business Week and Global Entrepreneurship Week events enabled EDN to directly work with more than 75 entrepreneurs and aspiring entrepreneurs in six communities over a six-week period. Encana's support also enabled EDN to attract more than 20 new professionals living in those communities to volunteer their time for EDN members.

In March 2010, an Encana representative attended the Direction's 2010 Employment Conference for persons with disabilities to share information on the offshore oil and gas industry with delegates.

In December 2010, members of the Deep Panuke team attended the 3<sup>rd</sup> Annual Symposium on Inclusive Employment and Education in Halifax. Information on the Deep Panuke project and careers in the offshore oil and gas industry, including educational pathways to careers in the industry, was provided to attendees of the event via Encana participation in the accompanying trade show. See <a href="https://www.idpd.ca">www.idpd.ca</a>

Encana continued to utilize the services of New Leaf Enterprises, a division of Easter Seals Nova Scotia, to coordinate the mail-out of the four quarterly Deep Panuke project newsletters distributed in 2010.

#### **V.IV** Members of Visible Minorities

In 2010, Encana supported activities of several organizations representing visible minorities in Nova Scotia, by providing presentations on Deep Panuke employment and



business opportunities and participating in business events aimed at explaining careers and business opportunities in the offshore oil and gas industry.

Among the organizations that Encana has worked with in 2010 are the Black Business Initiative, the Black Educators Association, Imhotep Academy and ISIS.

Encana was one of the first participants in a Vendor Fair and Networking Session held as part of the activities during the Black Business Summit in June 2010. The fair and networking session provided opportunities to share information on the offshore oil and gas industry, educational paths to participate in the industry and related career opportunities. Encana also participated in the ISIS International Business and Trade Show in May 2010 to share similar information with attendees.

Encana worked with ISIS in 2010 to identify new Canadians with applicable backgrounds in engineering and sciences to develop a pool of candidates who could be mentored during development and operations at Deep Panuke.

In the fall of 2010, Encana partnered with ISIS and Junior Achievement in Nova Scotia to launch a program for visible minority students who are the children of ISIS clients. In the Encana-sponsored program, the students established their own business to make and market re-useable shopping bags, each with a unique design reflecting the students' diversity: <a href="http://www.facebook.com/posted.php?id=205405132156&start=10">http://www.facebook.com/posted.php?id=205405132156&start=10</a> The program ran from September 2010 until March 2011.

In November 2010, Encana supported the launch of the new ISIS Business Directory, profiling businesses owned by new Canadians. Copies of the directory were subsequently circulated by Encana to representatives of Single Buoy Moorings, Cougar Helicopters and Subsea 7.

Also in November 2010, Encana supported the participation of an ISIS client to attend the Oil and Gas 101 program offered by OTANS (Offshore/Onshore Technologies Association of Nova Scotia). The program offers an introduction to the offshore oil and gas industry for a business audience.

A major initiative supported by Encana in 2010 is the expansion of a program to encourage African Nova Scotian youth to pursue training in sciences, trades and technology, skills 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. The initiative is part of the expansion of the Imhotep Academy to African Nova Scotian students in Antigonish County at Saint Andrew Junior High School. An official launch of the program was set for Q1 2011. See <a href="http://imhotep.dal.ca/">http://imhotep.dal.ca/</a>

Other support in 2010 included:

• Funding for African Nova Scotian youth to attend the Black Business Summit, The Race to Business Success, hosted by the Black Business Initiative.



- Funding for the Black Educators Association Bursary Fund, to be directed to students pursuing post secondary studies in sciences.
- Funding for an African Nova Scotian youth from Guysborough County to attend a leadership camp, <a href="http://catapultcamp.com/">http://catapultcamp.com/</a>.

#### V.V Women

In 2010, Encana continued to work with the Centre for Women in Business at Mount Saint Vincent University to assist in developing awareness of opportunities in the offshore oil and gas industry among the female entrepreneurs associated with the Centre. Further, Encana committed to providing financial support to the Centre for Women in Business for a supplier diversity conference scheduled for Q1 2011. The conference is to include an overview presentation by Encana on the procurement process for offshore oil and gas projects and a presentation by WEConnect Canada on certification for women-owned businesses. See <a href="http://weconnectcanada.org/home.html">http://weconnectcanada.org/home.html</a>

As well, a representative of the Centre was invited to participate courtesy of Encana in the Oil and Gas 101 program hosted by OTANS in November 2010. The program is aimed at introducing the offshore oil and gas industry to a business audience.

Recognizing that attracting more women to careers in sciences, trades and technology will help to increase their participation in the offshore oil and gas industry, Encana provided funding in 2010 to a new bursary fund at the Nova Scotia Community College (NSCC) aimed at supporting female students interested in trades and technology careers. The NSCC Bread and Roses Fund supports students at College campuses across the province. See <a href="http://www.nscc.ca/About NSCC/NSCC Foundation/Scholarships And Bursaries/Desc riptions.asp">http://www.nscc.ca/About NSCC/NSCC Foundation/Scholarships And Bursaries/Desc riptions.asp</a>

In 2010, development was under way for 12 additional web videos, developed with Encana's support by the Techsploration program. 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 profile women in sciences, trades and technology careers, utilizing a medium preferred by youth today to convey career and educational information. Among the videos under development in 2010 was a testimonial from a female Encana offshore logistics engineer. The video is expected to be ready for posting online in early 2011. Encana is providing three years of funding to support the web video project.

In 2010, Encana also discussed opportunities with the Advisory Council on the Status of Women (Nova Scotia).

During engagement with representatives of women's organizations, Encana focuses on business and careers opportunities in the offshore oil and gas industry, particularly employment for women in non-traditional fields such as engineering, technology and skilled trades.



# V.VI Diversity Training and Reporting

Encana conducts an annual, voluntary diversity survey of its workforce supporting the Deep Panuke natural gas project. The third annual survey was conducted in the fall of 2010.

The combined results of the survey, and results from self-identification survey forms collected at the time of hire, are the following:

Aboriginal Peoples	2	1%
Women	35	26%
Members of visible minorities	7	5%
Persons with disabilities	1	1%
None of the Categories are applicable	72	53%
No Response	18	13%
Total Forms Issued November 2010	135	100%

In 2010, Encana continued to require new hires to Deep Panuke to receive mandatory Aboriginal Awareness Training. The training was conducted by the in-house Aboriginal and Community Liaison Advisor for Deep Panuke, and is based on on-line training developed by Encana.

Data from Encana's contractors for 2010 with respect to diversity is reported as the following:

Disadvantaged Group	Number of Positions	Hours Worked (Reported as Lump Sum)	
Aboriginal peoples	8		
Persons with disabilities	•	7	
Members of visible minorities	13		
Women	67		
TOTAL (January-December 2010)	88	49,932	

#### VI. OSEA

# VI.I Update on Activities

During 2010, progress was made on the Offshore Strategic Energy Agreement (OSEA) commitments with the Province of Nova Scotia. During 2010, Encana exceeded both the OSEA commitment to 850,000 person hours of work for Nova Scotians and in Q3 2010, the OSEA commitment to 1.35 million hours of work to be conducted in Nova Scotia during the development phase.

In 2010, 781,206 hours of work were conducted in Nova Scotia with 739,445 of these hours being Nova Scotia Person Hours. From the commencement of the OSEA,



1,684,337 hours of work have been conducted in Nova Scotia with 1,507,601 of these hours being Nova Scotia Person Hours.

In addition to the OSEA hours, significant Nova Scotia hours were recorded in 2010 for activities such as the drilling and completions program and onshore pipeline construction. In 2010, 598,448 hours of work were conducted in Nova Scotia with 438,357 of these hours being Nova Scotia Person Hours.

Activities on the following OSEA commitments were completed in 2009, thus updates on these activities are not provided in 2010 reporting: subsea protection structures and export pipeline coating.

• Engineering, Procurement and Management Activities

Encana's office in Halifax continues to be the centre of project management activity for Deep Panuke, as well as engineering and procurement management.

#### Flare Tower

Welding and outfitting of the flare tower was completed in January 2010 with load-out from Pictou in early February 2010. The tower was shipped in two sections, each approximately 50 metres in length, for transport to Abu Dhabi where the tower was integrated with the PFC in Q1 2011.

# • Offshore Supply Vessel

The Platform Supply Vessel is being built by Irving Shipbuilding in Halifax for Atlantic Towing. By the end of 2010, the vessel was nearing completion to come under hire to Encana in early 2011.

Atlantic Towing will operate the new vessel on long term contract with Encana during the operations phase of Deep Panuke.

# • Onshore Drilling Rig Program

As part of Encana's OSEA commitments, Encana agreed to facilitate the development of the capability of an onshore drilling rig manufacturing operation in Nova Scotia.

In 2010, Encana engaged in dialogue with Nabors Canada and Laurentian Fabricators at Sydport, NS regarding a resumption of work under the program. Work at the Laurentian site on two land rigs for Nabors Canada had been suspended in 2009 due to a downturn in drilling activity in Western Canada. Encana subsequently provided \$1.2 million to the program in 2010 to assist in the completion of the rigs. To December 31, 2010, Encana has provided approximately \$3.5 million in funding to support the Onshore Drilling Rig Program.



# VII. Education & Training/ Research and Development

During 2010, 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 Petroleum Research Atlantic Canada (PRAC)

PRAC is a regional industry-funded, not-for-profit R&D management organization. Encana is a founding member. Encana contributed \$90,000 to PRAC's core operations for 2010.

PRAC was selected by Encana to manage the Deep Panuke annual Call for Proposals and to assist with the management of the Deep Panuke Education & Training and Research & Development Fund (the Fund), particularly the Research & Development aspects.

In late 2010, PRAC announced it would be closing its operations in Nova Scotia. As a result, Encana is determining the process for future Calls for Proposals from the Fund.

# VII.II Deep Panuke Education & Training and Research & Development Fund

Encana confirms spending of approximately \$3.5 million to date on education & training and research & development projects under the Fund.

# VII.III Deep Panuke Education & Training and Research & Development Fund – R&D Call for Proposals

The first Call for Proposals under the Deep Panuke R&D E&T Fund, on the theme of Engineering, was completed in 2010. Petroleum Research Atlantic Canada (PRAC) administered the call on behalf of Encana.

A total of 26 Letters of Intent (LOIs) were received under the call, covering a broad range of disciplines including chemistry, mathematics, geology and environment. LOIs were received from university and private sector applicants.

A Proposal Evaluation Committee (PEC) was formed including individuals with offshore oil and gas industry, project management, regulatory and government experience to review the LOIs. The PEC recommended that seven LOIs be shortlisted, and five of the seven were subsequently approved for funding. In September 2010, Encana was advised that one of the recipients had declined the funds, leaving four funded projects at the end of 2010 valued at \$522,033.

In November 2010, Encana launched the second Call for Proposals under the Fund. PRAC administered the launch with LOIs due on December 3, 2010. A total of 15 LOIs were received from university and private sector researchers in Nova Scotia. In January



2011, the PEC for the call will shortlist the proposals with selected applicants invited to submit full proposals. Awards under the call are expected to be made in the spring of 2011.

Information on the R&D Call for Proposals is posted on the Encana website at <a href="http://www.encana.com/operations/canada/deeppanuke/community/training-research-fund.html">http://www.encana.com/operations/canada/deeppanuke/community/training-research-fund.html</a>

# **VII.IV Education & Training Funded Projects**

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

# Techsploration

Encana continued to provide core funding support for the Techsploration program that encourages young girls in Nova Scotia to consider careers in sciences, trades and technology - skills that are key to a career in the offshore oil and gas industry. Because of support from Encana, in 2010 Techsploration was in the second year of an expansion of its learning materials via the development of web testimonials by women in nontraditional careers. The video series is a web-based library of up-close, personal interviews with women who are working in science, trade or technology fields. In 2010, production was under way on 12 new testimonials, including a profile of a female Encana offshore logistics engineer. The first set of eight testimonials was posted to YouTube in Q4 2009 and released via the Techsploration website on January 14, 2010. The video project was profiled at three major Techsploration conferences in the spring of 2010 to ensure that students, teachers, parents and guests are aware of this valuable resource. To date, the videos have received 8,464 hits. Also in 2010, Techsploration initiated the development process for a new portal to host the videos and other Techsploration materials. The portal is expected to be operational in 2011. Work was also under way in 2010 to identify potential role models to be profiled in the third and final year of the web video project. To view the videos, please visit the website at www.techsploration.ca and click on the link for the Women in Action Web Video series.

#### Regional Science Fairs

In 2010, Encana provided support for three regional science fairs in Nova Scotia: Strait, Halifax and the Mi'kmaq fair, as well as the Nova Scotia Science Fair Showcase, a gathering of regional science fair winners from across the province. Regional science fairs bring together winning science projects, typically from schools across an entire school board. Successful projects from a regional science fair graduate to national competition at the Canada-Wide Science Fair. Encana also provides a Youth Science Award annually to a regional science fair student from Nova Scotia as selected by his or her peers at the annual science fair showcase. The award for 2010 was presented to the student at the Discovery Centre's annual Discovery Awards in November 2010. Encana supports science fairs as a means to encourage science, technology and engineering-minded students in Nova Scotia to continue their studies at the post-



secondary level. Studies in these areas are among those that are key to career opportunities in the offshore oil and gas industry.

#### Skills InDemand

Encana supported Skills InDemand projects at eight campuses of the Nova Scotia Community College in the 2010-2011 school year to encourage youth to consider a skilled trades career, a key educational path for work in the offshore oil and gas industry. Each project is a full day of interactivity, applied learning and work with a mentor from a skilled trade. At the six TechShop events supported by Encana in 2010/2011, held at the Lunenburg, Cumberland, Akerley, Marconi, Truro and Pictou campuses, a total of 294 students from five school boards participated. Encana's support also was directed in 2010 to a Young Women's Conference at the NSCC Burridge campus in Yarmouth, NS, where 37 Grade 9 girls from the TriCounty School Board were exposed to non-traditional career paths such as welding, and an African Nova Scotia Youth Conference at the NSCC Kingstec campus in Kentville, NS where 29 participants explored options in skilled trades.

# Encana High School Scholarship

The scholarship program was launched in February 2010 with information mailings sent to all high schools in Nova Scotia, regional school boards, and relevant educational associations/organizations. All eight public school boards participated in the program, with each board selecting one graduating student to receive the \$2,500 annual scholarship renewable for up to four years. Of the eight students selected by the school boards, seven are pursuing university level studies in engineering and one is pursuing university level studies in geology. In the fall of 2010, an email notification was sent to the same stakeholders regarding the application process for the 2011 scholarships.

# SuperNOVA

SuperNOVA at Dalhousie University has worked directly with First Nations communities to provide Mi'kmaq youth with meaningful interactions in science, engineering and technology. Encana's support for the SuperNOVA outreach program in 2010 assisted directly in the delivery of a week-long science day camp for Mi'kmaq youth at Millbrook First Nation in Nova Scotia in July 2010. In addition to hands-on engineering and science activities, the organizers worked to engage Elders in the community to bridge the importance of these areas with traditional knowledge. Moving forward, with the support of Encana, SuperNOVA expects to focus on developing a science camp for African Nova Scotian students. Further development of this new initiative is expected in 2011.

# Math-On Olympiad

The Olympiad is an annual math competition aimed at encouraging the exploration of mathematics by students at the junior high school level in Nova Scotia. To date, schools



from the Halifax Regional School Board and from Cape Breton have participated. Funding from Encana in 2010 was provided to support the development of an educational video aimed at sharing how to host a successful Math-On event, such that other schools across the province can participate. Production of the video was completed in 2010 and the video has subsequently been posted to YouTube to assist with dissemination. See <a href="http://www.youtube.com/watch?v=MawikPFBb34">http://www.youtube.com/watch?v=MawikPFBb34</a> Support also was provided for the development of new problem sets for Math-On events. In October 2010, members of Math-On attended the provincial math teachers conference to share information on the program and to recruit new schools to participate. Mathematical aptitude is a core skill for work in the offshore oil and gas industry.

# Energy for Students (EFS)

Energy for Students is an educational program that shares energy-related information, particularly information about the offshore oil and gas industry, to educators and students in Nova Scotia. The goal is to inform program participants of careers in the industry, and the educational pathways required for those careers. In 2010, the EFS program was presented to 271 teachers and 247 students. The program includes presentations on the oil & gas industry, break-out sessions with representatives from the industry and tours of relevant operations supporting or associated with the industry such as a helicopter dunking simulator, offshore supply base and oil refineries. During 2010, presentations took place at Bicentennial School in Dartmouth, NS, Northumberland Regional High School in Alma, NS, Citadel High School in Halifax, NS, Five Bridges Junior High School, Upper Tantallon, NS and the province-wide professional development day conference for the Association of Science Teachers, Halifax, NS. As well, representatives of EFS attended a Skills Canada-Nova Scotia event at the NSCC Akerley campus and a workshop was held in Dartmouth, NS for instructors in the Options and Opportunities (O2) program. In addition to presentations. Encana's support for the EFS program includes the distribution of a monthly newsletter about energy-related topics, featuring news about the offshore oil and gas industry. In 2010, ten newsletters were distributed monthly to 791 recipients. In December 2010, with Encana's support, the EFS website saw many upgrades including updates to the oil & gas information and inclusion of several new educational and industry links for teachers and students. The site had approximately 21,400 visitors in 2010.

# The Discovery Centre – Science on the Road Program

The Science on the Road (SOTR) program is a science-oriented outreach program aimed at enriching science education for elementary school students across Nova Scotia through in-school demonstrations and hands-on workshops. From January to December 2010, SOTR reached more than 24,631 educational contacts in Nova Scotia at 78 schools across seven public school boards. SOTR is tied to science curriculum for the Province of Nova Scotia, and is offered in both French and English. In 2010 the number of schools reached increased by 11 per cent over the same time period last year. There was also a 17 per cent increase in total number of educational contacts who participated in SOTR over last year. Two new staff members were hired to execute the



program. They are trained science educators and communicators and are also bilingual. Between January and December 2010, 22 new schools were visited by the program. As well, in September 2010, Discovery Centre launched SOTR workshops for students in Primary, Grade 1, and Grade 2. The workshops have been successful at meeting the needs of the youngest elementary school students — a group that had been previously underserviced by SOTR. The workshops, like those developed for older students, are all connected to the grade-level curriculum.

# Scientists and Innovators in Schools (SITS)

SITS is a science promotion program administered by the Atlantic Science Links Association, a not-for-profit organization dedicated to nurturing relationships between educators and scientists, technology, engineering and mathematics communities in Nova Scotia. SITS seeks to inspire Nova Scotia students when they are developing key attitudes towards science and technology, and are beginning to think about careers in these fields. From January through December 2010, with Encana's support, SITS volunteers delivered 129 presentations in classrooms across the province. They also judged science fairs, mentored students, and shared their scientific expertise with teachers. Approximately 3430 students were provided with the opportunity to make connections between what they learn in the classroom and the work and research being done by scientists in Nova Scotia. SITS reports that teacher feedback has been positive regarding the program. In the 2009-2010 school year, 35% of teachers with participating classes completed and returned evaluation/feedback forms, rating the program an average of 4.9 out of 5.

# • Ducks Unlimited - Project Webfoot

In recognition of the impacts to wetlands in Guysborough County from the construction of the onshore pipeline for the Deep Panuke project, Encana has been a Nova Scotia supporter since 2007 of the Project Webfoot program delivered by Ducks Unlimited Canada. Project Webfoot is science educational program that aims to communicate the value of wetlands to elementary school-aged children. In the 2010/2011 school year (September 2010-June 2011), Encana funding helped to support programming and field trips for 16 classes representing 374 students at 10 schools in Guysborough, Antigonish and Halifax counties. With Encana's support, in 2010 a new field trip location was established at Dagger Woods Marsh near Antigonish, NS for schools in Northeastern Nova Scotia, The establishment of the field trip site will allow participating classes to benefit from the complete Project Webfoot program. As well, funding from Encana in 2010 assisted Ducks Unlimited to present learning materials from Project Webfoot to all branches of the Eastern Counties Regional Library serving Guysborough, Inverness and Richmond counties in northeastern Nova Scotia.

# Robotics Programming – Acadia University

Support for robotics programming that encourages engineering-minded students to participate in competitions at the junior and senior high school level. In November 2010,



the Nova Scotia Community College (NSCC) hosted five qualifying competitions for the junior high teams at NSCC campuses across the province. A total of 300 students from 39 junior and senior high schools registered for the competitions at Acadia University on January 29, 2011. The competitions provided an opportunity for students to see a robot from ABB Robotics, a major producer of robots for manufacture, and to interact with NovaLUG (an adult LEGO users group). For more information on the competitions, visit <a href="http://cs.acadiau.ca/rpc">http://cs.acadiau.ca/rpc</a>

#### OTANS Oil and Gas 101

The introductory course to the offshore oil and gas industry took place on November 19, 2010, supported by the Nova Scotia Community College, the Nova Scotia Department of Energy and Encana. It is an annual event organized by OTANS that invites participants to learn from industry experts in their respective fields, teaching from experience, not from textbooks. More than 30 people attended representing a wide range of organizations including suppliers, government and students. Topics covered at the course included: regulatory; geology & geophysics; the history of offshore drilling; offshore exploration and drilling; an overview of the petroleum industry onshore: past, present and future; project economics; producing hydrocarbons and life offshore; and, emergency response training.

#### VII.V Other Education & Training

Through 2010, Encana continued its focus on supporting initiatives and programs that encourage Nova Scotia youth to consider careers in science, trades and technology, the educational pathways of key relevance to the offshore oil and gas industry.

To help educators better understand the offshore oil and gas industry and the careers open to students in the industry, Encana has developed an Energy Information Kit that includes publications from the Petroleum Human Resources Council of Canada, the Atlantic Geoscience Society (AGS), the Canadian Association of Petroleum Producers and the Canadian Centre for Energy. In 2010, Encana distributed 69 of the packages to teachers in Nova Scotia, largely in response to educator interest expressed at career fairs and educator professional development events attended by representatives of Encana such as the Association of Science Teachers conference in October 2010 at Halifax West High School.

Among the materials in the kit is the AGS video "Halifax Harbour: A Geological Journey," which chronicles the geological and human history of Halifax Harbour. Purchase of the video by Encana for the kit will enable the AGS Video Committee to produce further educational material in support of the video, including a list of resources and, ultimately, a teacher's guide.

Encana supported students from disadvantaged communities (visible minorities and women) interested in pursuing careers in sciences, trades and technology by providing



funding for the Black Educators Association bursary fund and the Nova Scotia Community College Foundation Fund, Bread and Roses Bursary, for female students.

Students receiving support from the Black Educators Association bursary fund have pursued studies in undergraduate sciences and engineering.

Students receiving Bread and Roses bursaries have pursued studies in trades and technology fields such as electronic engineering technology, environmental engineering technology (water resources), geographic sciences, marine navigation and welding.

Contractors to Encana's Deep Panuke project are required to submit on a quarterly basis a report summarizing their investments in education & training and research & development.

In the area of education & training, for 2010, contractors reported 93 positions totaling \$55,207 for the following:

- Overhead crane safety training
- Subsea Training
- Surface Well Test Training
- Pipe Plasma Burning
- Hardwire Welding
- Magnetic Crane Training
- Blueprint Training
- Steel Cutting with New Saw Training
- JRCC Role in Rescue At Sea
- Banksman/rigger Training
- Well Control Training
- Online Well Control Training
- Marine Oil Spill Response Training
- Dynamic Positioning (Technical)
- A 60 day, unpaid work placement of a Marine Institute cadet to participate in phase one of three of the Nautical Science Sea program.

# VII.VI Research & Development Funded Projects

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

#### Oil and Gas Case Studies

Dr. Conor Vibert, a Business Faculty Member at Acadia University, has developed a series of case studies examining the business of the offshore oil and gas industry in Nova Scotia. These five cases profile various companies working in this industry in NS: Black & McDonald, Jasco Research, Maritimes & Northeast Pipeline, Secunda Marine Services and Survival Systems Training.



The case studies were completed in 2010. This year they were used in the Fred C. Manning School of Business at Acadia. Negotiations are now underway with other academic institutions, such as NSCC, to have this collection adopted for use in the classroom starting in the Fall of 2011.

#### Produced Water

Examination by researchers at Dalhousie University of chemical-free electrocoagulation (EC) technology with proven success in treating wastewater discharge, and adapting that EC technology to separate and remove dissolved hydrocarbons from producer water streams.

#### Salt Chair

At Dalhousie University, the recruitment process continues for the complex salts chair supported by the Fund. An initial search was not successful. A second search process was to be initiated in early 2011.

# Scotian Shelf High Resolution Sea State Forecasting System

AMEC Earth and Environmental is leading the development of this system which should lead to more accurate sea state forecasting for shallow water areas offshore Nova Scotia where oil and gas exploration and production activity is taking place. The system incorporates data from four sources: WaveWatchIII (a large scale sea state model); SWAN (Simulating Waves Nearshore - a high resolution, shallow water wave model); Global Forecasting System (a numerical weather prediction model); and, Global Environmental Multiscale model (a numerical weather prediction model). AMEC operates a cluster of 21 servers (total of 84 cores) to implement the forecasting system. Substantial effort has been expended on software adaptation to these parallel-processing hardware resources. The system, which provides much more detailed predictions than were previously possible, was used during the latter half of 2010 to support the Deep Panuke drilling and completions program. The system allowed AMEC to predict with more accuracy the complex sea state conditions in the vicinity of Sable Island. While additional work is now required to make the system fully operational, AMEC plans to utilize the developed technology to support the next evolution of the SmartBay project, to support emergency response activities along Canada's coastlines, and to improve the ability to support construction projects in the coastal zones of Atlantic Canada.

 A Functional Test Analysis of Lifeboat/BA (Breathing Apparatus) Integration Skills

Survival Systems Training Ltd. completed the Functional Task Analysis of Lifeboat/BA Integration Evacuation Skills in the second quarter of 2010. Subsequently the final report on the analysis was posted to the Survival System



web site where it can be viewed at http://www.sstl.com/pages/research and development.html

As well, an Encana safety advisor provided an overview of the study as a member of the R&D panel at the annual CORE conference in Halifax in October 2010. In addition, in the fall of 2010 the study was being prepared for submission to the journal Occupational Ergonomics.

# Coastal Island Bird Surveys – Maritime Breeding Bird Atlas

The Atlas has the goal of determining the distribution, abundance and status of all bird species breeding in Nova Scotia, New Brunswick and Prince Edward Island. The information gathered by over 1,000 Atlas volunteers will be compared to that collected during the first Breeding Bird Atlas (1986-1990) to examine changes in species abundance and distribution, and will be used to set conservation priorities and objectives for the next 20 years. As there is very little data for coastal and island-nesting birds, this project utilized volunteer and staff surveys of coastal islands and inaccessible coastline in Nova Scotia using Breeding Bird Atlas methods. The goal of these surveys was to determine the distribution and abundance of breeding birds in these hard-to-access regions and to document this information in the final Atlas publication and online database. The database will facilitate the development of environmental impact assessments by offshore oil and gas industry explorers and operators working offshore Nova Scotia. In May and June 2010, Nova Scotia coastal and island areas measuring 10 kilometres by 10 kilometres were prioritized for data collection. Surveys were subsequently conducted in six focused areas:

- 1. Big Tancook, Little Tancook and Rafuse Islands
- 2. Lockeport (including Western Head, Blue Island, Sugarloaf Island, Douglas Island, Jenkins Island, Round Island, Fox Island, Green Harbour and Jordan Bay)
- 3. Pearl Island
- 4. Tangier, Tangier Harbour and nearby coastal islands
- 5. Tor Bay, Sugar Harbour Islands, Whitehead and nearby coastal islands, Harbour Islands and other islands near East Quoddy, Harrigan Cove
- 6. St. Paul Island

Among the findings and activities: A small Bank Swallow colony located on Big Tancook Island (Bank swallows are declining so documenting all colonies in the Maritimes is important information); during six days of surveys in June 2010, the Grey-cheeked Thrush, thought until now only to occur further northward in Newfoundland, were recorded from four islands in area 5 described above (see <a href="http://www.bsc-eoc.org/organization/newsarchive/7-09-10.html">http://www.bsc-eoc.org/organization/newsarchive/7-09-10.html</a>); and, survey of St. Paul Island during the Canada Day weekend 2010, with goal to determine if Grey-cheeked Thrush also bred on this island off the northeastern tip of Cape Breton in the Cabot Strait. The survey, which did not identify any Grey-cheeked Thrush, is described at <a href="http://www.mba-aom.ca/english/Newsletter-Fall 2010 English.pdf">http://www.mba-aom.ca/english/Newsletter-Fall 2010 English.pdf</a>



#### Integrated Bird Management at Offshore Installations

In 2010, discussions were held with Encana regarding the best funding process and research team structure for the project. The option selected consisted of recruiting a project lead and post-doc researcher at Acadia University and preparing an application for NSERC grants to match the cash and in-kind funding contributions from Encana. The Canadian Wildlife Service is now a research partner in the study, and will provide in-kind contribution to the project (such as expert advice and potentially transportation to Sable Island to tag birds from Sable colonies). The team has started working on the NSERC proposal and the planning of the 2011 field work season.

# VII.VII Other Research & Development

In 2010, 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 Eastern Scotian Shelf Integrated Management (ESSIM) Initiative, the Sable Island Stakeholder Committee and the Gully Advisory Committee.

Also in 2010, Encana continued to provide representation on various committees of the Offshore Energy and Environment Research (OEER), a not-for-profit association dedicated to fostering offshore energy and environmental research and development, prior to withdrawing from ongoing involvement. As well, Encana has continued to participate in several technical advisory groups from the Environmental Studies Research Fund and from PRAC, and represents the Canadian Association of Petroleum Producers as part of the Canada-Nova Scotia Offshore Petroleum Board's SARA (Species at Risk) Working Group.

# As well, in 2010 Encana has supported:

- The Colloquium and Annual General Meeting of the Atlantic Geoscience Society hosted by Acadia University. The Colloquium, which took place in February 2010, was an opportunity for geological researchers in Nova Scotia to network to discuss their findings and to develop new avenues of research.
- In May 2010, the Nova Scotia Energy Research & Development Forum hosted by the Nova Scotia Department of Energy, Offshore Energy Environmental Research Association and Offshore Energy Technical Research Association.
- The Atlantic Universities Geological Conference in October 2010 as hosted by Acadia University.
- The Joint AASP-CPC-CAP (American Association of Stratigraphic Palynologists-The Paleontological Society- The Canadian Paleontology Conference and the Canadian Association of Palynologists). The meeting took place in September 2010 in Dartmouth, NS.



# VIII Activity Forecast for January-June 2011

In 2010, Encana focused on:

- The safe execution and completion of the offshore drilling and completions program.
- The safe completion of the onshore construction program at Goldboro, NS for the three kilometre pipeline connecting the offshore pipeline to the Maritimes & Northeast Pipeline system.
- The safe execution and completion of the 2010 subsea program connecting offshore wells at Deep Panuke to the site of the PFC.
- Continuing to monitor progress of the construction of the PFC by SBM.

Encana will comply with conditions attached to CNSOPB approval of Deep Panuke, and will keep the CNSOPB informed of project activities through documents such as the quarterly procurement forecast, the quarterly stakeholder consultation report, the annual benefits report and other reports as required.

Project activity at Deep Panuke is organized into functional elements. The following section describes activity anticipated in the first six months of 2011 for each of these elements.

# **VIII.I Project Management Element**

For the first six months of 2011, Encana's Deep Panuke project team in Halifax will continue to manage and monitor progress on all project elements, including the execution of scopes of work being undertaken by major project contractors and subcontractors. In addition, the project team will continue with preparations for first gas and for the operations phase of the project, working closely with SBM as the prime operations contractor.

#### VIII.II Element 1 – Drilling and Completions

The four production wells and disposal well at Deep Panuke remain suspended in the field until the start up of production operations in the latter half of 2011.

In Q1 2011, disposal of surplus materials from the drilling and completions program was underway per the bidding opportunity communicated to the supply community in November 2010. Among the materials to be disposed included corrosion resistant alloy tubing and casing, carbon steel casing and downhole completions components.

Operations are expected to begin in Q1 2011 at the offshore supply base operated by Blue Water Agencies in Dartmouth, NS.



#### VIII.III Element 2 – Subsea

Subsea contractor Subsea 7 anticipates beginning work on infield umbilical installation at the PFC site in Q2 2011. Toward the end of Q2, Subsea 7 expects to mobilise the Acergy Discovery, its dive support vessel, in preparation for a three month tie-in program running through Q3. At about the same time, Tideway, the rock placement contractor, will be mobilising to place rock on parts of the infield flowlines and the gas export pipeline for stability purposes, and further, to install the scour protection system at the PFC. Encana also expects to execute some pipeline survey work in Q2 2011 in preparation for the rock program.

Subsea 7 and Tideway anticipate utilizing the port of Mulgrave, NS to support their programs along with rock quarried from Nova Scotia.

Work will continue by Subsea 7 subcontractor Aecon Fabco at its facility in Pictou, NS on the protection structure for the subsea isolation valve for the Deep Panuke export pipeline as well as the spools that will connect the gas export pipeline, flowlines and acid gas disposal line to the PFC.

#### VIII.IV Element 3 – Export Pipeline

By late Q2 preparations will be underway for some stability rock placement on the offshore section of the export pipeline. Some ground preparation work may be needed onshore at Goldboro, NS in preparation for the arrival of the pressure testing and dewatering equipment for use in Q3.

#### VIII.V Element 4 – Production Field Centre (PFC)

Construction of the PFC continues in the Middle East. All of the major components of the PFC have now been installed and integrated. This includes the hull, topsides, accommodations, legs, footings, flare, and riser caisson. All major equipment is now installed and outfitting activities are nearing completion. Commissioning is now in full progress with systems being energized and tested progressively as they become available.

The installation barge has also now arrived in the UAE and is now undergoing final modifications to allow it to be used for the float out of the PFC and to transport it to the heavy lift vessel for onward transport of the PFC and installation barge to Canada.

Final preparations are also now in progress to ready the PFC for flooding of the drydock and load out of the PFC.

The PFC, and the installation barge are expected to be loaded out in Q2 2011 onto the deck of the heavy lift vessel. The heavy lift vessel will transport the PFC as dry deck cargo from the UAE to Nova Scotia. Arrival is expected in late Q2. Readiness for the



Tow to the Deep Panuke site will continue in Nova Scotia in late Q2 to prepare the PFC for installation in Q3 2011.

#### VIII.VI Element 5 – Ready for Operations and Operations

During the first half of 2011, Encana will be continuing with operations preparations for the arrival of the PFC and the associated installation and hook-up work program planned for Q2/Q3 of this year. Particular focus is now on assessing SBM operational readiness as well as managing the provision of logistics services which are required for the both the hook-up and operations phases at Deep Panuke. These logistics services include helicopter transport, support vessels, ROV services and supply base.

SBM's activity continues to be managed out of the SBM Nova Scotia Contractors office located in Founders Square in Halifax, however plans are in place for a move to their permanent office location in Dartmouth by end of April 2011. SBM have made excellent progress on their recruitment drive for both onshore and offshore positions through Q4 2010 into Q1 2011. A total of 65 people will be staff members of SBM NS by the end of Q2 2011. By mid-March, preferred candidates for 59 of these positions have been identified, and 35 of these personnel are currently mobilized on the project. The SBM procurement effort is now being managed by a local procurement lead and key packages for the support of offshore operations are planned to be awarded by the end of Q2 2011. These include: Catering, Emergency Medical Services, Training, Chemical Services, Logistics Services and Waste Management.

During Q1 2011, Encana awarded a supply base contract that will support offshore operations in Dartmouth, Nova Scotia.

Construction of the platform supply vessel was completed during Q1 2011 and the vessel underwent commissioning and sea trials during February 2011. The Atlantic Condor was officially placed on-hire to Encana on February 19, 2011. The vessel will be fitted with the ROV spread during Q2 in preparation for support of the upcoming installation hook-up program.

