

# encana™



## **CANADA-NOVA SCOTIA BENEFITS**

### **2010 SEMI-ANNUAL REPORT**

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Encana Corporation  
Halifax, Nova Scotia

September 1, 2010

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## I. Executive Summary

In the first six months of 2010, Encana focused on the safe execution of all activities onshore and offshore in Nova Scotia including:

- 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.
- The drilling and completions program at the Deep Panuke field site, including the drilling of the disposal well and the re-entries of two previously drilled wells to prepare them for production – the program is utilizing the Rowan Gorilla III (RGIII) jack-up rig.
- Preparations for the subsea program in the summer of 2010 led by Acergy that will see the installation of flowlines connecting the offshore wells at Deep Panuke to the site of the Production Field Centre (PFC).
- 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 June 30, 2010.

Highlights of the report include:

- Total spending by Encana on Deep Panuke was \$136 million Canadian dollars.
- 554,588 person hours of work by Nova Scotians.
- 88,801 person hours of work by Canadians from other provinces.
- 648,167 person hours of work carried out within Nova Scotia.

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

	<b>2010</b>	<b>CUMULATIVE</b>
<b>CATEGORY BY RESIDENCE</b>	<b>PERSON HOURS</b>	<b>PERSON HOURS</b>
Nova Scotia Residents	554,588	1,486,906
Canadian Residents from other provinces	88,801	239,084

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 June 30, 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 infrastructure;
- Element 3 - export pipeline;
- Element 4 - production field centre and
- Element 5 - ready for operations and long term 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 expected to maintain 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 diameter 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 Acergy delivered 1,217 joints of eight-inch diameter

pipe that will form the flowlines at Deep Panuke. The pipe joints will be loaded to the Acergy Falcon pipelay vessel at Sheet Harbour in the summer of 2010.

Through the first six months of 2010, Encana maintained an operational presence at the supply base operated by Offshore Logistics in Dartmouth, NS in support of the drilling and completions program offshore. As well, surplus drilling materials remain stored at Goodwood, NS.

At June 30, 2010, the total complement of Encana employees and contract staff supporting the Deep Panuke project was 120 individuals, including individuals working 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.

Encana PFC contractor SBM continues to maintain its office in Halifax, and will be increasing its local presence as the project gets closer to first production.

### **III. Business Opportunities and Supplier Development**

#### **III.I Communication of Business Opportunities**

In the first six months of 2010, Encana shared seven business opportunities at Deep Panuke with the local supply community. Recognized channels of distribution for the information included postings to the Business Opportunities section of the Deep Panuke pages on the Encana website ([www.encana.com/deeppanuke/business](http://www.encana.com/deeppanuke/business)), postings to the electronic bulletin board BIDS Nova Scotia, an email distribution list comprised of disadvantaged group representatives and newsletter distribution.

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 two project newsletters to date in 2010 – March and June. Both newsletters also included procurement opportunity information for two major Deep Panuke contractors: SBM, the owner and operator of the PFC for Encana and Acergy, the company contracted for subsea flowline installation in 2010. 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 [www.encana.com/deeppanuke](http://www.encana.com/deeppanuke). By June 30, 2010, there were 385 individuals registered to receive an e-copy of the newsletter.

In parallel to Encana's activities, contractors to Deep Panuke such as SBM, Acergy and Robert B. Somerville Co Limited released 18 Deep Panuke-related business

opportunities to the local supply community in the first six months of 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 the first six months of 2010, Encana continued to liaise with stakeholders to share information on Deep Panuke. Methods of liaison in 2010 to date have 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 [www.encana.com/deeppanuke](http://www.encana.com/deeppanuke) (Deep Panuke pages).

During the first six months of 2010, two 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](http://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.
- 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 [www.encana.com/deeppanuke](http://www.encana.com/deeppanuke). Through the first six months of 2010, there were more than 7,700 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 and the Business Opportunities section where Encana Expressions of Interest, Bidders Lists and Contracts Awarded are posted.

The general project information email box ([dpinfo@encana.com](mailto:dpinfo@encana.com)) is monitored on a daily basis. In the first six months of 2010, nearly 100 queries were received in the mailbox from the general public, from contractors seeking business opportunities and from individuals or organizations requesting community sponsorships. In addition, members of the Deep Panuke contracts and human resources teams 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 and sections of the gas export pipeline and onshore construction at Goldboro. The supplement was:

- Posted to the Deep Panuke pages on the Encana website at [www.encana.com/deeppanuke](http://www.encana.com/deeppanuke)
- Inserted in the June 2010 edition of the Deep Panuke newsletter to broaden distribution.
- Regularly distributed at meetings, conferences and other events.

### **III.III Contract Awards**

Encana awarded 12 contracts for Deep Panuke in the first six months of 2010, including 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 in 2010. 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

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

The total expenditure for Deep Panuke during the period of January 1-June 30, 2010 was \$136 million Canadian.

## **IV. Project Employment**

### **IV.I 2010 Person Hours**

Total Nova Scotia Person Hours from January 1 to June 30, 2010 for Deep Panuke were 554,588 and Other Canadian hours were 88,801 with 648,167 hours of work performed within the Province of Nova Scotia during the period.

The cumulative Nova Scotia Person Hours to date are recorded as 1,486,906. Total cumulative hours of work performed within the Province of Nova Scotia was 2,141,159.

#### **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 project grew to 120 individuals at the end of June 2010, including contractors located in Goldboro, NS, Abu Dhabi, and at SBM facilities in offshore Brazil and Angola.

Significant Nova Scotia Person Hours were recorded through the first six months of 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 the first six months of 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 [www.careerbeacon.com](http://www.careerbeacon.com), a well recognized website for local opportunities in the offshore oil and gas industry, in the Chronicle Herald and for positions located at Goldboro, NS, the Guysborough Journal. As well, notices for the positions appeared on the Encana website at [www.encana.com](http://www.encana.com), Careers section.

In the spring of 2010, Acergy 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 has been circulated to representatives of disadvantaged groups in Nova Scotia and other interested stakeholders via an e-distribution list.

In January 2010, SBM advertised on [www.careerbeacon.com](http://www.careerbeacon.com) for a senior engineering and a procurement position based in its Halifax office.

Since May 2007, 30 students have joined the Deep Panuke team, generally on a four-month basis, with 6 of the 30 students participating in the first six months of 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

During the first six months of 2010, the individual holding the position of Aboriginal and Community Liaison Advisor in-house at the Deep Panuke project office had more than 227 direct business related contacts. Of that number, 86 were Aboriginal contacts, 89 were with other identified disadvantaged groups/individuals, 17 contacts were made with federal and provincial government departments and agencies, 20 contacts were made with education/training institutes and more than 15 private sector contacts were made. Regular contact is maintained now with 35 community groups/agencies representing the four identified disadvantaged groups.

To directly share information on Deep Panuke contracting opportunities with disadvantaged groups in the first six months of 2010, seven 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. As well, Encana distributed 13 opportunities on behalf of SBM and Acergy to representatives of disadvantaged groups.

The established process continued in the first six months of 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 employment opportunities as well as employment opportunities on behalf of Reliance Offshore for Acergy.

To supplement direct notifications of business and employment opportunities, in the first six months of 2010, Encana placed advertising in local publications focusing on disadvantaged groups such as the Entrepreneurs with Disabilities newsletter, the newsletter of the Centre for Women in Business, Black to Business (the magazine of the Black Business Initiative), the Mi'kmaq Maliseet Nations News and Taliaq, the newsletter for the Native Council of Nova Scotia. The advertising directed readers to where the Deep Panuke business and employment opportunities are posted on the Encana website.

Per past practice, in the first six months of 2010, Encana continued to support 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 to date 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

## **V.II Aboriginal and Community Liaison**

To facilitate the communication of business and employment opportunities at Deep Panuke to Mi'kmaq and Aboriginal stakeholders in the first six months of 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 the first six months of 2010, eight individuals were approved for 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 floorhand training, basic survival and fast rescue craft training, electrical engineering technology, ironworking, drafting and aquatic resources. The Fund also supported "career exploratories" in the first six months of 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. The Native Council of Nova Scotia profiled the work of ENCOF, and included information on the application process for educational grants from the Fund, in the March and June 2010 editions of their newsletter Taliaq.

Encana maintains regular contact with the Encana Mi'kmaq Liaison Advisor working with the Mi'kmaq Rights Initiative (MRI), and continues to engage with this individual regarding Deep Panuke opportunities for the benefit of Mi'kmaq companies and individuals. In the first six months of 2010, the work involving Encana's in-house Aboriginal and Community Liaison Advisor and the MRI's Encana Mi'kmaq Liaison Advisor has included ongoing discussions with Atlantic Towing, the company awarded the contract for the platform supply vessel to be used during operations at Deep Panuke, with respect to a potential Mi'kmaq cadet program.

Additionally, 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, in the first six months of 2010, four Mi'kmaq individuals were recruited for the Acergy subsea program at Deep Panuke slated for summer and fall 2010.

In addition, to support Mi'kmaq and Aboriginal community development, Encana supported and/or participated in several initiatives in the first six months of 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 <http://www.mapcmaars.ca/theblog/>
- 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**

In the first six months of 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.

The Encana in-house Aboriginal and Community Liaison Advisor was asked to join the Board of Directors of EDN in June 2010 and has accepted this invitation.

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.

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

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

In the first six months of 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 to date in 2010 are the Black Business Initiative, the Black Educators Association, Imhotep Academy and ISIS, the Immigrant Settlement and Integration Services (formerly MISA).

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 has worked with ISIS in the first six months of 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. Further dialogue with ISIS is expected in the second half of 2010 to develop this initiative.

A major initiative supported by Encana beginning in the first six months of 2010 is the proposed 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, set to formally launch in September 2010, is part of the expansion of the Imhotep Academy to African Nova Scotian students in Guysborough and Antigonish Counties. See <http://imhotep.dal.ca/>

Other support in the first six months of 2010 included:

- Funding for African Nova Scotian youth delegates 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, <http://catapultcamp.com/>

## **V.V Women**

In the first six months of 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 met with representatives of the Centre for Women in Business to discuss Encana support of a representative of WEConnect Canada participating in an upcoming conference to be hosted by the Centre. See <http://weconnectcanada.org/home.html>

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 the first six months of 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 [http://www.nsccl.ca/About\\_NSCC/NSCC\\_Foundation/Scholarships\\_And\\_Bursaries/Descriptions.asp](http://www.nsccl.ca/About_NSCC/NSCC_Foundation/Scholarships_And_Bursaries/Descriptions.asp)

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 is a testimonial from a female Encana offshore logistics engineer, bringing the total expected number of videos online to 20 by the end of 2010. Encana is providing three years of funding to support the web video project.

In the first six months of 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 will be conducted in the fall of 2010.

Encana continues to require new hires to Deep Panuke to receive mandatory Aboriginal Awareness Training. The training is 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 in the first six months of 2010 with respect to diversity is the following:

Disadvantaged Group	Number of Positions	Hours Worked (Reported as Lump Sum)
Aboriginal peoples	6	
Persons with disabilities	-	
Members of visible minorities	12	
Women	47	
TOTAL (January-June 2010)	65	26,492

## VI. OSEA

### VI.I Update on Activities

During the first six months of 2010, progress was made on the Offshore Strategic Energy Agreement (OSEA) commitments with the Province of Nova Scotia. During this period, Encana exceeded the OSEA commitment to 850,000 person hours of work for Nova Scotians. For the initiatives identified in the OSEA, to the end of June 2010, more than 1.0 million person hours of work were Nova Scotian Person Hours.

In the first six months of 2010, 356,055 hours of work were conducted in Nova Scotia with 331,046 of these hours being Nova Scotia Person Hours. From the commencement of the OSEA, 1,259,185 hours of work have been conducted in Nova Scotia with 1,099,203 of these hours being Nova Scotia Person Hours.

In addition to the OSEA hours, significant Nova Scotia hours were recorded for activities such as drilling and completions and onshore pipeline construction. In the first six months of 2010, 292,111 hours of work were conducted in Nova Scotia with 223,541 of these hours being Nova Scotia Person Hours.

In Q3 2010, Encana anticipates exceeding the OSEA commitment to 1.35 million hours of work conducted in Nova Scotia

Activities on the following OSEA commitments were completed in 2009, thus updates on these activities are not provided in this report: 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 will be integrated with the Deep Panuke PFC.

- Offshore Supply Vessel

The Platform Supply Vessel is being built by Irving Shipbuilding in Halifax for Atlantic Towing. By the end of June 2010, the vessel was approximately 50 per cent complete.

Atlantic Towing will operate the new vessel on long term contract with Encana during the operations phase of Deep Panuke. The vessel is scheduled for completion in Q1 2011.

- 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 the first six months of 2010, Encana engaged in dialogue with Nabors Canada and Laurentian Fabricators at Sydport, NS regarding a possible 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.

## **VII. Education & Training/ Research and Development**

During the first six months of 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.

PRAC has been 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, particularly the Research & Development aspects.

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

To date, Encana confirms spending of approximately \$1.5 million on education & training and research & development projects under the Deep Panuke Education & Training and Research & Development Fund. Monies remaining in the Fund at March 31, 2010 are approximately \$3.9 million.

### **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, is nearing completion. Petroleum Research Atlantic Canada (PRAC) is administering the Call on behalf of Encana.

The closing date for Letters of Intent (LOIs) to apply to the call was January 8, 2010. A total of 26 LOIs were received, 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 to review the LOIs including individuals with offshore oil and gas industry, project management, regulatory and government experience. The PEC recommended that seven LOIs be shortlisted and invited to submit full proposals by April 23, 2010.

Subsequently, the PEC met June 9 to conditionally recommend five of the shortlisted proposals for funding. Requests for clarification were sent to the relevant applicants, with responses due by July 14.

Total funding recommended for the five projects is \$600,000 over three years.

Encana anticipates that the PEC recommended projects will be shared with the Canada-Nova Scotia Offshore Petroleum Board in Q3 2010, with award to researchers following CNSOPB approval of the selected projects.

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

The following updates are provided for 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 is in the second year of an expansion of its learning materials via the development of web testimonials by women in non-traditional careers. The “Women in Action” video series will be a web-based library of up-close, personal interviews with women who are working in science, trade or technology fields. Each video will highlight: how the women came to be where they are today; what educational choices they made; how they decided on their specific career; some of the challenges they overcame; and what this particular career is actually like on a day-to-day basis. In 2010, production is 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 the end of June 2010, the videos have received 2,708 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 is also under way in 2010 to identify potential role models to be profiled in the third and final year of the web video project.

- Regional Science Fairs

In the spring of 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 junior and senior high 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 is presented to the student at the Discovery Centre's annual Discovery Awards. 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 2009-2010 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 four TechShop events supported by Encana in 2010, held at the Lunenburg, Cumberland, Akerley and Pictou campuses, a total of 249 students from three school boards participated. Encana's support also was directed in 2010 to a Young Women's Conference at the NSCC Burrige campus in Yarmouth, NS, where 46 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 42 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.

- 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 under way in May 2010. Support also was provided for the development of new problem sets for Math-On events. 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 the first six months of 2010, the EFS program was presented to 71 teachers and 193 students. The program includes presentations on the 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 refinery. In the first six months of 2010, presentations took place at Bicentennial School in Dartmouth, NS, Northumberland Regional High School in Alma, NS and Citadel High School in Halifax, NS. As well, representatives of EFS attended a Skills Canada-Nova Scotia event at the NSCC Akerley campus and a workshop 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 to date, six newsletters have been distributed to 724 recipients. To host the newsletter, Encana also supports the EFS website, particularly the oil and gas subsection. Also in 2010, EFS launched its Energy Map for educators and students depicting major aspects of energy infrastructure in Nova Scotia, including offshore facilities and supporting services such as offshore supply vessels and the Maritimes & Northeast Pipeline system.

- The Discovery Centre – Science on the Road Program

The Science on the Road 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 September 2009 to June 2010, the Science on the Road program reached more than 21,000 students in Nova Scotia at 73 schools across seven public school boards. Basic science concepts in

chemistry and physics are explored via four individual demonstrations/workshops with exercises on magnetism, static electricity, light, electricity and materials. The Science on the Road program is tied to science curriculum for the Province of Nova Scotia is offered in French and English and can be adapted to make accommodation for students with exceptionalities. In 2009-2010, the number of schools reached increased by 14 per cent over the same time period in 2008-2009. There was also a 25 per cent increase in the total number of students who participated in Science on the Road over 2008-2009, largely because many of the new schools visited were consolidated elementary schools or consolidated elementary/junior high schools with more students. Between January and June 2010, 18 new schools were visited, receiving their first Science on the Road programming.

- 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 June 2010, with Encana's support, SITS presenters delivered 70 presentations in classrooms across the province. Via these presentations, approximately 1800 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 maintains a database of 200 science volunteers – among them scientists, engineers, IT specialists, mathematicians and others from the public and private sectors, universities and not-for-profit organizations.

- Ducks Unlimited – Project Webfoot

In recognition of the impacts to wetlands in Guysborough County from the construction of the onshore section of 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 a science educational program that aims to communicate the value of wetlands to elementary school-aged children. In the 2009/2010 school year (September 2009-June 2010), Encana funding helped to support programming for 33 classes representing 796 students at 17 schools in Guysborough, Antigonish and Halifax counties. As well, funding from Encana 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. The donation of materials took place in the spring of 2010.

## **VII.V Other Education & Training Projects**

Through the first six months of 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, the Canadian Association of Petroleum Producers and the Canadian Centre for Energy. In the first six months of 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.

Encana supported students from disadvantaged communities (visible minorities and women) interested in pursuing careers in science, trades and technology by providing funding for the Black Educators Association bursary fund and the Nova Scotia Community College's 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 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 the first six months of 2010, contractors reported 93 individuals trained in the following programs representing an investment of \$30,687:

- 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
- Lock Out Tag Out Training
- JRCC (Joint Rescue Coordination Centre) Role in Rescue At Sea
- Banksman/Rigger Training
- Online Well Control Training
- 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 R&D projects approved under the Fund.

- Oil and Gas Case Studies

At Acadia University, Dr. Conor Vibert is developing case studies examining the business of the offshore oil and gas industry in Nova Scotia. The five cases profile the work in Nova Scotia of: Black & McDonald, Jasco Research, Maritimes & Northeast Pipeline, Secunda Marine Services and Survival Systems Training. The case studies will be used by students and university researchers in the Fred C. Manning School of Business and are expected to be completed by October 31, 2010. In 2010/2011, Dr. Vibert's efforts with this project will be to make these multi-media cases available to secondary and post-secondary institutions for use in the classroom through either a third party distributor or directly through Acadia's own website.

- Spill Modelling

Researchers at the Centre for Offshore Oil and Gas Research (COOGER) at the federal Department of Fisheries and Oceans are examining a new tool – Fluorescence Intensity Ratio (FIR) – to track the dispersion of oil discharge and spills in a marine environment. COOGER will partner with Pro-Oceanus Systems of Bridgewater, NS to develop the fluorometry technique as a new innovation to obtain real-time measurements.

- Produced Water

Examination by researchers at Dalhousie University of chemical-free electro-coagulation (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 is under way for the complex salts chair supported by the Fund. A search for qualified scientists produced three final candidates, who submitted their dossiers and references to the university by June 15, 2010. Interviews with the selection committee will now be scheduled for each candidate.

- 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. Test models have been run on the system, which 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 has increased computing resources from nine servers (two dual-cores CPUs per server) to 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. Additional work is now required to make the system fully operational.

- 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. Encana is in the process of analyzing the data submitted by Survival Systems and anticipates being able to share the results of the analysis shortly with the offshore oil and gas industry in Nova Scotia.

- 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 will undertake volunteer and staff surveys of coastal islands and inaccessible coastline in Nova Scotia using Breeding Bird Atlas methods. The goal of these surveys will be 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. To date in 2010, islands and coastal areas of Nova Scotia have been prioritized for further examination and 14 surveys have been conducted, including (Guysborough) east of Sheet Harbour, the Harbour Islands and other islands in the Eastern Shore Islands Wildlife Management Area, areas near Yarmouth, NS, Mersey-LaHave (Tancook and Rafuse islands) and Chebucto-Musquodoboit (Gerard, Baltee and Borgles islands.) As a result of the surveys, breeding evidence was collected for more than 40 bird species, including the Gray-cheeked Thrush. Until now, the nearest known breeding location for the Thrush was Newfoundland. See <http://www.bsc-eoc.org/organization/bscnews.html#Gray>

- Integrated Bird Management at Offshore Installations

In the first six months of 2010, discussions were held with Encana regarding the best funding process and research team structure for the project. Options considered included potential partnerships with Environment Canada, funding through a National Science and Engineering Research Council Industrial Research and Development Fellowship (post-doctoral fellowship), which could include participation from Acadia University (post-doc mentor) and Bird Studies Canada to coordinate/manage the project. A final proposal for this project will be submitted to Encana by early fall 2010, including the proposed research team, project management and funding structure as well as a detailed schedule of activities and associated budget.

### **VII.VII Other Research & Development**

In the first six months of 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.

Encana continues 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. As well, Encana has continued to participate in several technical advisory groups from the Environmental Studies Research Fund and from PRAC.

As well, to date 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.

### **VIII Activity Forecast for July-December 2010**

In the last six months of 2010, Encana will focus 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 subsea section of the 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 last six months of 2010 for each of these elements.

### **VIII.I Project Management Element**

For the remainder of 2010, 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 commence internal planning activities related to start up of the project and will continue with preparations for the operations phase of the project, working closely with SBM as the prime operations contractor.

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

Activity continues on the drilling and completions program offshore to prepare four wells for production at Deep Panuke.

Testing operations at production well F-70 were completed on July 12. Following completion of the well, the Rowan Gorilla III drilling rig moved to the H-08 well on July 20. Following activity on H-08, the rig will move to M-79A, the last of the production wells.

It is anticipated that the Rowan Gorilla III will complete offshore operations in Q4 2010.

Supplies and personnel for the drilling program will continue to be shuttled to the Rowan Gorilla III rig via offshore supply vessels from the Offshore Logistics supply base at Dartmouth, NS and via helicopter by Cougar Helicopters from the heliport at Stanfield International Airport in Enfield, NS.

### **VIII.III Element 2 – Subsea**

Subsea contractor Acergy anticipates beginning work on infield flowline installation at the PFC site in July 2010 followed by trenching of the flowlines and rock placement later in the year.

Acergy will utilize ports at Mulgrave and Sheet Harbour, NS to support the subsea program along with rock quarried from Nova Scotia.

Work will continue by Acergy subcontractor Aecon Fabco at its facility in Pictou, NS on the protection structure for the subsea isolation valve for the Deep Panuke export pipeline.

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

The remaining tasks for 2010 are to complete the restoration of the site at Goldboro, NS following earlier construction operations to install the three kilometre section of onshore pipeline. As well, the final tie-ins will be completed of the onshore pipeline with the subsea pipeline section at landfall and to the Maritimes & Northeast Pipeline.

During August, at the offshore end of the pipeline in the Deep Panuke field, the Acergy diving support vessel Acergy Discovery will be on location for a small campaign to recover gauge plates from the end of the line as final verification of integrity for the subsea section of the pipeline.

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

Construction of the PFC continues in the Middle East. The hull and topsides are now integrated and work continues on the outfitting activities. The legs have been delivered to site, and the spud cans anchoring the PFC to the sea floor are also now complete. Work also continues on the accommodations unit in readiness to be lifted onto the PFC in Q3.

The flare tower is now on site and the riser caisson is being readied for transport from France to Abu Dhabi in Q3. The riser caisson is the junction point where flowlines and umbilicals for Deep Panuke wells connect back to the PFC.

Work will continue at the fabrication site for the remainder of 2010 as construction work is completed and the project moves into the commissioning phase to prepare the PFC for transport to Canada in 2011.

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

During 2010, Encana and SBM have worked together to manage the provision of logistics services which overlap between the development and operations phases at Deep Panuke. These logistics services include helicopter transport, support vessels, ROV services and supply base.

SBM's activity in this area continues to be managed out of the SBM Nova Scotia Contractors office located in Founders Square in Halifax. During the first half of 2010 a number of SBM operations phase support contracts have begun moving through the procurement process. These contacts include payroll services, maintenance system data management, medical services, production chemicals and training. In total, SBM expect to award approximately twenty operations phase contracts by the end of 2010.

A second recruitment campaign for SBM in Nova Scotia, originally scheduled for early 2010, will now take place during Q4 2010. The first campaign in the fall of 2009 identified candidates for senior positions on the PFC who will be hired during Q3 2010 and mobilized to the construction yard to participate in the mechanical completion and pre-commissioning of the PFC.

During Q2 2010, Encana and ExxonMobil released the RFP for the supply base to support both Encana/SBM and ExxonMobil operations offshore. Award of the supply base contract is targeted for Q4 2010.

Construction of the platform supply vessel continues at the Halifax Shipyard throughout 2010. As of the end of June 2010, vessel construction progress had reached 50 per cent completion, with delivery of the completed vessel expected during Q1 2011.