Deep Panuke

Supplier and Infrastructure Assessment 2010 Update (March 2011)

						
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Title

Deep Panuke Supplier and Infrastructure Assessment 2010 Update (March 2011)

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1 INTRODUCTION

Condition 11 of the Canada-Nova Scotia Benefits Plan Decision Report and Development Plan Decision Report (the Decision Report) as issued by the Canada-Nova Scotia Offshore Petroleum Board (CNSOPB) on October 3, 2007 requires Encana to provide a Supplier and Infrastructure Assessment on an annual basis during the development phase of the Deep Panuke Project (the Project).

The initial submission in response to this Condition 11 requirement (document number DMEN-RP-RE-0011) was submitted to the CNSOPB in March 2009 (Original Assessment). A subsequent update was filed in March 2010 (document number DMEN-RP-RE-0051). Both reports are posted on the CNSOPB website.

Building upon previous submissions, this document provides an additional update in accordance with the requirement under Decision Report Condition 11 as pertaining to Project activities in 2010. Additionally, this report will provide a look-ahead with respect to the project as it transitions into steady state operations and will describe the transition regarding the use of local suppliers and infrastructure given this changeover.

2 PROJECT BACKGROUND AND OVERVIEW

2.1 Development Phase Activities

Encana's Deep Panuke Project involves the installation of facilities required to produce and process natural gas from the Deep Panuke field, approximately 250 kilometres southeast of Halifax, Nova Scotia on the Scotian Shelf. Natural gas from Deep Panuke will be processed offshore and transported, via a 173 kilometre subsea pipeline, to Goldboro, Nova Scotia for further transport to market via the M&NP.

The Project's Development Phase is split into six elements, and can be summarized as follows:

Element	Overview
0 Project Management	• Engineering and Project Management Teams based in Halifax
1 Drilling and Completions	• Drilling and completion of one subsea disposal well • Re-entry and re-completion of four existing wells as subsea production wells • Installation of subsea trees
2 Subsea Flowlines, Umbilicals and Structures	• Infield Flowlines and umbilicals to connect wells to Production Field Centre (PFC)
3 Export Pipeline	• Subsea export flowline (22-inch) from PFC to Goldboro (173 km) • Onshore pipeline (3km) and associated facilities in Goldboro with tie-in to M&NP
4 Production Field Centre (PFC)	• Self-elevating hull with topsides and utilities to process and export produced gas
5 Ready for Operations	• Shorebase operations and vessel services for production phase • Recruitment and training of operations personnel • Preparation of procedures and other documentation

2.2 Tendering in 2010

The principles and processes for procurement associated with the Project are described in Section 4 of this report. The tendering process involves:

- posting of expressions of interest (EOI) to maximize opportunities for local and regional suppliers and workers;
- assessing EOI responses and identification of qualified bidders;
- issuing formal request for proposal (RFP) packages to qualified bidders.

A significant level of Nova Scotian business participation and involvement in the Deep Panuke tendering process existed in 2010 in support of project requirements. Tender activities by Encana and its major subcontractors, including participation by Nova Scotian companies, is summarized in the table below for 2010, and since project sanction in 2007:

Reporting Period	Expressions of Interest (EOI)	Requests for Proposals (RFP)		
		Issued	Nova Scotian Companies	
			Participated	Successful
2010	50	49	61	10
Cumulative, since 2007	262	218	354	86

3 PROJECT UPDATE

3.1 Element 0 - Project Management and Engineering

The Project Management Team (PMT) for the Deep Panuke Project is based out of Encana's office in downtown Halifax. In 2010, the PMT consisted of individuals based in the Halifax office, with project staff also located in Goldboro, NS, Abu Dhabi, United Arab Emirates (UAE) and in secondments at SBM facilities offshore Brazil and Angola. More than 80% of the PMT are classified as Nova Scotian residents with vast experience from previous work on energy projects in Atlantic Canada, Alberta, the United States and internationally.

Contracts for external support and consulting services have been awarded to companies and businesses within Nova Scotia and Canada. Nova Scotian based companies contracted by Encana to support the PMT include:

Company	Scope of Work	Location
Spectrol Group	Third Party Inspection	Dartmouth, NS
Germanischer Lloyd	Third Party Inspection	Dartmouth, NS
Lloyd's Register	Certifying Authority	Halifax, NS
EM&I Stantec	Integrity Management	Dartmouth, NS
PF Collins	Customs Brokerage / Freight Forwarding	Dartmouth, NS
London Offshore Consultants (LOC)	Marine warranty surveyors	Dartmouth, NS
Sagaris Nautical	Marine Consultant	Dartmouth, NS
Stewart McKelvey	Legal Services	Halifax, NS

3.2 Element 1 - Drilling and Completions

In November 2009 Encana executed its in-harbour mobilization program aboard the Rowan Gorilla III (RGIII) to install equipment and make related modifications for drilling and completing wells at Deep Panuke. The rig was eventually towed from Halifax Harbour in late December 2009.

Work commenced on disposal well E-70 on January 12, 2010. From that date , four previously drilled wells were re-entered and re-completed – D-41, F-70, H-08, and M-79A. Work on the fourth and final well at the M-79A location concluded on October 12, 2010. The RGIII was subsequently towed to the IEL dock in Woodside, NS for an in-harbour demobilization program that was finished in late October 2010.

Despite a downturn in drilling activity offshore Nova Scotia, a number of drilling services, logistics, and support companies have maintained a presence. Others have scaled back operations , or have consolidated their Atlantic Canada operations from a base in the St. John's, NL area where more activity is present. Nonetheless, a relatively high level of participation was evident among Nova Scotian and Canadian businesses supporting the Deep Panuke drilling and completions program.

Nova Scotian and Canadian based companies supporting the 2010 drilling and completions program included:

Company	Scope of Work	Location
Secunda Marine	Supply Vessels - Ryan Leet / Hebron Sea	Dartmouth, NS
Cougar Helicopters	Helicopters	Enfield, NS
Offshore Logistics	Shorebase Facilities	Dartmouth, NS
Newalta	Waste Management	Bedford, NS
Imperial Oil	Supply of Marine Gas Oil (MGO)	Dartmouth, NS
Sabre Safety Canada	Supplied Air Systems and Services	Dartmouth, NS
FI Canada	Tubular Running and Bucking Services	Dartmouth, NS
AMEC	Meteorological and Oceanographic Services	Dartmouth, NS
Fugro Jacques	Rig Positioning	Dartmouth, NS
PRAXES	Medical Services	Halifax, NS
Weatherford Canada Partnership	Mud Logging Fishing Tools Downhole Drilling Tools	Dartmouth, NS
Import Tool	Casing Accessories	Dartmouth, NS
Maersk Supply Service Canada Ltd.	Supply Vessel	St. John's NL
M-I Swaco	Drilling and Completions Fluids and Services	Halifax, NS
Halliburton Group Canada	Completions Equipment DHPT Gauges SCSSV (Surface Control Subsurface Safety Valve)	Mt. Pearl, NL
Schlumberger Canada	Cementing and Acid Stimulation Directional Drilling / LWD / MWD Open Hole Wireline / Slickline	Dartmouth, NS / Mt. Pearl, NL
Oceaneering Canada	ROV Services	Dartmouth, NS
Expro Canada	Well Testing	Mt. Pearl, NL
Workstrings Canada	Downhole Rentals	Mt. Pearl, NL
Brown Offshore	Cutting and Threading Services	Paradise, NL

3.3 Element 2 - Subsea Flowlines, Umbilicals and Structures

3.3.1 Subsea 7

Subsea 7 (formerly Acergy Canada Inc.) has been awarded the contract for engineering, procurement, installation and commissioning (EPIC) of four production flowlines, one acid gas injection flowline and five control umbilicals between the subsea trees and the PFC. Subsea 7 are also responsible for design, fabrication and installation of a subsea isolation valve (SSIV), complete with protection structure and dedicated control umbilical, for the gas export pipeline (GEP).

The eight-week long program to install in-field flowlines was complete in September 2010. The *Acergy Falcon* pipelay vessel laid about 15 kilometers of flowlines for the production wells and a 1.6 kilometer flowline for the disposal well. Trenching then followed pipelay operations to bury each flowline to approximately 1 meter below the seabed.

Subsea 7 will return to the field in 2011 for two separate campaigns. Installation and trenching of five control umbilicals will be undertaken using the *Acergy Falcon.* These umbilicals run parallel to the flowlines and connect the subsea trees, located on the wellheads, to the PFC.

Subsea 7 will mobilize a diving support and construction vessel, the *Acergy Discovery,* for hook-up and commissioning of Deep Panuke's subsea assets. The vessel will be used to support saturation divers who will complete the hook-up of the flowlines and umbilicals to the PFC and subsea trees.

Additional work scopes for the *Acergy Discovery* include installation of concrete protection mattresses and tunnels over untrenched flowline and umbilical sections as well as installation of the SSIV structure and associated umbilical.

Hook-up, commissioning and associated activities as described above are scheduled for 80-90 days in duration.

To support these work scopes Subsea 7 has issued awards to local companies as follows:

Company	Scope of Work	Location
Aecon Fabco	Tie-in Spools SSIV Protection Structure Assembly of SSIV	Pictou, NS
BJ Services	Pre-commissioning	Dartmouth, NS
Oceans Ltd.	Weather Downtime Analysis	Dartmouth, NS
IH Mathers	Marine Logistics Services	Halifax, NS
Mulgrave Machine Works	Seafastening Welding Services	Mulgrave, NS
Reliance Offshore	Marine Crewing	Halifax, NS
Praxes	Offshore Medical Services	Halifax, NS
North Atlantic Marine Terminals	Shorebase Services	Sheet Harbour, NS
Edge Marine and Disposal Services	Waste Disposal	Dartmouth, NS
Dominion Diving	Diving Personnel	Dartmouth, NS
Fugro Jacques	Survey Equipment	Dartmouth, NS

3.3.2 Aecon Fabco

Subsea 7 has awarded contracts to Aecon Fabco for the fabrication of a 43 tonne SSIV protection structure, assembly of the 20 tonne SSIV itself, as well as fabrication of a total of 20 spools measuring up to 35 meters and weighing as much as 24 tonnes. Five of these spools will be used to connect the GEP and SSIV to the Deep Panuke PFC. The fifteen remaining spools will connect the flowlines to the PFC. Aecon Fabco has utilized local contractors to support this work as follows:

Company	Scope of Work	Location
Acuren	NDE / NDT Services	Dartmouth, NS
Parker Kaefer	Blasting and Coating	Dartmouth, NS
Atlantic Metallurgical Consulting (AMC)	Mechanical Testing	Dartmouth, NS

3.4 Element 3 - Export Pipeline

3.4.1 Robert B. Somerville Co. Limited (Somerville)

At Goldboro, work has been complete by lead contractor Somerville on the onshore pipeline and facilities consisting of approximately 2.8km of buried onshore pipeline, a beach valve station, and a pipeline terminus station. In completing the onshore pipeline piece, Deep Panuke's subsea pipeline (installed in 2009) and the M&NP system are fully connected. Somerville released Deep Panuke-related business opportunities to the local supply community with awards made as follows:

Company	Scope of Work	Location
J & T Van Zutphen Construction	Pipeline & Onshore Facilites Construction	Port Hood, NS
Acuren	NDT Services	Dartmouth, NS

M&NP has completed its work on the metering station where natural gas from Deep Panuke will transfer from the Encana pipeline to the M&NP system for transport to market. Testing and commissioning of the entire pipeline from the offshore to M&NP is currently forecast to take place in Q3 2011.

3.5 Element 4 - Production Field Centre (PFC)

3.5.1 SBM

SBM has been awarded the EPCIC Contract covering the engineering, procurement, construction, installation, and commissioning of the PFC. Major components of the PFC include the hull, topsides, accommodations, legs, riser caisson and flare boom.

As noted on previous submissions of the Supplier and Infrastructure Assessment, efforts by SBM to identify Canadian bidders for the hull, topsides, and accommodations block were unsuccessful. As a result, this work is being executed in Abu Dhabi, UAE. The remote execution of major PFC components has made it difficult for local and other Canadian vendors to compete on a best value basis to provide goods and services for the construction of the hull and topsides of the PFC. Still, local success has been witnessed relative to components supporting the PFC which include:

Company	Scope of Work	Location
Aecon Fabco	Flare Boom	Pictou, NS
Rutter Hinz	Communications Int / Ext	Dartmouth, NS
Accent Engineering	Winterization Study	Dartmouth, NS
DSS Marine Inc.	Lifeboat Package	Dartmouth, NS
Atlantic XL	Onshore Communications Package	Halifax, NS
Fugro Jacques	Surveying & Positioning	Dartmouth, NS

Local companies and workers will participate in the hook-up and offshore installation of the PFC. Contracts for this work are expected to be awarded in the second quarter of 2011.

3.5.2 Tideway BV (Tideway)

Tideway has been awarded the contract for supply and installation of rock scour protection. This work involves utilizing the D.P. *Rollingstone, a* Fall Pipe Vessel with a loading capacity of approximately 11,500 tonnes, to install rock material for scour, pipeline and flowline protection.

In late December 2010, Tideway publicized business opportunities connected to this scope of work through recognized channels of distribution. Nova Scotian companies have been successful relative to such opportunities, as follows:

Company	Scope of Work	Location
Zutphen Contractors	Rock Materials and Stockpiling / Loading	Port Hood, NS
IH Mathers	Ships Agency	Halifax, NS
Dominion Diving	Free Flying ROV Services	Dartmouth, NS
Imperial Oil	Marine Fuels and Lubes	Dartmouth, NS
Reliance Offshore	Crewing Services	Dartmouth, NS

3.6 Element 5 - Ready for Operations (RFO)

3.6.1 SBM

In addition to the provision of the PFC, SBM is has provided RFO and operations personnel throughout the Development Phase to offer operations input into detailed design. SBM has recruited an operations organization, to be based in Nova Scotia, to provide long-term production facilities management, day-to-day operations, maintenance, and logistics management services over the producing life of the field.

Upon the arrival of the PFC, SBM personnel will support onshore pre-commissioning, installation phase logistics management, the offshore hook-up and commissioning scope, and facilities start-up.

Preparations for the operations phase of the Project are ongoing. Encana and SBM continue to address requirements for long term operations, as well as operational support requirements for the development phase of the Project. Local capability to provide such support is well-developed, and a high level of local participation is expected from the arrival of the PFC and forward.

3.6.2 Atlantic Towing Limited (ATL)

In accordance with the Offshore Strategic Energy Agreement (OSEA) between Encana and the Province of Nova Scotia, ATL was awarded the contract for supply of a manned new-build supply vessel to support the production phase of Deep Panuke. Irving Shipbuilding Inc., an affiliate of ATL and part of J.D. Irving Limited, was tasked with design, construction and delivery of the vessel. In undertaking such work, Irving Shipbuilding expended a total effort of 603,306 Nova Scotian person hours by the end of 2010.

Named the *Atlantic Condor*, the vessel was delivered in Q1 2011 and underwent sea trials in February 2011. Moving forward into production, the *Condor* will be utilized to undertake supply runs to and from the Deep Panuke field, and to conduct stand-by activities at the location of the PFC.

4 PROCUREMENT AND PROJECT OPPORTUNITIES

4.1 Principles and Processes

Encana and its contractors satisfy requirements for the acquisition of goods and services in accordance with the following as described in the Canada-Nova Scotia Benefits Plan for the Project:

- public notification of expressions of interest (EOI) and public notification of lists of bidders and awards;
- meetings, open houses and broad distribution of project supporting materials such as the quarterly newsletter to ensure public awareness of Project requirements and timing associated;
- formal, competitive request for proposal (RFP) packages consisting of contract terms and conditions, guidance to bidders, and Tender Forms intended to promote Canada-Nova Scotia Benefits, opportunities for disadvantaged individuals or groups, and to facilitate evaluations;
- sealed bids, pre-determined evaluation criteria, and formal clarifications;
- multi-disciplinary input to ensure acquisitions are made on the basis of total best overall value, where “best value” is defined as a blend of total cost, quality, technical suitability, reliability, delivery and assurance of supply, while at the same time meeting or exceeding safety and environmental standards; and,
- de-briefs to unsuccessful bidders on an as-requested basis to facilitate opportunities for improvement.

Respondents to EOI’s are evaluated based on factors such as:

- formal environment, health, and safety (EHS) management systems;
- compliance with quality requirements, such as a formal quality management system (QMS) that meets the requirements of ISO 9001:2000;
- corporate status, financial capability, insurance cover, and ability to post financial securities;
- technical suitability of proposed equipment, machinery, tools, goods, processes, and programs; and,
- organization, experience, availability to do the work, proposed subcontractors, and qualifications of proposed personnel.

As noted in the Original Assessment, local suppliers have demonstrated a high level of familiarity about the qualifications for participation and have a full understanding of how to participate in the bidding for procurement opportunities.

4.2 Canada – Nova Scotia Benefits

Encana is committed to providing opportunities for Nova Scotian and Canadian companies through employment, procurement, and contracting on an internationally competitive basis, with full and fair opportunity for Canadians, and first consideration for Nova Scotians, where competitive on a “best value” basis.

4.3 Response to RFP's

The RFP is a package necessary for participation in the Deep Panuke Project and can be extensive. Past submissions of this report have suggested that:

- preparation of responses can require significant effort at significant cost; and,
- some bidders choose not to submit proposals after receiving the RFP package because of the complexity of the requirements.

Encana has indicated a willingness to work with bidders through providing de-briefs or additional guidance with respect to qualification requirements where requested.

4.4 Contractor Selection

Contractor selection is based upon an evaluation of bidders' submissions with respect to objective and pre-determined selection criteria focused on "best value". Such criteria may include:

- Commercial acceptability (equalized cost, schedule, terms, financial);
- Technical suitability of design, construction, commissioning and life of facility;
- Present capacity / forward workload;
- Previous experience with similar scope of work;
- Contractor capability to control and manage all aspects of the work;
- Experience, performance and support during operational phase;
- Commitment to, and alignment with, Project objectives;
- Compliance with specific technical design and performance;
- EHS-Q management system; and,
- Compliance with Encana's Canada-Nova Scotia benefits principles and requirements.

4.5 Outcomes

Past submissions of Encana's Supplier and Infrastructure Assessment have suggested that:

- some proposals by local companies do not meet the requirements of the RFP or do not provide required information in a satisfactory manner; and,

- other reasons for unsuccessful proposals from local companies include technical or operational shortcomings, lack of experience, failure to provide evidence of financial capability, inadequate EHS and QMS systems, lack of qualified personnel, equipment and facilities, inability to comply with contractual terms, inability to meet insurance requirements, and failure to be competitive on a best value basis.

During the production phase of Deep Panuke, it is anticipated that participation by local bidders will increase. Packages will generally be of smaller size and scope, and more suited to the capacity and established skill sets and proven expertise of local companies. In addition, local suppliers will be at a direct advantage as a result of their proximity to the Deep Panuke field. Nova Scotian suppliers that can satisfy best value requirements and the need for a responsive, reliable supply chain are at a direct advantage for business opportunities.

5 SUPPLIER CAPABILITY - CONCLUSIONS

Conclusions regarding the challenges as reported in previous Supplier and Infrastructure Assessments remain unchanged at this time – specifically:

1. A lack of capacity within the province for heavy construction of large offshore production facilities due to the intermittent nature of investment by oil and gas companies in field development offshore Nova Scotia;
2. Difficulty to execute construction of complex, large-scale offshore developments based on the capacities of local shipyards and fabrication facilities; and,
3. Diminished local presence of specialized, internationally headquartered oilfield contractors due to a recent lack of activity in offshore Nova Scotia.

However, as Deep Panuke transitions into the production phase, Nova Scotian and Canadian companies are expected to be competitive and successful in bidding for contracts on a best value basis for the types of goods and services required during operations.

SBM has ramped-up hiring and training of steady state personnel, and have engaged the local supply community for requirements to support operations. There will be requirements for services in logistics, marine and onshore transportation, production operations, maintenance, support services and engineering.

Encana and its contractors will continue to consult with and communicate opportunities to the supply community. Nova Scotian and Canadian suppliers will provide goods and services to the Deep Panuke project throughout the remainder of the development phase, into the operations phase, and throughout the life of the field.