

## Clarification # 4

### RFP # 2011/L002 - LNG Floating Storage & Regasification Terminal December 1, 2011

#	Clarification Requested	Response
1	What are the requirements for disposal of dredged material.	Any requirements for the disposal of dredged material should be clarified with the National Environmental & Planning Agency (NEPA), attn.: Michelle Grant, email @ <a href="mailto:MGrant@nepa.gov.jm">MGrant@nepa.gov.jm</a>
2	Are there any known environmental mitigation issues to be carried out?	Any environmental issues that might currently exist in relation to this project should be clarified with the National Environmental & Planning Agency (NEPA), attn.: Michelle Grant, email @ <a href="mailto:MGrant@nepa.gov.jm">MGrant@nepa.gov.jm</a> .
3	Confirm that HDD is required for the shore crossing to a water depth of 10m, per Section 12.4.i of the Basis of Design.	Alternatives to the use of HDD would be acceptable, subject to the Contractor securing permission from the National Environmental Planning Agency (NEPA), based on an environmental justification.
4	How long in advance it is possible to know that a hurricane is coming?	The Office of Disaster Preparedness & Emergency Planning - ODPEM ( <a href="http://www.odpem.org.jm">www.odpem.org.jm</a> ) and the Meteorological Service of Jamaica ( <a href="http://www.metservice.gov.jm">www.metservice.gov.jm</a> ) issue bulletins in a timely manner, from 72 >> 48 >> 36 >>24 >>12 hours if a threat faces the island. There is also the USA's National Oceanic and Atmospheric Administration ( <a href="http://www.NOAA.gov">www.NOAA.gov</a> ) and the National Hurricane Center ( <a href="http://www.NHC.noaa.gov">www.NHC.noaa.gov</a> ) that provide external support.

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5	<p>It is possible to provide electricity to the Jetty from an onshore main electrical generator?</p> <p>You mention that an electrical supply of 400V (50 Hz) is available onshore. Can you provide Electrical Power of this supply, and location?</p>	<p>Electricity can be sourced from the onshore electricity grid. Bidders would need to contact the Jamaica Public Service Company (JPSCo) directly to arrange this.</p>
6	<p>Please provide minimum and maximum natural gas pressure to provide to the three Clients.</p>	<p>Per Section 2.10.2 of the Basis of Design, which was included as Attachment 2 of the RFP, the following is stated:</p> <p>The inlet operating pressure of the gas export pipeline is dictated by the end-user supply pressure requirements. The desired operating pressure requirement at the delivery point into the pipeline is between 40 and 95-barg. Given the pressure required at the pipeline inlet is dependent on the gas export rate, it is advantageous to provide some design margin in the regasification system and export pipeline pressure rating to enable future operation at higher pressures, thereby enabling supply to additional users. To this end, the regasification system equipment shall be rated for gas delivery pressures to the pipeline of up to 100-barg.</p>
7	<p>Please confirm number and location of required Gas Metering Skids.</p>	<p>Per Section 13.1 of the Basis of Design, which was included in the RFP as Attachment 2, the Fiscal Meter Skids shall be within the boundaries of the Onshore Receiving Facility (ORF). Also, per Section 13.6 of the Basis of Design, the Fiscal Metering Skids shall be spared to allow for</p>

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		maintenance of the meters. There should be one meter skid per end-user. Therefore, three (3) meter skids are required.
8	In the Basis of Design, WorleyParsons references are mentioned, such as “Jamaican LNG FSRU, LNG FSRU Functional Specification”, “Jamaican LNG FSRU, Jetty Moored FSRU Functional Specification” and “Jamaican LNG FSRU, FSRU Operating Philosophy”. Can you please provide these references?	<p>The relevant technical specifications prepared by WorleyParsons can be found in the Attachments 2-10 which are attached to the RFP document.</p> <ul style="list-style-type: none"> <li>• Attachment 02 - Basis of Design</li> <li>• Attachment 03 - SRT Scope of Work</li> <li>• Attachment 04 - Pipeline &amp; ORF Scope of Work</li> <li>• Attachment 05 - Pipeline &amp; ORF Functional Specification</li> <li>• Attachment 06 - Regas Plant Functional Specification</li> <li>• Attachment 07 - FSRU Functional Specification</li> <li>• Attachment 08 - Jetty Design Philosophy</li> <li>• Attachment 09 - Pipeline &amp; ORF Operating Philosophy</li> <li>• Attachment 10 - FSRU Operating Philosophy</li> </ul>
9	<p>Chapter 12.4 “Shore approach Design” indicates: “Shore crossing shall be done by means of HDD and the exit point of HDD section shall be at water depth of -10 m with respect to LAT”.</p> <p>According to existing bathymetries, this prescription would lead to a length of 2 km for the HDD. This value is at the limit of the present</p>	<p>Alternatives to the use of HDD are acceptable, subject to the Contractor securing permission from the National Environmental Planning Agency (NEPA), based on an environmental justification.</p>

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	<p>technology, as the maximum lengths worldwide at around this value.</p> <p>The high diameter of the HDD jeopardizes the prescribed works' feasibility. Assuring it would need duly geotechnical surveys, at the offshore area, with the aim of analyzing if non-suitable materials are present (like fractured or very permeable rocks, boulders, etc.)</p>	
10	<p>Is there an Environmental Impact Assessment for the works that are subjected to tender (jetty and gas pipeline)? Are there any environmental prescriptions to be respected? Conclusions from Onshore regasification Plant EIA are all applicable for the new tendered works?</p>	<p>An Environmental Impact Assessment has not been initiated for the LNG Floating Storage &amp; Regasification Terminal. This shall be the responsibility of the Contractor after it has been selected and the Terminal Use Agreement has been executed.</p>
11	<p>In order to adjust our offer, please indicate if it would be possible to reduce the length of the HDD, ending at a point with a higher level than -10 LAT.</p>	<p>Alternatives to the use of HDD are acceptable, subject to the Contractor securing permission from the National Environmental Planning Agency (NEPA), based on an environmental justification.</p>
12	<p>We would be interested in submitting a proposal on a EPC lump sum price basis of the LNG &amp; GNC transfer terminal with Jetty Regasification Unit concept as described in our emails (only terminal part, not the LNG Floating Storage Unit in this case), is it acceptable for you?. Please take into account that maybe some of the</p>	<p>The RFP is structured on a Build-Own-Operate-Transfer (BOOT) basis. As such, a bid comprising just an EPC proposal would not be acceptable.</p>

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	equipment within ORF could be installed in the jetty in this case, is it OK for you? Of course we can adjust our concept to your requests as much as possible.	
13	Is it possible to offer only one of the project's parts (Jetty Regasification facilities, or submarine pipeline or ORF)? Is it possible to offer 2 of the 3 project's parts? Or is it mandatory to offer Jetty + submarine pipeline + ORF?	The Government of Jamaica desires bid submissions that cover the entire scope of work as outlined in the RFP. This could be accomplished through one company or a consortium of companies in a joint-and-several arrangement.
14	If it is possible to offer part of the whole project, bid security would be the same as in RFP?	Please see response to Question # 13 above.
15	Can the dimensions of the shipping channel and turning basin be modified to minimize the dredging requirements?	<p>Table 6.2, page 22 of the Basis of Design which was attached to the RFP as Attachment 2, is hereby modified as follows:</p> <p style="padding-left: 40px;">Channel Width is specified as 4 x Beam dimension, based on SIGTTO Information Paper No. 14 (2000), "Site Selection and Design for LNG Ports and Jetties" (page 23) and PIANC Guidelines, "Approach Channels- Preliminary Guidelines"</p> <p style="padding-left: 40px;">This requirement may be relaxed to 3 x Beam dimension in the bid. This reduction is subject to confirmation by vessel manoeuvre simulations during the detailed engineering phase.</p> <p>Section 7.1 of the Basis of Design, included as Attachment 2 of the RFP, is hereby modified as follows:</p>

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		<p>Assuming the largest LNGC entering the facilities is a Q-Flex sized vessel (L = 345-m, B = 54-m, T = 12-m), the LNGC turning basin and the inner approach channel shall need to be dredged to the dimensions:</p> <p>a) LNGC turning basin depth ..... 13.2-m, relative to chart datum</p> <p>b) LNGC turning basin diameter ..... Nearshore jetty will need a dredged pocket approximately 600m x 400m, to include LNG Carrier &amp; FSRU</p> <p>c) Inner approach channel depth ..... 13.8-m, relative to chart datum</p> <p>d) Inner approach channel width ..... 162 m, with 3xBeam width relaxation</p>
16	<p><i>LNG tank design using membrane GT-No96 must be built using double deck. What is established in 16.2.1 Hull Design (page 398 of 668) about a single deck we understand that is not applicable to the ships using membrane tanks. Please confirm.</i></p>	<p>Yes, this is correct. The reference to a single deck in Section 16.2.1, Hull Design, of the Jetty Moored FSRU Functional Specification, which was included as Attached 7 in the RFP, should be disregarded.</p>