

# Santos

## Dorado Development Project

<b>Project</b>	Dorado Development Project												
<b>Package Title</b>	Vapor Recovery Unit												
<b>Reference Number</b>	<b>0D200-AKR-R-00-SA-000006-001</b>												
<b>Package Description/ Scope of Work</b>	<p>The Dorado Project is a greenfield oil development located offshore WA approximately 150km northwest of Port Hedland comprising of a Floating Production Storage and Offloading vessel (FPSO), Wellhead platform (WHP) and various subsea (SURF) equipment.</p> <p>The function of Vapour Recovery Unit (VRU) is to limit the operational emissions to the environment of hydrocarbon gas from a number of points in the process which would otherwise be vented to atmosphere. VRU's condition and compress this waste gas so that it can be re-purposed as a fuel gas</p> <p>As well as the specialist compressor/ blower, VRU packages are bespoke, non-proprietary equipment packages that comprise a single structural steel base frame with electrical drive motors together with ancillary lubricating oil, pneumatic and nitrogen supply interfaces, gas conditioning systems (Process coolers, liquid knock-out drums) and condensate (liquid) return to process pump(s). A typical VRU package possesses relatively complex control functionality to ensure their correct operation, safety and performance.</p> <p>The required Vapour Recovery packages are as follows;</p> <ul style="list-style-type: none"> <li>1 x 100% low pressure (possibly 2 x 100%) recovery gas compressor (rotary lobe or rotary vane type) driven by a variable speed 6 pole, approx 60kW, 690V electric motor. Approx. weight, 12 Tonnes. VRU shall comply with NOPSEMA requirements to ensure regulatory compliance</li> </ul> <p><b><u>Equipment Particulars:</u></b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>Mass Flow Rate at Inlet, kg/hr</td> <td style="text-align: center;">990 – 2,991</td> </tr> <tr> <td>Pressure at Inlet, barg</td> <td style="text-align: center;">0.02 – 0.08</td> </tr> <tr> <td>Pressure at Outlet, barg</td> <td style="text-align: center;">1.5</td> </tr> <tr> <td>Operating Temperature, Deg C</td> <td style="text-align: center;">35.6 - 43.51</td> </tr> <tr> <td>Cp/Cv</td> <td style="text-align: center;">1.133 – 1.212</td> </tr> <tr> <td>Compressibility</td> <td style="text-align: center;">0.990 – 0.994</td> </tr> </table>	Mass Flow Rate at Inlet, kg/hr	990 – 2,991	Pressure at Inlet, barg	0.02 – 0.08	Pressure at Outlet, barg	1.5	Operating Temperature, Deg C	35.6 - 43.51	Cp/Cv	1.133 – 1.212	Compressibility	0.990 – 0.994
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	<p>Supply of the package shall include design, manufacture, inspection, testing painting, preservation, packing and delivery incl. provision of documentation of the package</p> <p>Package shall be marinized suitably for offshore environmental conditions at the Dorado field</p> <p>Pre-Qualification Requirements:</p> <ul style="list-style-type: none"> <li>• Must have minimum 5 years' experience in supply to the oil and gas industry.</li> <li>• Must have a list of past offshore project experience and preferably in delivering to offshore Projects in Australian waters.</li> <li>• Must have existing capability &amp; capacity to deliver.</li> <li>• Must have an ISO quality system and OSHAS or similar certifications.</li> <li>• Must have storage capability for the manufactured products.</li> </ul> <p>Must be able to provide after-sales services during operations in Australia.</p>
<p><b>Specifications and Standards</b></p>	<p>The equipment shall be in compliance with National, International and Industry Standards, Australian and WA Regulatory requirements including, but not limited to the following;</p> <ul style="list-style-type: none"> <li>• NOPSEMA requirements to ensure regulatory compliance.</li> <li>• National Standard for Occupational Noise [NOHSC:1007, National Standard for Occupational Noise, National Occupational Health and Safety Commission, 2nd Edition, July 2000].</li> <li>• DNVGL-RU-OU-0102, DNV Rules for Classification of Offshore Units – Floating Production Storage and Loading Units.</li> <li>• DNVGL-OS-A101, Safety Principles and Arrangements.</li> <li>• DNVGL-OS-B101, Metallic Materials.</li> <li>• DNVGL-OS-D201, Electrical Installation</li> <li>• DNVGL-OS-E201, Oil and Gas Processing Systems.</li> <li>• Hull Piping: DNVGL-OS-B101/D101.</li> <li>• Hull Piping fittings: marine shipyard piping construction standard (as approved by Company).</li> <li>• Hull Pressure Vessels: DNV Rules for Classification - Ships Pt 4 Ch 7 "Boilers, pressure vessels, thermal oil installations and incinerators".</li> <li>• AS 1210-2010 Pressure Vessels, incl. amendment 1 &amp; 2</li> <li>• AS 1200-2015 Pressure Equipment.</li> <li>• AS 3788-2006 Pressure Equipment - In-service inspection.</li> <li>• ISO. 3702. Control and mitigation of fire and explosions on Offshore Prod Installations.</li> <li>• ISO.15156 Parts 1 to 3</li> <li>• EEMUA Document 191 Alarm system guidance.</li> <li>• ISO 13702 - Control and mitigation of fire and explosions on Offshore Prod Installations.</li> </ul>

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	<ul style="list-style-type: none"> <li>• IEC 60079 series – electrical Apparatus for Explosive Gas Atmospheres. Aligned with equivalent AS/NZ standards</li> <li>• IEC 60079-10, Explosive Atmospheres – Part 10-1: classification of areas – Explosive gas atmospheres. Aligned with equivalent AS/NZ standards</li> <li>• IEC 60079-14, Electrical apparatus for explosive gas atmospheres, Inspection and maintenance of electrical installations in hazardous areas (other than mines). Aligned with equivalent AS/NZ standards.</li> <li>• IEC 60079-17, Electrical apparatus for explosive gas atmospheres. Electrical installations in hazardous areas (other than mines) Aligned with equivalent AS/NZ standards.</li> <li>• IEC 61508 Functional safety of electrical/ electronic/ programmable electronic safety related systems. Aligned with equivalent AS/NZ standards.</li> <li>• IEC 61511 Functional safety. Safety instrumented systems for the process industry sector. Aligned with equivalent AS/NZ standards.</li> <li>• AS/NZS 3000:2018 Electrical installations design, construction and verification minimum requirements from Standards Australia.</li> </ul> <p>Compliance with Class Society rules</p>
<b>Delivery Place (if applicable)</b>	Singapore
<b>Full Scope Expression of Interest Closing Date</b>	<b>15-Nov-2021</b>
<b>Supplier Instructions</b>	<p>Supplier(s) are to express interest via <a href="#">ICN Gateway</a> where competency and previous positive experiences for similar projects can be demonstrated for equipment of a similar size and service.</p> <p>Supplier(s) will only be considered for receipt of the Tender if deemed suitably qualified by the Company's Procurement Entity.</p>
<b>Contact</b>	<p>All initial enquiries should be made through the Industry Capability Network Western Australia.</p> <p>Ray Loh  <a href="mailto:Ray.Loh@icnwa.org.au">Ray.Loh@icnwa.org.au</a>  +61 8 9365 7499</p>
<b>URL</b>	For more information about Santos please refer to their website <a href="http://www.santos.com">www.santos.com</a>