



<p>Package Number</p>	<p>11</p>
<p>Package Name</p>	<p>HYDRAULIC UTILITY SWIVEL (HUS) MODULES</p>
<p>Scope of Work (* To be confirmed)</p>	<p>The swivel system will provide full weather-vaning capabilities for the FPSO with respect to fluid transfer, electrical power, electrical signals and fiber optical signals.</p> <p>The hydraulic utility swivel (HUS) section is approximately 4 m high, split in two modules. The cores are hollow to allow the signal lines to feed through the center of the stack. The hydraulic utility swivel modules will be installed on top of the gas injection swivel module.</p> <p>Torque from the utility swivels will be taken up by separate sets of torque arms, one for each module.</p> <p>The connections on the geostationary side, inside the swivel stack, are made with tubing or hoses running down through the center bore of the fluid swivel.</p> <p>The connections on the rotating side of the swivel body, are made with tubing or hoses running routed with sufficient flexibility to take up turret movements.</p> <p>HUS main parts are made in A182 F316 forgings. Manufacturing process is characterized by very fine tolerance machining level.</p> <div style="display: flex; justify-content: space-around; align-items: center;">   </div> <p style="text-align: center;">Example arrangement of utility swivel in two modules</p>

Hydraulic utility swivel characteristics, module 1

Type & size of swivel paths in HUS module 1: (9 paths in total)	1 off 1", Oil filling for subsea HPU 1 off 1", ESD hydraulics (return) 1 off 1" Nitrogen 1 off 1" Plant Air 1 off 1" Closed drain 1 off 1" Riser annulus 1 off 1" Pig trap vent 2 off 1", Spare
Design pressure:	50 bar
Operational pressure	0-20 bar
Design temperature:	60°C max 0°C min
Operating temperature:	Ambient
Type of process seals:	Spring and process activated (non-elastomeric)
Leak detection and recuperation:	Yes (common line for module)
Rate of use:	Continuous
Type of connections on geostationary side:	Hoses and BSP fittings
Type of connections on vessel side:	Hoses and BSP fittings
Size of center bore for cables and hoses:	Ø300
Material:	A182 F316

Hydraulic utility swivel characteristics, module 2

Type & size of swivel paths in HUS module 2: (8 paths in total)	1 off 1", Lean MEG low dose 1 off dual* 1", Lean MEG high dose 1 off ½", Scale inhibitor 1 off ½", Generic chemical injection 1 off ½", ESD hydraulics (supply) 1 off ½", Spare 2 off 1", Spare
Design pressure:	520 bar
Operational pressure	431 bar
Design temperature:	60°C max 0°C min
Operating temperature:	Ambient
Type of process seals:	Spring and process activated (non-elastomeric)
Leak detection and recuperation:	Yes (common line for module)
Rate of use:	Continuous
Type of connections on geostationary side:	Hoses and BSP fittings
Type of connections on vessel side:	Hoses and BSP fittings
Size of center bore for cables:	Ø250
Material:	A182 F51

Schedule:

Estimated package Sub-Contract Award Q2 2022
 Estimated Package Delivery Time: 7 months FCA factory

Project Registration

Santos is committed to ensuring Australian Industry the opportunity to participate in the Barossa Project. Expressions of Interest are invited from contractors and suppliers with the relevant capability and capacity to undertake the scope of work.

This is a request for specific expressions of interest. Contractors and suppliers will be considered for prequalification and tender if suitably qualified against this package.

Note that an important part of the project registration process is to register an Expression of Interest at the correct Scope level.

Scope level definition:

Full scope: Able to produce / supply all the package.

Partial scope: Able to produce / supply one or more of the sub-packages.

All registrations are to be completed via ICN Gateway BarossaOffshore.icn.org.au. Please contact the ICNNT if registration assistance is required. Contact details: (08) 8922 9422 or resources@icnnt.org.au.

Project Website: Santos Australia