

<b>Package Number</b>	TBA
<b>Package Name</b>	SHELL AND TUBE HEAT EXCHANGERS (Misc.)
<b>Scope of Work (* To be confirmed)</b>	<p>Supplier to quote full or part of the scope specified below for supply of Shell &amp; Tube Heat Exchangers - Misc. Company reserves the right to award any part of the scope to any one or more Suppliers, depending on the capability of the Suppliers.</p> <p>Scope of Work for SHELL AND TUBE HEAT EXCHAGNERS, including</p> <ul style="list-style-type: none"> <li>• Scope shall include design (Thermal and Mechanical), documentation, materials, fabrication, inspection, testing, surface preparation and painting, preparation for shipment, supply and performance of Shell and Tube Heat Exchangers.</li> <li>• The shell and tube exchangers cover various services with duty ranging from 66 kW to about 19 MW per exchanger (can be accomplished in multiple shells if required).</li> <li>• Pressure classifications range from 300# to 600# rating on the tube side and 300# rating on the shell side as per ASME B16.5.</li> <li>• Thermal sizing of Exchangers using latest HTRI/HTFS with thermal/hydraulic performance guarantee and Mechanical Designs preferably with latest PVElite Software with mechanical design and workmanship guarantee.</li> <li>• All heat exchangers shall be provided with 10% margin on area calculated under fouled condition.</li> <li>• Heat Exchangers shall be designed in accordance with ASME Sec VIII Div. 1, TEMA Class R and API 660 (Latest Codes) and applicable Project Specifications and local Codes.</li> <li>• All Heat exchangers shall be ASME Code U-Stamped.</li> <li>• Exchangers to be installed on a floating production storage and offloading (FPSO) vessel. Thus, offshore experience is required.</li> <li>• Material of construction for shell side is Carbon Steel, for tubes in Corrosion Resistant Alloy (CRA) and tube sheet/Channel assembly is CS + CRA clad/weld overlay. Some of the heat exchangers are of totally of CS/LTCS.</li> <li>• Fabrication and hydro testing of each unit on both Shell side and tube side separately.</li> <li>• External Surface preparation and painting of each unit.</li> <li>• Long term preservation and Preparation for shipment for each exchanger.</li> <li>• Submission of relevant documentation (data sheets, drawings, code calculations, MDRs, operating manual, etc.) for operation and maintenance of each unit.</li> <li>• Technical information in table below is subject to change based on selection of associated packages.</li> </ul> <p>Potential scope split being considered as indicated in below table:</p>

Tag No	Service / Description	Sparing %	Capacity	Indicative Size	Design Pressure barg	Design Temperature °C	Material selection needs to be finalised pending detailed corrosion assessment
POTENTIAL SUB-PACKAGE 1							
20-HA-1072 A	CONDENSATE STABILIZER OVERHEAD COOLER A	100	742kW	2750 (L) X 450 (ID) X 1200 (H)	SHELL: FV/18. TUBE: FV/19	-29/232	CARBON STEEL+ 3mm C.A. (SHELL)/ CARBON STEEL (TUBE)
20-HA-1072 B	CONDENSATE STABILIZER OVERHEAD COOLER B	100	742kW	2750 (L) X 450 (ID) X 1200 (H)	SHELL: FV/18. TUBE: FV/19	-29/232	CARBON STEEL+ 3mm C.A. (SHELL)/ CARBON STEEL (TUBE)
20-HA-1130 A	CONDENSATE COOLER A	100	3200 KW	6000 (L) X 900 (ID) X 1500 (H)	SHELL: FV/18. TUBE: FV/19	-29/232	CARBON STEEL+ 3mm C.A. (SHELL)/ CARBON STEEL (TUBE)
20-HA-1130 B	CONDENSATE COOLER B	100	3200 KW	6000 (L) X 900 (ID) X 1500 (H)	SHELL: FV/18. TUBE: FV/19	-29/232	CARBON STEEL+ 3mm C.A. (SHELL)/ CARBON STEEL (TUBE)
45-HA-6920	FUEL GAS SUPERHEATER	100	681 KW	3000 (L) X 600 (ID)	SHELL: FV/41. TUBE: FV/60	SHELL: - 29/232. TUBE: - 46/232	CARBON STEEL+ 3mm C.A. (SHELL)/ 316 L SS (TUBE)
POTENTIAL SUB-PACKAGE 2							

	22-HA-6503 A	VAPOUR RECOVERY GAS COOLER STAGE 1 A	100	104 KW (HOLD)	7500 (L) X 1120 (ID)	SHELL: FV/18. TUBE: FV/15	-29/170	SHELL CARBON STEEL/ TUBE 316 SS
	22-HA-6503 B	VAPOUR RECOVERY GAS COOLER STAGE 1 B	100	104 KW (HOLD)	7500 (L) X 1120 (ID)	SHELL: FV/18. TUBE: FV/15	-29/170	SHELL CARBON STEEL/ TUBE 316 SS
	22-HA-6506 A	VAPOUR RECOVERY GAS COOLER STAGE 2 A	100	66 KW (HOLD)	7500 (L) X 1120 (ID)	SHELL: FV/18. TUBE: FV/19	-29/180	SHELL CARBON STEEL/ TUBE 316 SS
	22-HA-6506 B	VAPOUR RECOVERY GAS COOLER STAGE 2 B	100	66 KW (HOLD)	7500 (L) X 1120 (ID)	SHELL: FV/18. TUBE: FV/19	-29/180	SHELL CARBON STEEL/ TUBE 316 SS
	28-HA-6805 A	CO2 PERMEATE COMPRESSOR DISCHARGE COOLER STAGE-1 A	33.3	5800 kW (HOLD)	8500 (L) X 878 (ID)	SHELL: FV/18. TUBE: FV/35	-29/180 (HOLD)	CARBON STEEL+ 3mm C.A. (SHELL)/ CARBON STEEL (TUBE)
	28-HA-6805 B	CO2 PERMEATE COMPRESSOR DISCHARGE COOLER STAGE-1 B	33.3	5800 kW (HOLD)	8500 (L) X 878 (ID)	SHELL: FV/18. TUBE: FV/35	-29/180 (HOLD)	CARBON STEEL+ 3mm C.A. (SHELL)/ CARBON STEEL (TUBE)
	28-HA-6805 C	CO2 PERMEATE COMPRESSOR DISCHARGE COOLER STAGE-1 C	33.3	5800 kW (HOLD)	8500 (L) X 878 (ID)	SHELL: FV/18. TUBE: FV/35	-29/180 (HOLD)	CARBON STEEL+ 3mm C.A. (SHELL)/ CARBON STEEL (TUBE)
	28-HA-6808 A	CO2 PERMEATE COMPRESSOR DISCHARGE COOLER STAGE-2 A	33.3	6200 kW (HOLD)	8500 (L) X 878 (ID)	SHELL: FV/18. TUBE: FV/85	-29/180 (HOLD)	CARBON STEEL+ 3mm C.A. (SHELL)/ CARBON STEEL (TUBE)
	28-HA-6808 B	CO2 PERMEATE COMPRESSOR DISCHARGE COOLER STAGE-2 B	33.3	6200 kW (HOLD)	8500 (L) X 878 (ID)	SHELL: FV/18. TUBE: FV/85	-29/180 (HOLD)	CARBON STEEL+ 3mm C.A. (SHELL)/ CARBON STEEL

								(TUBE)
28-HA-6808 C	CO2 PERMEATE COMPRESSOR DISCHARGE COOLER STAGE-2 C	33.3	6200 kW (HOLD)	8500 (L) X 878 (ID)	SHELL: FV/18. TUBE: FV/85	-29/180 (HOLD)	CARBON STEEL+ 3mm C.A. (SHELL)/ CARBON STEEL (TUBE)	
Contract Award Q3 2021*; Delivery Q3 2022*								

**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](http://BarossaOffshore.icn.org.au). Please contact the ICNNT if registration assistance is required. Contact details: (08) 8922 9422 [or admin@icnnt.org.au](mailto:admin@icnnt.org.au).

Project Website: [Santos Australia](http://Santos Australia)