



## Shell CRUX

### Package Title

**Crux – Platform Topsides EPCI**

### Scope of Work

Shell Australia Pty Ltd. (*“Shell”*) is seeking Expressions of Interest (*“Eoi”*) from experienced and capable contractors to provide lump sum engineering, procurement, construction and installation services (EPCI) for the Crux Project’s Platform Topsides.

#### **Crux Project Overview**

The Crux gas field is located in Australian Commonwealth waters, within permit AC/RL9 in the East Browse basin. The title is operated by Shell (*82% equity*) on behalf of the other joint venture participants SGH Energy (*15%*) and Osaka Gas (*3%*).

The field is located ~620km NNE of Broome, ~300km from mainland Australia and ~160km NE of the Shell operated Prelude Floating Liquefied Natural Gas (*“FLNG”*) facility.

Crux’s remotely operated Not Normally Manned (*“NNM”*) platform concept dehydrates gas and condensate streams and exports a multiphase stream to the Prelude FLNG. The platform has a 550MMscfd capacity with five platform wells.

Key components of the Crux facility include:

- 1) Five dry tree wells tied back to the platform;
- 2) Fixed jacket structure with drilled and grouted piles;
- 3) NNM Platform topsides weight of approximately 10,000 tonnes dry weight
- 4) Single 26” multiphase export pipeline to Prelude;
- 5) Flexible riser and umbilical at Prelude;
- 6) Brownfield modifications at Prelude;
- 7) Fibre optic cable tied to the *“Fitzroy”* fibre optic backbone;

Front end engineering design of the Crux project commenced in January 2019.

#### **Scope Overview**

The Crux platform is Not Normally Manned (NNM) and this is a key success criteria for the topsides to achieve.

The platform topsides process is to essentially remove the water from the hydrocarbons prior to sending to Prelude FLNG. The wells fluids are cooled, split into gas, condensate and water via a 3-phase separator, the gas is dehydrated via a TEG dehydration system and the condensate is dewatered via coalescers, the gas and condensate are recombined and then sent to Prelude FLNG. The removed water is treated prior to discharge.

The topsides weight is expected to be under 10,000 tonnes.

The Crux topsides comprises the following main components:

- a) 5 off dry trees
- b) Inlet cooler
- c) 3 phase production separator
- d) TEG gas dehydration system
- e) Condensate dewatering system
- f) Produced water treatment
- g) Associated utilities including power generation
- h) Flare system
- i) Temporary refuge
- j) Helideck
- k) Fire and safety systems (F&G, TEMPSC etc)
- l) "Walk to work" boat landing(s)

Note that there are no living quarters on Crux.

The successful contractor will be responsible for:

- a) Project management, design and installation engineering, and operational management required to perform the scope or work in a safe, robust and efficient manner.
- b) Detailed design, procurement, fabrication, loadout, transportation, installation, commissioning and handover of the platform topsides.
- c) Preparation of all as-built data and documentation including close-out reporting.

#### **Indicative Timeline**

Shell seeks to award this package at FID which is scheduled for Q2 2020.

The tender will be issued in Q3 2019 and the selected contractor will be advised by Q1 2020, but the Contract effective date will be dependent on the Project taking FID.

#### **Project Tenets**

The Crux Project is underpinned by five key tenets: ensuring Personal Safety and Process Safety, and meeting the Project Outcomes of NNM quality, competitive cost and schedule certainty.



Personal Safety

Safety is a core value of Shell and implicit in this is protecting the environment. We believe that we can execute the Crux project without the need to hurt people and to protect the environment. The safety of everyone involved in the Crux project from engineering, fabrication, construction and offshore installation, hook-up and commissioning through to operations must be addressed and everyone goes home safely.

Process Safety

The offshore production and processing of hydrocarbons has inherent risk and there are numerous examples of offshore incidents that have led to people being killed and severely injured or resulting in significant environmental impacts. Using an inherently safe design approach; the design of the offshore facilities needs to reduce this risk to as low a reasonably practical, while also preserving the Not Normally Manned (NNM) performance criteria, using creative ideas during construction, installation, commissioning and operations activities.

All of tenets are critically important for the Platform topsides, with NNM quality being explicitly related to the Topsides scope of work.

As such experience in delivering a NNM facility is an important factor in the selection of the Contractor(s).

**Expressions of Interest - Instructions**

Please note this is an EoI to develop a better understanding of capability and interest in the market.

The project is subject to future corporate approvals, and the scopes of the EoI are subject to change pending project demand and timelines.

Contractor(s) are to express interest via the Industry Capability Network (“ICN”) Gateway where competency can be demonstrated. Electronic EoIs will be accepted for full scope only.

Contractors will only be considered for prequalification to tender if deemed suitably qualified by Shell.

All initial enquiries can be made through ICN including assistance with EoI submissions on the ICN Gateway.

This package is one of 3 packages that will be presented in the Crux Project Briefing session to be held on 22 Feb 2019.

	Final responses to this EoI should address the three (3) areas of focus expanded below, including your business details. The information below is in a word document to download when you submit your Full package registration on ICN Gateway.
<b>Area of Focus 1 - Capability and Track Record</b>	<p><b>Prospective contractors are sought with a proven capability and successful track record in delivering similar projects, preferably in offshore northwest Australia.</b></p> <p><b>In your response to this EoI please clearly summarize your capability and successful track record in:</b></p> <ol style="list-style-type: none"> <li><b>1. Detailed design of NNM topsides</b></li> <li><b>2. Procurement</b></li> <li><b>3. Fabrication of topsides and pre-commissioning in the fabrication yard</b></li> <li><b>4. Transportation and installation of an integrated deck via float-over</b></li> <li><b>5. Hook-up and “cold” commissioning of topsides (including consideration of using specialist CSU subcontractor)</b></li> <li><b>6. Support to Shells’ Operations team for the “hot” commissioning</b></li> </ol>
<b>Area of Focus 2 - Execution Strategy</b>	<p><b>It is recognized that prospective contractors may partner or engage key subcontractors to successfully deliver the full scope of work.</b></p> <p><b>In your response to this EoI please summarize what execution or contracting strategy would be employed to deliver the scope or work, specifically:</b></p> <ol style="list-style-type: none"> <li><b>1. Which scope of work would be undertaken by which party. What contractual arrangement(s) would link parties together. What track record or experience do the parties have working together.</b></li> <li><b>2. Indicative fabrication yard(s).</b></li> <li><b>3. Indicative location of project office(s).</b></li> </ol>
<b>Area of Focus 3 - Synergies with Jacket/piles</b>	<p><b>Securing a single EPCI to deliver both Crux’s substructure and topsides is recognised as a potential opportunity for synergy during the execute phase of the project.</b></p> <p><b>In your response to this EoI please clarify is this potential opportunity is one that you would pursue and, if so, how it would be realised.</b></p>
<b>Business Details</b>	<p><b>Please also provide the following business details:</b></p> <p><b>Company Name</b>  <b>Contact Name</b>  <b>Contacts Details</b>  <b>Company Location</b></p>
<b>Contacts</b>	<p>For NT companies:  David Royle, Resources Coordinator  Industry Capability Network Northern Territory  T: (08) 8922 9424 E: <a href="mailto:david.royle@icnnt.org.au">david.royle@icnnt.org.au</a></p> <p>For all other companies:</p>

	Linus O'Brien, Principal Supply Chain Consultant Industry Capability Network of Western Australia T: (08) 9365 7556 E: <a href="mailto:Linus.OBrien@icnwa.org.au">Linus.OBrien@icnwa.org.au</a>
<b>Eol Closing Date</b>	11 March 2019