Husky Energy Inc. (Husky), operator of the White Rose field and satellite extensions, is seeking Expressions of Interest (EOIs) from qualified and experienced companies/groups for the provision of:

**WHP Marine Operations Services**

The services required include, but are not limited to, the various marine operations required to install the wellhead platform (WHP) in the White Rose field, approximately 350 kilometres offshore Newfoundland & Labrador (NL). The WHP consists of topsides supported by a concrete gravity structure (CGS). The topsides and CGS will be constructed at different locations and will be mated at the offshore location using a specialized installation vessel. The project is subject to final company, partner and regulatory approvals.

**General Requirements**

Interested companies/groups must be qualified to conduct the work as outlined in the Scope of Services and are asked to demonstrate their capabilities and experience via a formal response to the Prequalification Questionnaire. The Prequalification Questionnaire is largely based on Husky Operational Integrity Management System (HOIMS) and contains detailed questions regarding your company’s technical, HSE-Q and commercial capabilities.

To demonstrate capabilities and experience, interested companies/groups must submit documented evidence of performing similar marine operations in strict accordance with relevant industry regulations, codes and standards and statutory authorities appropriate to execute the Scope of Services.

Given the extent of the marine operations services required, consideration will be given to companies/groups that can provide a total solution for one or more of the elements listed in the Scope of Services.

**Scope of Services**

Interested companies/groups are invited to tender a proposal for one or more of the elements listed below.

1. Provisions for Dredging
3. Provisions for Float Out of CGS
4. Provisions for Installation of Solid Ballast – Inshore
5. Provisions for Tow to White Rose Field and Installation of CGS
6. Provisions for Offshore Installation of Scour Protection
7. Provisions for Installation of Solid Ballast – Offshore
8. Provisions for Transocean Transport of Topsides Appurtenances
9. Provisions for Initial Hook-up of Topsides to CGS

Interested companies/groups must have the capability to provide project planning, management, supervision, personnel, vessels, equipment and any other aspects of the operation necessary to complete the element or group of elements for which they want to tender a proposal.

The marine warranty surveyor, GL Noble Denton, guidelines will be used for the planning, engineering and execution of the full extent of the WHP marine operations.

All work shall be done strictly in accordance with and at all times comply with all relevant provincial and federal regulations, codes and standards and international authorities appropriate to the WHP marine operations scope of services.

All vessels used in Canadian waters must be commercially certified by Transport Canada.

The requirements for each element are described below.

1. Provisions for Dredging

Dredging is required in defined areas of interest within Argentia Harbour to warrant that the CGS float out route provides the underkeel and side clearances compliant with marine warranty guidelines.

The successful bidder shall:

- Perform hydrographic surveys to ensure the clearances are compliant. Surveys shall meet Canadian Hydrographic Service (CHS) survey precision and quality requirements and ensure that the spatial uncertainty of data is adequately quantified.

- Ensure that appropriate mitigation methods are in place to prevent siltation of the water during dredging.

- Mobilize dredging equipment in three (3) areas of interest:
  - Northern Dredge Corridor,
  - Southern Dredge Corridor, and
  - Bund Removal.

The areas of interest are shown below in Figure 1.
Northern and Southern Dredge Corridors

Water depths found in the dredge corridors vary nominally from 10m to 20m below chart datum (CD). CD in Argentia harbour is 0.193m below Lower Low Water Large Tide (LLWLT).

The successful bidder shall dredge the corridors to 19.5 m below CD with side slopes at 1 to 3, vertical to horizontal respectively using a trailing suction hopper dredge (TSHD).

The total estimated quantity of material to be dredged is approximately 2,700,000m$^3$.

The breakdown of the total estimated quantity is noted as follows:

- Northern Dredge Corridor: ~2,050,000m$^3$
- Southern Dredge Corridor: ~650,000m$^3$

The successful bidder shall install a monitoring system to observe the dredged area for potential backfilling. Monitoring shall be operational upon completion of dredging activities and continue until the start of the activities required to tow the CGS out of the graving dock. Maintenance dredging will be required to remove any obstructing backfill.

Corridor dredging activities are tentatively planned to take place from Q4 2015 to Q2 2016 dependent on the timing for getting applicable permits in place.

Bund Removal

The graving dock will be flooded with graving dock gates and bund in place.

The successful bidder shall dredge the bund area to form a channel at the graving dock entrance that has a minimum depth of 19.5 m below CD with side walls at 1 to 2, vertical to horizontal respectively.

The total estimated quantity of material to be removed is approximately 583,000m$^3$.

The breakdown of the total estimated quantity to be removed consists of two (2) material groups. Type and associated quantity for each material group is noted as follows:
• Portion of bund above waterline: ~53,000m³
• Portion of bund below waterline: ~530,000m³

The successful bidder shall:

- Remove the portion of bund above waterline by land-based equipment and transport to The Pond to cap off the area previously infilled using material excavated during the construction of the graving dock.

- Dredge remaining portion of the bund using a cutter suction dredge (CSD). The dredging operation shall include all equipment and resources required to transport dredged material to the disposal site.

The dredging activities are tentatively planned to take place in Q2 2017.

Erosion protection will be required in the channel formed by dredging the bund at the graving dock entrance.

The successful bidder shall:

- Place scour protection in specified areas on the graving dock channel side walls to provide suitable erosion protection.

- Procure and install scour protection to side walls of the graving dock channel to provide suitable erosion protection. Scour protection shall consist of one (1) layer of geotextile and two (2) layers of armour stone.

The total estimated quantity of material required to provide scour protection is comprised of two (2) material types. A description and associated quantity for each material type is noted as follows:

- Geotextile: ~11,000m².
- Armour stone: ~12,000m³.

The scour protection shall be installed after the channel is formed by dredging the bund and prior to commencement of activities required to remove dock gates and float out the CGS.

**Disposal Site**

The disposal site for the dredged material is yet to be finalized.

Husky’s expectation is that the material will be used to either reclaim shoreline on the Argentia Peninsula within five (5) kilometres of the dredged areas or disposed of by ocean dumping.

Dredged material used to reclaim shoreline will require procuring and placement of rock required to build the revetment and provide armour stone protection around the perimeter of the reclaimed area.

The total estimated quantity of rock material required to build revetment is approximately 500,000m³.

Disposal of dredge material will be performed in parallel with the dredging operations.

2. **Provisions for Marine Operations associated with Dock Gates**

The graving dock gate system comprises of two (2) dock gates kept in place by a sill structure and concrete abutments. The overall nominal dimensions are the same for each gate at 24m high x 19.5m wide x 70m long with an approximate displacement of 21,500Te at float out with a not to exceed draft of 17.5m. Each dock gate will be outfitted with towing/mooring connections, ballasting system, power source and necessary navigational aids.
The successful bidder shall:

- Provide and operate the vessels, personnel, towing apparatus, fendering and associated equipment required to remove, temporarily moor and reinstall the two (2) dock gates using their own buoyancy.

- Re-install and test the integrity of the dock gates after all CGS float out operations associated with the graving dock have been fulfilled.

The timing for removal of the dock gates will coincide with dates tentatively planned for the float out of the CGS.

3. Provisions for Float Out of CGS

The CGS will be completely dry-built in the graving dock. The CGS has an approximate displacement of 216,000Te at float out with a not to exceed draft of 18.5m based on the overall dimensions shown in Figure 2. Steel skirts will extend 0.5m below the underside of the base slab. The CGS will be outfitted with towing/mooring connections, ballasting system, power source and necessary navigational aids.

![Figure 2 - CGS Profile](image)

The successful bidder shall:

- Provide and install the rigging and associated equipment required to temporarily hold the CGS on station during float off operations in the flooded graving dock.

- Provide vessels, personnel, towing apparatus, and associated equipment required to provide the station keeping capability necessary to tow the CGS out of the graving dock to a prearranged location in Placentia Bay, NL.

- Provide and install the mooring system required to temporarily keep the CGS on station at the prearranged location during installation of solid ballast.
The activities required to tow the CGS out of the graving dock to a prearranged location in Placentia Bay are tentatively planned to take place in Q2 2017.

4. Provisions for Installation of Solid Ballast - Inshore

Solid ballast shall be installed in the CGS perimeter cells to achieve the required draft for tow to field. The location for installing solid ballast is yet to be finalized.

The CGS will be floating and outfitted with mooring connections, ballasting system, power source and navigational aids necessary to accommodate the solid ballasting activities.

The successful bidder shall:

− Provide the bulk carrier(s), personnel, monitoring services and associated equipment required to uniformly place the required quantity of solid ballast in all perimeter cells. All cells shall be flooded prior to commencing with solid ballasting operations.

− Outfit bulk carrier(s) with a conveyor system appropriate for discharge of solid ballast directly in the 24 open top perimeter cells of the CGS. Discharge operations shall be performed by qualified and experienced marine personnel while being moored adjacent to the floating CGS.

− Provide land-based or ship mounted self-loading equipment required for loading solid ballast materials from dockside to the vessel(s).

− Procure and install temporary equipment, safety systems and accesses required to complete the solid ballasting operation. All temporary installations shall be removed prior to commencing tow to field.

− Procure and install solid ballast that consists of iron ore with a 2.2te/m3 dry bulk density at a pre-designated location in Placentia Bay, NL. The solid ballast shall be placed uniformly in 24 open perimeter cells of the CGS while moored in a prearranged location. All solid ballast shall be washed to remove any sediment.

The total estimated quantity of solid ballast required to be installed inshore is approximately 80,000Te.

The solid ballast activities are tentatively planned to take place in Q2 2017.

5. Provisions for Tow to White Rose Field and Installation of CGS.

The CGS will be towed approximately 280 nm from the inshore ballasting location to the White Rose field along a specified transit route for emplacement of the CGS in a predetermined location.

The successful bidder shall:

− Provide the ocean tugs, ROV services, towing apparatus, and associated equipment required to tow the CGS to the White Rose field. The length of the tow is currently assumed to be six (6) days based on preliminary assessment of available metocean data, bathymetry maps and nautical charts.

− Generate a voyage plan based on agreed warranty guidelines, naval architectural considerations, route specific hydrographic surveys, anticipated vessel traffic, detailed metocean data and Husky’s requirements for entry into the White Rose field. Voyage plan shall give due consideration to the timelines required by the project execution schedule and transportation windows based upon project specific weather forecasting.

− Operate and maintain the navigational aids, instrumentation, ballasting system and power sources installed on the CGS from commencement of the tow till the installation activities are complete.
Procure and install offshore the temporary equipment, safety systems and accesses required to complete the installation operations. All temporary works not required during the installation phase shall be removed prior to commencing water ballasting operations necessary to descend the CGS through the water column.

Remove all temporary works used during the installation phase once installation activities for emplacement of the CGS has been completed in accordance with previously agreed acceptance criteria.

Provide and install the temporary mooring system in the White Rose field to assist the tugs in maintaining station during the ballasting operations necessary to control the descent of the CGS through the water column and place in position on the seabed.

Retrieve and dispose of the temporary mooring system immediately upon acceptance of the emplacement of the CGS.

Tow to field and subsequent installation activities are tentatively planned to take place from Q2 2017 to Q3 2017.

6. Provisions for Offshore Installation of Scour Protection:

Scour protection shall be installed around the perimeter of the base of the in-place CGS in accordance with Figure 3.

The successful bidder shall:

- Provide the vessels, ROV services, personnel and associated equipment required to install the quantity of scour protection by means of rock dumping around the perimeter of the CGS. CGS shall be in place and meet all installation acceptance criteria prior to commencing with operations required to place the scour protection.

- Outfit vessel(s) with a fall pipe system appropriate for discharge of scour protection around the perimeter of the CGS. The discharge operations shall be performed by qualified marine personnel while maintaining station keeping moored adjacent to the in-place CGS.

- Provide land-based or ship mounted self-loading equipment required for loading bulk materials from dockside to the vessel(s).

- Perform hydrographic surveys to precision and quality requirements necessary to ensure the scour protection installed around the CGS can be adequately quantified.
The total estimated quantity of scour protection required to be installed offshore is approximately 5,000m³.

The installation of scour protection is tentatively planned to take place in Q3 2017, immediately upon completion of the CGS installation activities.

7. Provisions for Installation of Solid Ballast - Offshore

Solid ballast shall be installed in the CGS perimeter cells to achieve the required draft for tow to field. The location for installing solid ballast is yet to be finalized.

The successful bidder shall:

− Procure and install additional solid ballast that consists of iron ore with a 2.2te/m³ dry bulk density at the offshore location in the White Rose field.

− Provide the vessels, ROV services, personnel and associated equipment required to uniformly place additional solid ballast in all 24 open top perimeter cells of the CGS.

− Outfit vessel(s) with a fall pipe system appropriate for discharge of solid ballast into the open perimeter cells. The discharge operations shall be performed by qualified marine personnel and take place while maintaining station adjacent to the in-place CGS.

− Provide land-based or ship mounted self-loading equipment required for loading solid ballast materials from dockside to the vessel(s).

− Procure and install temporary equipment, safety systems and protection required where necessary to complete the solid ballasting operation. All temporary installations shall be removed upon completion of the ballasting operation.

The total estimated quantity of solid ballast required to be installed offshore is approximately 112,000Te.

The installation of solid ballast is tentatively planned to take place in Q3 2017, immediately upon completion of the scour protection installation.

8. Provisions for Transocean Transport of Topsides Appurtenances

The location of the topsides fabrication yard is yet to be finalized. However, it is expected that the potential topside fabrication yard will be located in China, Korea or USA (Gulf of Mexico).

The successful bidder shall:

− Provide the vessels, personnel and associated equipment required to transport the topsides appurtenances and living quarters (LQ) modules from NL to the topsides fabrication yard for integration with topsides.

− Procure and install the equipment and material required to loadout and secure the topsides appurtenances and Living Quarters modules for transport.

The transoceanic transport of the topsides appurtenances and LQ modules is tentatively planned to take place from Q4 2015 to Q3 2016.

9. Provisions for Initial Hook-up of Topsides to CGS

The topsides will be mated with the CGS at the offshore location using a specialized installation vessel. Immediately after completion of mating activities, a dedicated team shall go on board the WHP to perform the initial HUC activities.

The initial HUC activities will be staged as follows:
Stage 1 – Secure and inspect topsides to CGS connection, and
Stage 2 – Hookup and commission life safety and safety critical systems

The successful bidder shall:

- Provide required marine vessel services, personnel, equipment and tools necessary to complete the initial HUC activities.
- Procure and install temporary equipment, safety systems and protection required where necessary to complete the initial HUC activities.
- Remove all temporary installations upon completion of the HUC activities.
- Perform the initial HUC activities safely and in compliance with regulatory requirements to a level that ensures that the remaining stages of the HUC work can be performed using normal operational logistics.

The initial HUC activities are tentatively planned to take place in Q3 2017.


The construction of the WHP will involve the fabrication of various components at multiple worldwide facilities. Each of these components will require discrete marine operations and transportation scenarios that will require timely delivery to fulfill Husky’s WHP project objectives.

It is Husky’s expectation that all detailed engineering and project management specific to this element, will be performed in the province of Newfoundland and Labrador.

The successful bidder shall:

- Provide engineering and naval architecture solutions, technical and commercial guidance, logistics support and project management for timely delivery of all marine related aspects of the WHP project. These aspects shall include, but are not limited to, the marine operations associated with dredging, dock gates, CGS, and topsides including placement of CGS, mating and hook-up of topsides to CGS and installation of solid ballast and scour protection.
- Provide the personnel and sub-contractors required to perform the marine and transportation engineering, naval architecture and logistics work required to ensure the marine operations, transportation and installation activities comply with WHP project objectives.
- Ensure that all loadout, marine activities and transportation required for delivery of the various WHP components are carried out in accordance with the applicable statutory laws and regulations of Canada; internationally recognized maritime regulations for the safety and security of shipping and prevention of marine pollution; and best industry practices.
- Provide technical expertise to perform reviews during the process for procurement of vessels, materials and labor, associated equipment and sub-contractors/vendors necessary to transport and install the completed topsides on the in-place CGS.
- Provide technical expertise to perform reviews during the process required for procurement of vessels, materials and labor, associated equipment and sub-contractors/vendors necessary to complete the required dredging.
- Provide technical expertise to perform reviews during the process for procurement of vessels, materials and labor, associated equipment and sub-contractors/vendors necessary to float off and transport the CGS to the White Rose Field for emplacement including installation of solid ballast, scour protection, subsea anchoring systems and mooring apparatus.
- Provide technical expertise to perform reviews during the process for procurement of vessels, materials and labor, associated equipment and sub-contractors/vendors necessary to remove and reinstall the graving dock gates.

- Perform quality control and quality assurance activities required to ensure all marine operations, offshore transportation and installation activities are completed in accordance with governing standards, codes, and specifications.

- Ensure the acceptance criteria for the marine operations are in compliance with WHP project objectives and upholds the overall integrity of the engineering design.

- Provide expertise to ensure the initial hook-up activities required after mating is performed safely and in compliance with regulatory requirement.

- Work in concert with marine transporters, dredging companies, fabricators and complementary third party vessel owners, to define the best-fit marine operations and transportation solution for the WHP project.

- Participate in qualitative and quantitative risk analysis and cost benefit analysis.

- Provide expertise for improving efficiency and reducing interface associated risks for the total WHP marine operations.

- Provide logistical management to enable effective mitigation of significant project risks, provide flexibility to help decrease overall schedule risk and maximizing technical and economic benefits through the standardization of engineering and technical practices.

- Ensure the detail design engineering and physical testing activities conducted on the various components are comprehensive and acceptable.

- Ensure structural integrity requirements and performance standards are met.

- Ensure transfer and lifting systems testing is performed in accordance with established specifications.

Husky strongly supports providing opportunities to Canadian and, in particular Newfoundland and Labrador companies and individuals, on a commercially competitive basis. Pre-qualified companies will be required to complete a Canada/Newfoundland and Labrador Benefits Questionnaire at the bid stage. Husky also encourages the participation of members of designated groups (women; Aboriginal peoples; persons with disabilities; and members of visible minorities) and corporations or cooperatives owned by them, in the supply of goods and services.

Please provide one (1) original and one (1) copy of your formal response no later than 3:00 P.M. NST, 3 July 2014 to the address as shown below:

Husky Energy Inc.                      Attn: Angela Vallis, Contract Administrator
Suite 901, Scotia Center               Email: angela.vallis@huskyenergy.com
235 Water Street                       Phone: (709)724-5600
St. John’s NL Canada                   235 Water Street
A1C 1B6

Please note that any updates, bulletins and/or clarifications to the above noted Prequalification will be posted on the websites below. Please check regularly during the pre-submission period for any updates that may be posted.

http://wrep.huskyenergy.com/Procurement_Opportunities
or
http://www.huskyenergy.com/operations/growthpillars/atlantic/opportunities/default.asp