ALLOCATING PROCEDURE

PROCEDURE FOR ALLOCATION OF HYDROCARBONS
1. **DEFINITIONS**

Capitalized terms used in this Exhibit G to the Agreement, but not defined herein, shall have the meaning ascribed thereto in the Agreement.

For the purpose only of this Exhibit G to the Agreement, the terms set forth below, when capitalised, shall have the indicated meanings:

**Allocation Period**: A Month or as otherwise agreed between Transporter and Producers.

**Allocated Terminal Inlet**: The mass of Components allocated to each Entrant in the comingled stream at Terminal Inlet net of any compositional change in Pipeline Stock and net of any imbalance across the Terminal and the Stabilisation Plant.

**Allocation Schedule**: The calculation system which shall be based on equations together with the computer software that will calculate each Entrant’s mass of allocated Finished Products and water.

**Allocation System**: A certain part of the Pipeline as defined in section 4 of this Allocation Procedure.

**Closing Pipeline Stock**: The Pipeline Stock at the end of the Allocation Period.

**Light End Donor**: Any Entrant that is not designated a Light End Receiver.

**Light End Receiver**: An Entrant with an initially allocated mass of C4+ Components less than the actual mass of C4+ Components in the Crude Oil in Terminal stock.

**Off-spec Gas**: Propane and Butane not complying with the sales specifications pursuant to Exhibit N and O of the Agreement.

**Opening Pipeline Stock**: Pipeline Stock at the beginning of the Allocation Period.

**Pipeline Stock**: The quantity and composition of Crude Petroleum in the Pipeline from immediately downstream the Gorm “E” Platform metering point to the Terminal Inlet.

**Residual Off Gases**: The calculated mass of Off Gases remaining after subtraction of the net mass of such measured Fuel Gas except all gas imported from the Shell Refinery for use in the hot oil furnace, or vaporised from the Propane storage, and used in the hot oil furnace. The definition refers to a theoretical mass used in the Allocation Schedule’s step 5.

**Terminal Inlet**: The inlet to the dewatering facilities in the Terminal.
2. **SCOPE**

The scope of this Allocation Procedure is to establish and describe the principles according to which Finished Products and water is allocated to the Entrants based on the quantity of Crude Petroleum delivered to the Pipeline by each Entrant. Accordingly, the allocated Finished Products from this Allocation Procedure serves as input to the calculations under the Value Adjustment Procedure.

The aim of the Allocation Procedure is to reflect a fair and equitable redelivery of hydrocarbons to the Entrants and to support the provisions of this Agreement.

The allocation performed under the Allocation Procedure shall be based on the methodology of proportional mass-based allocation of Components. The methodology shall be based on quantitative and qualitative measurements of all deliveries of Crude Petroleum and all redeliveries of Finished Products and BS & W.

Transporter will, applying the allocation keys received in accordance with Section 9.3.f to Entrant’s Crude Petroleum delivered in a commingled stream at Delivery Point on the Gorm "E" Platform, separate the commingled stream into single streams whereby any uncertainty in measurement will remain in the single commingled stream in which the Entrant’s Crude Petroleum is delivered.

The Allocation system shall handle any difference in volume or uncertainty in measurements between the Crude Petroleum delivered at Delivery Point on the Gorm "E" Platform and the Finished Products measured when entering storage. Any such difference will be distributed between all producers in proportion to their deliveries of Crude Petroleum to the Gorm "E" Platform.

Following allocation of hydrocarbons to Entrants pursuant to the Allocation Procedure, Exhibit G to the Agreement, Transporter shall procure that hydrocarbons from the Sole Concession, the Lulita Field and the Trym Field are allocated from the hierarchical level ‘Entrant’ to ‘Producers’ by applying the allocation keys on volume of Crude Petroleum, and any other information requested by Transporter, pursuant to Article 9.3f of the Agreement.

After completion of the Allocation Schedule, Transporter shall procure that hydrocarbons from the Sole Concession, the Lulita Field and the Trym Field are allocated from the hierarchical level “Entrant” to “Producers” by applying such allocation key as provided by Producers in accordance with Article 9.3f of the Agreement.

Further and for use in the Off-take and Lifting Procedures as well as the Value Adjustment Procedure, Transporter shall procure that Producers’ hydrocarbons are allocated from the hierarchical level “Producers” to “Producer” by applying each Producer’s Percentage.
3. **MEASUREMENT, TESTING AND SAMPLING**

Crude Petroleum delivered and Finished Products and water redelivered shall be subject to measurements, testing and sampling in accordance with Exhibit A and Exhibit B to the Agreement.
4. **THE ALLOCATION SYSTEM**

The Allocation System is defined by an up-stream boundary at the Delivery Point on the Gorm “E” Platform and down-stream boundaries at either i) Propane storage tanks, ii) Butane storage tanks, iii) Off-spec Gas storage tanks, iv) Crude Oil storage tanks, or v) the Battery Limit to Shell Refinery for the Fuel Gas export.

The inlet streams to the Allocation System are Crude Petroleum as delivered at a Delivery Point on the Gorm “E” Platform whereas the outlet streams are separated water and produced Finished Products from the Terminal or the Stabilisation Plant.

A schematic presentation of the Allocation System is enclosed to this Exhibit G to the Agreement as Appendix 1. Appendix 1 is also included in Exhibit P
5. METHODOLOGY

The main principles of the Allocation Procedure are the allocation of single Components and the proportional distribution of uncertainties to the Producers.

The Allocation Schedule includes nine steps in two overall stages:

The first stage (steps 1-5) caters for the actual physical processes distributing Components from the Entrants’ Crude Petroleum to the Crude Oil and Residual Off Gases thus accounting for any change in the Pipeline Stock and any imbalances in the Allocation System. In addition and since a Component swap is only allowed between Crude Oil and Propane/Butane, the mass of Residual Off Gases is calculated as an intermediate step before swap of Components.

The second stage (steps 6-8) aims, by means of a swap of C4- Components, to approximate the composition of each Entrant’s Allocated Crude Oil to the actual composition of Crude Oil for the Allocation Period.

Subsequently, Propane and Butane is allocated to Users in proportion to the composition of such Users’ Off Gases. The Allocation Schedule thereby accounts for the commercial principle that, while maintaining each Entrant’s mass balance, Non-Users shall have redelivered two products, Crude Oil and Fuel Gas, and Users shall have redelivered four products, Crude Oil, Propane, Butane and Fuel Gas.
6. THE ALLOCATION SCHEDULE

A simplified overview of the nine steps of the Allocation Schedule is enclosed to this Allocation Procedure as Appendix 2 and the complete set of mathematical equations that constitute the Allocation Schedule is enclosed as Appendix 3.

Step 1 - Conversion of Wet Volumes to Wet Masses for the Day

Flow measurements for use in the Allocation Schedule shall be in wet mass (tonnes). If only volume measurements are available, wet volume shall be converted to wet mass.

For each Day in the Allocation Period, the mass of each relevant stream shall be determined as the product of i) the measured wet volume of each stream and ii) the measured wet Density of the stream.

If the Density of Fuel Gas, Propane or Butane is not available from actual measurements, the Density of such stream shall be calculated in accordance with ISO 6976.

Step 2 - Conversion of Wet Masses to Dry Masses for the Day

For each Day in the Allocation Period, the total dry mass of Crude Petroleum and Finished Products shall be determined as the sum of i) the total wet mass of the relevant stream, cf. step 1, less ii) the measured mass of water in such stream.

In addition, for each Day of the Allocation Period, the change in mass of water in Off-Spec Gas shall be determined by difference from the end of the previous Day.

Step 3 - Calculation of Components in Delivered Crude Petroleum and produced Finished Products for the Day

For each Day of the Allocation Period, the total mass of each Component in the Entrants’ Crude Petroleum and the total mass of each Component in Finished Products, respectively, shall be determined as the product of i) the total dry mass of the relevant stream, cf. step 2, and ii) the most recent verified dry composition of such stream.

In addition, for each Day of the Allocation Period, the produced mass of each Component in Off-spec Gas shall be calculated as the mass change of such Component during the Day.

Step 4 - Calculation of Opening Pipeline Stock, Closing Pipeline Stock and Allocated Terminal Inlet for the Allocation Period

Based on the Crude Petroleum, step 4 aims to determine each Entrant’s portion of each Component and water in Allocated Terminal Inlet thus accounting for any change in Pipeline Stock and any imbalance across the Terminal and the Stabilisation Plant.

a) For the Allocation Period, the total mass of water at Terminal Inlet shall be equal to the sum of i) the total measured mass of water in Finished Products, ii) any
change in mass of water in Off-spec Gas, cf. step 2, iii) the total measured mass of water separated from the Crude Petroleum in the dewatering facilities, and iv) the total measured mass of water separated from the Crude Petroleum in the Degassing Facilities.

For the Allocation Period, the total mass of each Component at Terminal Inlet shall be deemed equal to the sum of i) the total mass of such Component in Finished Products and ii) any change in mass of such Component in Off-spec Gas.

b) For each Component and for each Entrant, the Opening Pipeline Stock shall be calculated from the sum of i) the previous Closing Pipeline Stock, ii) any adjustments to Pipeline Stock to be applied for the Allocation Period, and iii) the Entrant’s Crude Petroleum for the Allocation Period.

For each Component and for each Entrant, the Allocated Terminal Inlet shall be calculated as the product of i) the Entrant’s delivery of Crude Petroleum and ii) the Entrant’s Opening Pipeline Stock. The Allocated Terminal Inlet shall then be normalised against the total mass of each Component at Terminal Inlet, cf. step 4 a), in order to account for any Component imbalance across the Terminal and the Stabilisation Plant.

Each Entrant’s Components in Closing Pipeline Stock shall then be calculated from i) the Entrant’s Components in Opening Pipeline Stock less ii) the Entrant’s Components in Allocated Terminal Inlet, cf. this step 4 b.

c) For the Allocation Period, the mass of water separated from the Crude Petroleum shall be allocated to an Entrant in proportion to such Entrant’s mass of water in Terminal Inlet, cf. step 4 a).

For the Allocation Period, the total mass of water available for allocation to Finished Products shall then be calculated as i) the total mass of water at Terminal Inlet, cf. step 4 a, less ii) the mass of water separated from the Crude Petroleum less iii) any change in the mass of water in Off-spec Gas.

Similarly, for each Entrant, the mass of each Component available for allocation to Finished Products shall be calculated as i) the mass of such Component in Allocated Terminal Inlet, cf. step 4 b, less ii) the change in the mass of such Component in Off-spec Gas. Such change in Off-gas shall be allocated in proportion to each Entrant’s Allocated Terminal Inlet.

**Step 5 - Initial Allocation of Total Components Available to Allocated Crude Oil and Total Components Available to Residual Off Gases for the Allocation Period**

a) For each Entrant, the mass of each Component that can be initially allocated to the Allocated Crude Oil for the Allocation Period shall be determined by the product of i) the total mass of such Component in produced Crude Oil and ii) the proportional mass of such Component available from the Entrant’s Allocated Terminal Inlet for allocation to Finished Products, cf. step 4 c.
b) For each Entrant, the total initially allocated Components to Off Gases shall then be determined by difference between i) such Components in Allocated Terminal Inlet and ii) such Components initially allocated to Allocated Crude Oil, cf. step 5 a.

c) For each Entrant, the total mass of Components allocated to Residual Off Gases shall be determined by difference between i) the mass of such Components in Off Gases, cf. step 5 b, and ii) the net mass of such Components in measured Fuel Gas.

**Step 6 - Designation of a User, a Light End Donor and a Light End Receiver**

An Entrant shall be designated a User in accordance with Section 11.3 of the Agreement.

The Allocation Schedule attempts to approximate the quality of each Allocated Crude Oil to the quality of the Entrant’s quality of Crude Oil if such Entrant’s Crude Petroleum had not been part of the commingled stream from the Gorm “E” Platform to the Terminal.

Such mechanism requires a swap of C4- Components between Light End Donors and Light End Receivers. Accordingly, each Entrant shall be designated a Light End Donor or a Light End Receiver by comparison of the actual mass of C4- Components in the Crude Oil with the initially allocated mass of C4- Components to each Entrant in step 5.

**Step 7 – Movement of C4- Components and Allocation of Finished Products**

The first part of step 7 (steps 7a – d) aims to achieve the same composition of Allocated Crude Oil for all Entrants by means of a swap of C4- Components from Light End Receivers’ Residual Off Gases into the Light End Receivers’ Crude Oil. However, such swap is subject to the mass balance of the Allocation System. Step 7 d allocates Components to Allocated Crude Oil and Residual Off Gases.

The second part of step 7 (steps 7e - f) distributes Components from Residual Off Gases to Propane, Butane and Fuel Gas while upholding the commercial principle that a User shall have redelivered four products, Crude Oil, Propane, Butane and Fuel Gas and a Non-User shall have redelivered two products, Crude Oil and Fuel Gas. Propane and Butane is allocated to Users’ in proportion to the composition of such Users’ Residual Off Gases.

a) For an Entrant designated as a Light End Receiver, the mass of C4- Components to be moved from Residual Off Gases into the Allocated Crude Oil shall be calculated as the product of i) such Entrant’s excess C4- Components in the actual Crude Oil compared with initially allocated C4- Components to the Allocated Crude Oil, cf. step 5, and ii) the C4- Components initially allocated to the Entrant’s Residual Off Gases, and in proportion to iii) the actual C4- Components in such Entrant’s Residual Off Gases.

b) Since the actual C4- Components in Residual Off Gases cannot be determined by measurement, such Components shall be calculated from the product of i) the
allocated C4 Components in Residual Off Gases, cf. step 5 c, and ii) 100% less the actual mass fraction of C4 Components in Crude Oil, and less iii) the C4 Components in inert gases.

The mass of Components to be swapped shall however be limited by the mass of C4 Components initially allocated to the Allocated Crude Oil of such Entrants designated as Light End Donors’, cf. step 5.

c) For an Entrant designated as a Light End Receiver, each of the C4 Components shall be distributed to the Allocated Crude Oil in proportion to the mass of the Component in the total C4 Components to be moved.

d) In order to maintain mass balance, an equivalent mass of C4 Components shall be swapped from the Allocated Crude Oil initially allocated to those Entrants’, designated as Light End Donors, cf. step 5, and into such Entrants’ initially allocated Residual Off Gases.

e) For each Entrant the Allocated Crude Oil and Residual Off Gases, the mass of Components to be allocated shall be calculated from the sum of i) the mass of Components initially allocated to the Allocated Crude Oil and Residual Off Gases, cf. step 5, ii) the mass of Components swapped into the Allocated Crude Oil and Residual Off Gases, cf. step 7 a-c, and iii) the mass of Components swapped out of the Allocated Crude Oil and Residual Off Gases.

f) For any Entrant that is designated a User, the measured mass of each Component in Propane and Butane, respectively, shall be distributed to such Entrant’s allocated Propane and Butane in proportion to the mass of the Component in the Entrant’s allocated Off Gases, cf. step 7 d.

g) Finally, for each Entrant and each Component, the mass of such Component to be allocated to the Entrant’s mass of Fuel Gas shall be calculated as i) the mass of the Component allocated to the Entrant’s Residual Off Gases, cf. step 7 d, less ii) the mass of the Component allocated to the Entrant’s Propane and Butane, respectively, cf. step 7 e.

Step 8 - Calculation of Allocated Masses to Finished Products for the Allocation Period and Conversion from Masses to Volumes

For each Entrant, the total dry mass of Allocated Crude Oil for the Allocation Period shall be calculated as the sum of Components allocated to the Allocated Crude Oil for the Allocation Period, cf. step 7 d.

The total volume of each of an Entrant’s Allocated Crude Oil shall then be calculated from the product of i) the total mass of the Allocated Crude Oil and ii) the calculated Density for Allocated Crude Oil, cf. Appendix 3.

Finally, for any Entrant the ideal volume of Allocated Crude Oil shall be normalised to the measured change in Crude Oil stock volume for the Allocation Period.
7. MASS BALANCE

Transporter shall keep a mass balance record for the Allocation System. The mass balance record shall include mass of Crude Petroleum, quality changes in Pipeline Stock, allocated Terminal imbalances, allocated change in Off-spec Gas and allocated Finished Products and water.
8. **ADJUSTMENT METHODOLOGY**

In the event that a Non-User due to any operational upset is allocated Propane and Butane, a manual override shall apply to adjust for this, cf. Appendix 4.

If a sample is destroyed or in other way not representative for the Month, the analysis of the sample of the previous Month shall be applied for the Month.
9. **AUDIT RIGHTS**

Producers shall have the right to audit the calculations and records pertaining to this Allocation Procedure. The right of audit includes the right of access at reasonable times during normal business hours to all calculations and records pertaining to the Allocation Procedure maintained by Transporter and its Affiliates. Notwithstanding the termination of the Agreement, this right shall extend for a period of twelve (12) months following the end of the calendar year in which the expenditure was made, however, the right should as a minimum last until twelve (12) months following the issue of the final Allocation Schedule if this date is later than twelve (12) months after end of the calendar year in which the expenditure was made. With the exception of the ascertaining of historical mis-measurements or measurement inaccuracies and unresolved audit findings all records will be considered correct thereafter.

Producers shall give at least thirty (30) days’ notice of their intention to conduct an audit and will use reasonable endeavors to conduct such audit jointly with Other Producers and in a manner which results in the minimum of inconvenience to Transporter.
10. **PRODUCERS FORUM**

Twelve (12) Months after the first delivery of Crude Petroleum from a User, the Producers Forum shall meet to review the operability of this Exhibit G to the Agreement and, if necessary, agree any to changes that may be required.

If, in the reasonable opinion of Transporter or Producers, the application of this Exhibit G to the Agreement at any point has led to inequities or inaccuracies or mis-measurements, inaccuracies or in-correct application of the Allocation Procedure has been ascertained by either Transporter or the Producers the Parties shall with at reasonably notice meet in good faith in the Producers Forum to consider and, if possible, agree on appropriate measures in order to address such issues.
11. DISPUTE RESOLUTION

Any dispute arising out of this Exhibit G shall, unless subject to the authority of the Relevant Authority according to Section 19.3 of the Agreement, be settled in accordance with Article XIV of the Agreement and the provisions of said article shall apply mutatis mutandis to Producers and Other Producers.
12. DISCHARGE OF OBLIGATION

Transporter may discharge its rights and obligation under this Exhibit G to the Agreement in whole or in part to one or more third parties, however, Transporter shall remain responsible and liable for the good performance by such third party.
13. **AGENT**

Transporter may appoint one agent who shall be responsible for performing the Allocation Procedure including the Allocation Schedule on behalf of Transporter.
14. APPENDICES

A schematic overview of the Allocation System is enclosed as Appendix 1.

A simplified overview of the Allocation Schedule is enclosed by way of a flow chart in Appendix 2.

The complete set of mathematical equations that constitute the Allocation Schedule is enclosed as Appendix 3.

A procedure for manual override of the Allocation Schedule for use in case of up-set scenarios is enclosed as Appendix 4.