

EXHIBIT – D
OPERATING CODE

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INTRODUCTION

- a) This Operating Code is a document intended to record certain rights and responsibilities of each of the parties involved in the transportation of Gas through the Transporter Facilities. The Transporter Facilities currently conveys Gas from multiple sources of Gas to multiple consumption points from the Transporter Facilities.
- b) This Operating Code is intended primarily to address technical and operational issues relating to transfer of Gas through the Transporter Facilities. Each person who signs a contract for transmission of Gas (“GTA”) (each such person shall be hereinafter called a “Shipper”) with GAIL (India) Limited (“Transporter”) and each GTA will incorporate, by reference, the provisions of the Operating Code and will, in addition, set out the specific terms and conditions regulating the contractual relationship between the Transporter and Shipper regarding the flow of Gas through the Transporter Facilities under each CT Agreements.
- c) Transporter may transport its own Gas through its network for the purpose of supplying the same to its consumers or for internal consumption in its plants. Transporter shall be deemed to be a Shipper for such transportation of Gas.
- d) This Operating Code sets out the general and detailed working principles which govern the Transporter’s and Shippers’ respective rights and obligations including capacity, balancing, allocation, nominations, measurement and specification and the day to day operation and maintenance of the Transporter Facilities.
- e) This Operating Code is intended to provide a clear, fair, transparent and not unduly discriminatory framework for Shippers wishing to use the Transporter Facilities and for transportation of Transporter’s own Gas. This Operating Code shall be binding on the parties to a GTA upon execution of the GTA by the Transporter and the Shipper.
- f) Underlying Principles of this Operating Code
 - i) the Transporter and each of the Shippers shall act as a Reasonable and Prudent Operator in exercising its respective rights and carrying out its respective obligations under this Operating Code.
 - ii) there is a mechanism for making modifications to this Operating Code;
- g) Unless otherwise defined in this Operating Code, capitalized terms used in this Operating Code shall have the meaning given to them in GTA.

SECTION 1 – DEFINITIONS & INTERPRETATION

1.1 Definitions

“Allocation Arrangement” shall mean the arrangement specified in Section 4 of this Operating Code with respect to the Delivery Point and / or the Redelivery Point whereby the Allocated Quantities of each of the Commingled Shippers is determined.

“Allocated Capacity” shall mean the “Scheduled Quantity” defined herein.

“Allocation Data” shall have the meaning given in Section 3.8.

“Allocated Quantity” means the quantity of Gas in MMBTU attributed to each of the Shipper in accordance with Section 4 of this Operating Code.

“Balancing Quantities” shall have the meaning given in Section 4.4 c) iii.

“Commingled Shipper(s)” shall mean, any Shipper which delivers Gas at a Delivery Point in a Commingled Stream or any Shipper which offtakes Gas at any Redelivery Point in a Commingled Stream.

“Commingled Stream” means the single stream of Gas that is formed when

- a) On a Day the Gas that has been delivered to the Transporter at the Delivery Point through the same Measurement Equipment by Shipper and Other Shipper(s), or
- b) On a Day the Gas is delivered by the Transporter to Shipper and Other Shipper(s) through the same Measurement Equipment at the Redelivery Point, as applicable.

“Constraint” shall have the meaning given in Section 5.1 (a)

“Constraint Day” shall have the meaning given in Section 5.1 (a).

“Cumulative Imbalance”, “Cumulative Positive Imbalance” & “Cumulative Negative Imbalance” shall have the meaning given in Section 6.4

“Daily Gas Flow Nomination” means the statement given in accordance with Section 4.4 of this Operating Code.

“Daily Scheduling Statement” means the statement given in accordance with Section 4.8.

“Delivery Point” is defined in Section 2.3.

“Delivery Point Maximum Daily Quantity” or **“Delivery Point MDQ”** as defined in Section 2.4.

“Delivery Point Measurement Equipment” shall mean such main and subsidiary meters (Custody Transfer Meter) including apparatus, mains, volumetric measurement meter and pipes as specified in this Operating Code, which Measuring Party considers reasonably necessary for the measurement and recording of the volume in Standard Cubic Metres and Gross/Net Heating Value

and as well as Pressure, Temperature and other mutually agreed parameters of Gas delivered at each Delivery Point.

“Firm Daily Nominated Quantity” shall have the meaning specified in Section 4.4.

“Gas Flow Day” shall mean in respect of a CT Agreement the Day on which Gas is delivered by the Shipper at the relevant CT Delivery Point and/or the Gas is oftaken by the Shipper at the relevant CT Redelivery Point.

“Imbalance Quantities” is defined in Section 6.3.

“Imbalance Scheduling” is defined in Section 4.7 (d).

“MDQ” means CT Delivery Point MDQ or Redelivery Point MDQ.

“MDR” as defined in Section 2.5.

“MOR” as defined in Section 2.8.

“Measured Quantity” at a Point shall be the total quantity of Gas, measured in MMBTU, which is determined in accordance with this Operating Code to have flowed through the Measurement Equipment for that Point during that Day.

“Measurement Expert” shall have the meaning specified in Section 9.12

“Metre” shall have the meaning defined in ISO 1000:1981 (E)

"mmscm" shall mean one million (1,000,000) scm.

“Negative Imbalance Quantity” is defined in Section 6.3.

“Operational Flow Order” shall have the meaning given in Section 5.1 (b).

“Other Shipper” shall mean any shipper (other than Shipper), including the Transporter when it acts as a deemed Shipper.

“Point” shall mean either a Delivery Point or a Redelivery Point

“Positive Imbalance Quantity” is defined in Section 6.3.

“Pressure Notice” shall have the meaning given in Section 7.8.

“Redelivery Point” is defined in Section 2.6

“Redelivery Point Maximum Daily Quantity” or **“Redelivery Point MDQ”** as defined in Section 2.7

"Redelivery Point Measurement Equipment" shall mean such main and subsidiary meters (Custody Transfer Meter) including apparatus, mains, volumetric measurement meter and pipes as specified in the Operating Code, which the Measuring Party considers reasonably necessary for the measurement and recording of the volume in Standard Cubic Metres and Gross/Net Heating Value

as well as Pressure, Temperature and other mutually agreed parameters of Gas delivered at each Redelivery Point.

“Scheduled Gas Flows” shall have the meaning given in Section 4.8 (d).

“Scheduled Quantity” shall have the meaning given in Section 4.8 (c). Scheduled Quantity shall also mean the **“Allocated Capacity”**.

“Shared Delivery Point” is defined in Section 3.11 (a).

“Shared Redelivery Point” is defined in Section 3.12 (a).

“Standard Cubic Metre” and **“scm”** shall mean, when applied to Gas, that amount of Gas which at a temperature of fifteen degrees Celsius (15°C) and an absolute pressure of one decimal zero one three two five (1.01325) Bar and being free from water vapour occupies one (1) cubic metre.

“Weekly Nominations” means the estimates provided under Section 4.2.

SECTION 2 – DELIVERY POINTS AND REDELIVERY POINTS

- 2.1 A **“Point”** shall mean either a Delivery Point or a Redelivery Point.
- 2.2 For each Point there shall be:
- a) A name identifying the Point;
 - b) A description giving the precise location of the Point;
 - c) An Acceptable Pressure Range;
 - d) Arrangements for measuring or otherwise determining the volume, Gross/Net Heating Value, pressure and temperature of Gas passing through the Point, in accordance with the relevant CT; and
 - e) Arrangements for allocating Gas in accordance with the terms of this Operating Code.
- 2.3 A flange or weld or agreed mark downstream of the Delivery Point Measurement Equipment at which the Shipper delivers into the Transporter Facilities for onward transmission shall be called a **“Delivery Point”**. Each specific Delivery Point as to any CT Agreement shall be identified in the relevant CT Agreement.
- 2.4 At each Delivery Point, the **“Delivery Point Maximum Daily Quantity”** (**“Delivery Point MDQ”**) shall mean the maximum quantity of Gas, measured in MMBTU, which the Transporter is obligated to accept from the Shipper at the Delivery Point on a Day which shall be the aggregate of the CT Delivery Point MDQs for that Delivery Point on that Day.
- 2.5 At each Delivery Point the **“Maximum Delivery Rate”** (**“MDR”**) shall mean the maximum rate, measured in MMBTU/MMSCM per hour, at which the Transporter is obligated to accept Gas from the Shipper at the Delivery Point. The MDR shall be determined by dividing the Delivery Point MDQ by twenty-four (24).
- 2.6 A flange or weld or agreed mark downstream of the Redelivery Point Measurement Equipment at which the Transporter delivers Gas back to the Shipper shall be called a **“Redelivery Point”**. Each specific Redelivery Point as to any CT Agreement shall be identified in the relevant CT Agreement.
- 2.7 At each Redelivery Point, the **“Redelivery Point Maximum Daily Quantity”** (**“Redelivery Point MDQ”**) shall mean the maximum quantity of Gas, measured in MMBTU, which the Transporter is obligated to deliver back to the Shipper at the Redelivery Point on a Day which shall be the aggregate of the CT Redelivery Point MDQs for that Redelivery Point on that Day.
- 2.8 At each Redelivery Point the **“Maximum Offtake Rate”** (**“MOR”**) shall mean the maximum rate, measured in MMBTU/MMSCM per hour, at which the Transporter is obligated to deliver Gas back to the Shipper at the Redelivery Point. The MOR shall be determined by dividing the Redelivery Point MDQ by twenty-four (24).
- 2.9 The specific details for each Point are set out in each CT Agreement.

SECTION 3 – ALLOCATION & ALLOCATION STATEMENTS

- 3.1 Except as provided herein, the Allocation Arrangement shall apply whenever Gas delivered into or offtaken from a Point in a Commingled Stream.
- 3.2 The Parties shall, at all times, act fairly amongst themselves as a Reasonable and Prudent Operator ensuring that none of the Party benefits unfairly at the expense of the other Party.
- 3.3 The Transporter shall implement the Allocation Arrangement and determine and notify the Allocated Quantity for each Commingled Shipper after the Gas Flow Day in accordance with this Section.
- 3.4 At any Point, the Allocation Arrangement shall quantify the Allocated Quantity of the Commingled Shippers from the Measured Quantity of the Commingled Stream at such Point.
- 3.5 Without prejudice to the other Clauses of GTA and Sections of this Operating Code, the Transporter and Commingled Shippers acknowledge that delivery of Gas to the Delivery Point or offtake from a Redelivery Point may not exactly match the Nomination and subsequent scheduling made in respect of it on account of drawl pattern of the consumer and technical reasons and consequently under deliveries and over deliveries of Gas may occur.
- 3.6 All of the Measured Quantity at each Delivery Point and Redelivery Point shall be allocated to Commingled Shippers regardless of the reason for any such over deliveries or under deliveries.
- 3.7 **Allocation:**
- a) At each Point there shall be Allocation Arrangements that shall establish the Allocation Data for each Day.
 - b) At each Point, the Allocation Arrangements shall ensure that the Measured Quantity for the Day is attributed to the Shippers such that the sum of the quantities so attributed is precisely equal to the Measured Quantity at such Point.
- 3.8 The **“Allocation Data”** for each Point on a Day shall mean:
- (a) The Measured Quantity for the Point on the Day
 - (b) The attribution of the Measured Quantity to each of the Commingled Shippers as determined in accordance with this Section 3; and
- 3.9 For each Point the Allocation Data shall be established by the Transporter as soon as possible after the Day and the same shall be carried out in accordance with Section 3.11 and / or 3.12, or as specifically agreed in respect of that Delivery Point or Redelivery Point
- 3.10 **Initial and Final Allocation:**
- (a) A statement (herein referred to as the **“Daily Allocation Statement”**) shall be provided and finalized by the Transporter to the Commingled Shippers with regard

to their Commingled Stream, which shall, state, inter alia, in respect of the relevant Day:

- i. Measured Quantity (in mmscm and MMBTU) at the Point;
 - ii. The Allocated Quantity (in mmscm and MMBTU) of the Shipper;
 - iii. The Daily Nominations (in mmscm and MMBTU) of the Shipper; and
 - iv. The Daily Scheduled Quantity (in mmscm and MMBTU) of the Shipper.
- (b) By 1600 Hrs on the Day ("D+1") after the Gas Flow Day ("D") Transporter shall allocate the Measured Quantity at the Delivery Point and the Measured Quantity at each Redelivery Point in respect of D among the Commingled Shippers in accordance with this Section (each an "**Initial Allocation**").
- (c) An Initial Allocation is subject to any adjustment in order to correct any error made in the application of the Allocation Arrangements.
- (d) Each Initial Allocation shall, subject to Section 3.9, become a final allocation (a "**Final Allocation**") at 1600 Hrs. on the second Day after D ("D+2"). A Final Allocation shall be issued in accordance with the provisions of this Section 4 shall be deemed to be final and binding on the Commingled Shippers.

3.11 Allocation at Delivery Point:

- a) Transporter and the Commingled Shippers may mutually agree in writing for Allocation methodology for a Shared Delivery Point in which case such mutually agreed allocation methodology shall prevail. Allocation methodologies may include the following
- i. **Swing PDA:** One of the Commingled Shippers at a Commingled Point is designated as the "swing." All other Shippers are allocated their respective Scheduled Quantities. The Shipper identified as "swing" is allocated the remaining difference between the Measured Quantity and quantities allocated to non-swing Shippers. The swing Shipper is not permitted to be allocated a quantity which would result in a negative number, therefore any negative quantity will be allocated to the non-swing Shippers on a pro-rata basis in accordance with the Scheduled Quantities. A separate agreement may also be designated as "swing" under this allocation method.
 - ii. **Ranked PDA:** This allocation methodology is applicable to a Commingled Shipper with multiple contracts at a Point. Each of such multiple contracts may be assigned a rank and the allocated quantity to such Commingled Shipper at such point is further allocated to a contract with the lowest rank value among the multiple contracts before the next sequentially higher ranked contract.
 - iii. **Percentage PDA:** This allocation methodology is applicable to a Commingled Shipper with multiple contracts at a Point. Each of such multiple contracts may be assigned a percentage value and the allocated quantity to such Commingled Shipper at such point is allocated to each such contract by multiplying allocated quantity by the respective percentage.
- b) In the absence of mutually agreed Allocation methodology as per the Section 3.11 a) above, the Initial Allocation of Gas, in respect of any Gas Flow Day at a Delivery

Point where Commingled Shippers deliver Gas (a “**Shared Delivery Point**”) shall be made in accordance with the formula set out below:

$AQ_{\text{Delivery}} = MQ_{\text{Delivery}} \times SQ_{\text{Delivery}} / ASQ_{\text{Delivery}}$	
Where:	
AQ_{Delivery}	The Allocated Quantity of Gas, in MMBTU, allocated to a Shipper at the Shared Delivery Point ;
MQ_{Delivery}	The Measured Quantity of Gas, in MMBTU, at the Shared Delivery Point
SQ_{Delivery}	The Shipper's Scheduled Quantity of Gas, in MMBTU, at the Shared Delivery Point;
ASQ_{Delivery}	The aggregate of Scheduled Quantities in MMBTU, for all the Shippers at the Shared Delivery Point

- c) At a Delivery Point that is not a Shared Delivery Point, Measured Quantity of Gas shall be allocated to the Shipper delivering Gas at that Point. Such allocation shall be the Initial Allocation and the Final Allocation.

3.12 Allocation at a Redelivery Point:

- a) Transporter and the Commingled Shippers may mutually agree in writing for Allocation methodology for a Shared Redelivery Point in which case such mutually agreed Allocation methodology shall prevail. Allocation methodologies may include the following:
- i. **Swing PDA:** One of the Commingled Shippers at a Commingled Point is designated as the "swing." All other Shippers are allocated their respective Scheduled Quantities. The Shipper identified as "swing" is allocated the remaining difference between the Measured Quantity and quantities allocated to non-swing Shippers. The swing Shipper is not permitted to be allocated a quantity which would result in a negative number, therefore any negative quantity will be allocated to the non-swing Shippers on a pro-rata basis. in accordance with the Scheduled Quantities. A separate agreement may also be designated as “swing” under this allocation method.
 - ii. **Ranked PDA:** This allocation methodology is applicable to a Commingled Shipper with multiple contracts at a Point. Each of such multiple contracts may be assigned a rank and the allocated quantity to such Commingled Shipper at such point is further allocated to a contract with the lowest rank value among the multiple contracts before the next sequentially higher ranked contract.
 - iii. **Percentage PDA:** This allocation methodology is applicable to a Commingled Shipper with multiple contracts at a Point. Each of such multiple contracts may be assigned a percentage value and the allocated quantity to such Commingled Shipper at such point is allocated to each such contract by multiplying allocated quantity by the respective percentage.
- b) In the absence of mutually agreed Allocation methodology as per the Section 3.11 a) above, the Initial Allocation of Gas, in respect of any Gas Flow Day at a Redelivery Point where Commingled Shippers offtake Gas (a “**Shared Redelivery Point**”) shall, be made in accordance with the formula set out below:

$AQ_{Redelivery} = MQ_{Redelivery} \times SQ_{Redelivery} / ASQ_{Redelivery}$	
Where:	
$AQ_{Redelivery}$	The Allocated Quantity of Gas Allocated in MMBTU to a Shipper at the Shared Redelivery Point ;
$MQ_{Redelivery}$	The Measured Quantity of Gas in MMBTU at the Shared Redelivery Point ;
$SQ_{Redelivery}$	The Shipper's Scheduled Quantity in MMBTU at the Shared Redelivery Point ;
$ASQ_{Redelivery}$	The aggregate Scheduled Quantities in MMBTU for all the Shippers at the Shared Redelivery Point

- c) At a Redelivery Point that is not a Shared Redelivery Point, Measured Quantity of Gas shall be allocated to the Shipper delivering Gas at that Point. Such allocation shall be the Initial Allocation and the Final Allocation.

3.13 Change to the Initial Allocation:

- (a) At a Point Shipper(s) may agree on a different Allocation from the Initial Allocation as between themselves, of their aggregate Allocated Quantity of Gas for any Day (a "**Reallocation**").
- (b) A Reallocation shall be requested:
- i. by all affected Shippers writing jointly to Transporter;
 - ii. only during the period between 1600 hours. of D+1 and 1000 hours on D+2; and
 - iii. not more than once in each Day.
- (c) A Reallocation shall be accepted by Transporter if it is satisfied that
- i. the aggregate Measured Quantity of Gas which would be allocated to such affected Shippers in respect of a Day, is equal to the quantity of Gas which the affected Shipper's have requested be Reallocated; and
 - ii. is requested by the Shippers in the due time frame.

A Reallocation so accepted shall, subject to Section 4, become a Final Allocation.

3.14 Notwithstanding anything contained herein, the Parties agree that where any Allocation/Reallocation has been carried out in accordance with the provisions of Section 3.13 of this Operating Code, the Transporter shall not be liable for any Shortfall Quantities, if any attributable solely to such allocation methodology.

3.15 The Shippers shall indemnify the Transporter and save it harmless from all suits, actions, debts, accounts, damages, costs, losses, and expenses arising from or out of any adverse claims of any and all persons to the Gas and/or to royalties, taxes, licence fees, or charges thereon which are applicable on account of the Allocation of Gas under the Sections 3.11 (c), 3.12 (c) and 3.13.

- 3.16** The Commingled Shippers may in accordance with Section 3.10 of receiving the Initial Allocation propose a revision to such Initial Allocation to the Transporter, in accordance with provision of Section 3.13, failing which the Transporter can issue the Final Allocation.
- 3.17** Final Allocation statements for each Day shall be finalized in accordance with the following procedure:
- a) If the Commingled Shippers, within time period as specified in Clause 3.13 of the receipt of the Initial Allocation, propose any revision to the Initial Allocation and provided such a revised Initial Allocation satisfies the conditions set out in Section 3.7 b), then the Commingled Shippers shall sign such revised draft Daily Allocation Statement and submit a copy of the same to the Transporter. Such revised Initial Allocation shall become the Final Allocation.
 - b) Where the Initial Allocation is revised later than three (3) Days before the day on which the relevant Fortnightly Invoice is to be issued under the respective CT Agreements, reasonable endeavour shall be made to reflect any necessary adjustments and reconciliation in the same Fortnightly Invoice issued under the respective CT Agreements otherwise in the following Fortnightly Invoice.
 - c) In the event the provisions of Section 3.17 (a) above are not applicable then the Transporter shall issue the Final Allocation in accordance with the provisions of this Operating Code.
 - d) The Parties shall transmit to each other the relevant Initial Allocation or the Final Allocation as the case may be under this Section 3, by facsimile or other electronic media, to the location that each of the respective Parties shall, from time to time, designate in writing for this purpose.
- 3.18** Notwithstanding the foregoing, in the event of manifest error in any Final Allocation statement or draft Daily Allocation Statements, the Commingled Shippers may by written notice make any necessary correction to the same and any necessary adjustments and reconciliation shall be reflected in the immediately following Fortnightly Invoice PROVIDED that if such Daily Allocation statement is issued later than two (2) Days before the day relevant Fortnightly Invoice is issued under the respective CT Agreement, reasonable endeavour shall be made to reflect any necessary adjustments and reconciliation in the same Fortnightly Invoice issued under the respective CT Agreements otherwise in the following Fortnightly Invoice.

SECTION 4 – NOMINATION & SCHEDULING

4.1 Annual Estimates:

Prior to the CT Start Date under each CT Agreement and three months prior to commencement of each Contract Year thereafter, the Shipper shall provide to the Transporter a written estimate of the quantities of Gas to be supplied by the Shipper at each CT Delivery Point and Gas to be offtaken at each Redelivery Point during each calendar month of the Contract Year. The above estimate shall include an estimate of the composition and quality with heating value of the Gas to be supplied by the Shipper at each CT Delivery Point.

4.2 Weekly Nominations:

Not later than 1600 hours on the penultimate Thursday preceding the CT Start Date under each CT Agreement and on each Thursday thereafter during the Term of such CT Agreement, the Shipper shall provide to Transporter a Weekly nomination of the quantity of Gas Shipper intends to tender for transportation (“**Daily Nominated Quantity**” or “**DNQ**”) for each Day of the following Week commencing on the Monday (“Weekly Nomination”), substantially in the form set forth in Schedule A.

The Weekly Nominations may specify:

- a) The date and time that the Weekly Nominations was made and the date of the Monday with which the Week begins;
- b) A contact name, telephone number and email address;
- c) In respect of each Day of the Week, the Shipper shall specify in relation to each of the Delivery Point and each of the Redelivery Point under their respective CT Agreement
 - i. The volume of Gas, measured in MMSCM, which the relevant Shipper expects to deliver to Transporter at the Delivery Point;
 - ii. The Gross/Net Heating Value of the Gas to be delivered;
 - iii. The quantity of Gas, at the Delivery Point, in MMBTU, implied by items (i) and (ii) above; and
 - iv. The quantity of Gas, in MMBTU, to be redelivered at the Redelivery Point.
- d) A textual comment on any Days where the flow of Gas is unusual.

For the Shipper having total contracted quantity of more than 10000 SCMD, in the Transporter Facilities:-

If the Shipper requests Gas to be delivered to a Redelivery Point in excess of its MDQ on any Day, then the Shipper shall specify in its nominations for that Day the requested quantity of Gas to be transported in excess of the MDQ as Authorised Overrun Quantity, which may be scheduled by the Transporter on reasonable endeavor basis upto 10% of the MDQ only.

For the Shipper having total contracted quantity of upto 10000 SCMD, in the Transporter Facilities:-

If the Shipper requests Gas to be delivered to a Redelivery Point in excess/short of its MDQ on any Day, then the Shipper shall specify in its nomination for that Day the requested quantity of Gas to be transported in excess/short of the MDQ as Authorised Overrun Quantity/ Under run quantity, which may be scheduled by the Transporter on reasonable endeavour basis upto + 40% or – 100% of the MDQ only. However, the same shall be subject to PNGRB Regulations.

Transporter shall use the Weekly Nominations data to plan the scheduling of Gas for the following Week.

4.3 Absence of Weekly Nominations:

In absence of receipt of Weekly Nominations as per Section 4.2 by the Transporter, then the last Weekly Nominations received by the Transporter in respect of the week in question shall remain in full force and effect.

4.4 Daily Nominations

Not later than 1600 hours on each Day Shipper shall nominate the **“Firm Daily Nominated Quantity”** or **“FDNQ”** for the following Day to the Transporter. The nomination for the Firm Daily Nominated Quantity shall be substantially in the form set out in Schedule B. Such nomination shall specify:

- a) The date and time that the Nominations was made;
- b) A contact name, telephone number and email address;
- c) In respect of each Day, the Shipper shall specify in relation to each of the Delivery Point and each of the Redelivery Point under their respective CT
 - i. For the Delivery Point of the Shipper submitting the Firm Daily Nomination:
 - 1) The Volume of Gas, measured in mmscm, that the relevant Shipper requires to deliver to Transporter at its Delivery Point on that Day;
 - 2) The Gross/Net Heating Value of the Gas to be delivered;
 - 3) Quantity of Gas, measured in MMBTU, implied by items (1) and (2) above;
 - 4) If the expected rate of delivery of Gas is not uniform over the Day, the rates, expressed in MMBTU per hour, at which the relevant Shipper expects to deliver Gas to Transporter at all times during the Day; and
 - 5) Identification of any period in which the rate of delivery by the relevant Shipper is expected to exceed the MDR by more than 10% specified in its CT Agreement for its Delivery Point which the Transporter may schedule on reasonable endeavor basis;
 - ii. For the Redelivery Point of the Shipper submitting the Firm Daily Nomination:

- 1) Quantity of Gas, in MMBTU, to be redelivered;
 - 2) If the expected rate of redelivery of Gas is not uniform over the Day, the rates, expressed in MMBTU per hour, at which the relevant Shipper expects Transporter to redeliver at all times during the Day; and
 - 3) Identification of any period in which the rate of redelivery required by the relevant Shipper is expected to exceed the MDR by more than 10% specified in its CT Agreement for its Redelivery Point which the Transporter may schedule on reasonable endeavor basis;
- iii. **Balancing Quantities:** Shipper may nominate quantities of Gas (“**Balancing Quantities**”) at Delivery/Redelivery Point in order to reduce the Cumulative Imbalance in Transporter’s Facilities.
- iv. **For the Shipper having total contracted quantity of more than 10000 SCMD, in the Transporter Facilities:-**

If the Shipper requests Gas to be delivered to a Redelivery Point in excess of its MDQ on any Day, then the Shipper shall specify in its nominations for that Day the requested quantity of Gas to be transported in excess of the MDQ as Authorised Overrun Quantity at Delivery and Redelivery Point, which may be scheduled by the Transporter on reasonable endeavor basis upto 10% of the MDQ only.

For the Shipper having total contracted quantity of upto 10000 SCMD, in the Transporter Facilities: -

If the Shipper requests Gas to be delivered to a Redelivery Point in excess/short of its MDQ on any Day, then the Shipper shall specify in its nomination for that Day the requested quantity of Gas to be transported in excess/short of the MDQ as Authorised Overrun Quantity/ Under run quantity at Delivery and Redelivery Point, which may be scheduled by the Transporter on reasonable endeavour basis upto + 40% or – 100% of the MDQ only. However, the same shall be subject to PNGRB Regulations.

4.5 Absence of Daily Nominations:

In absence of receipt of Daily Nominations as per Section 4.4 by the Transporter, then the DNQ shall be taken as FDNQ in respect of the Day in question shall remain in full force and effect provided that if the Shipper did not submit a Weekly Nomination in accordance with Section 4.2, then the DNQ for such Day shall be the DNQ set out in the last Weekly Nomination received by the Transporter in accordance with Section 4.3.

4.6 Variation in Gas flows and Renomination:

- a) A Shipper may at any time during the Gas Flow Day vary the rate of Gas flows with notice, which variations shall not be deemed as Renominations.
- b) On receipt of a notice described in Section 4.6(a) from a Shipper, the Transporter will do so to the extent that it can, in its judgment, without adversely affecting its

deliveries of Gas to other Shippers., but shall not be obliged to change the Scheduled Gas Flows at lead times less than those set out in the Section 4.6 (c) (i) and Section 4.6 (c) (ii).

- c) The lead times referred to in Section 4.6 (b) above are:-
- i) four (4) hours notice for the relevant Delivery Point or Redelivery Point, where the resulting increase in the rate of delivery or offtake by the relevant Shipper exceeds 20 (twenty) percent of its MDR or the MOR for the relevant Delivery Point or Redelivery Point, as the case may be, provided that in the case of any consecutive notices of increase in the rate of delivery or offtake and which have not been rescheduled and which in combination exceed 20 (twenty) percent of its MDR or MOR for the relevant Delivery Point or Redelivery Point, as the case may be, not less than four (4) hours notice shall be required from the time that the most recent notice was served by the relevant Shipper;
 - ii) two (2) hours notice for the relevant Delivery Point or Redelivery Point, where the resulting increase in the rate of delivery or offtake by the relevant Shipper exceeds 10 (ten) percent but does not exceed 20 (twenty) percent of the MDR or MOR for the relevant Delivery Point or Redelivery Point, as the case may be, provided that in case of any consecutive notices of increase in the rate of delivery or redelivery served by a Shipper which have not been rescheduled and which in combination exceed 10 (ten) percent of the MDR or the MOR, for the relevant Delivery Point or Redelivery Point, as the case may be, not less than two (2) hours notice shall be required from the time that the most recent notice was served by the relevant Shipper; and
 - iii) for any decrease in the rate of delivery or offtake beyond 10% of MDR or MOR, the relevant Shipper shall give not less than two (2) hours notice prior to commencing to decrease the rate of delivery or offtake.

Explanatory Note: No notice is required for variation in rate of flow of Gas for the relevant Delivery Point or Redelivery Point, where the resulting increase or decrease in the rate of delivery or offtake does not exceed 10 (ten) percent of the MDR or the MOR for the relevant Delivery Point or Redelivery point, as the case may be.

- d) A Renomination (permitted only once in respect of a CT Agreement before 1800 hours. on a Gas Flow Day) submitted by a Shipper, shall change the Firm Daily Nominated Quantity of such Shipper for the Day for the relevant CT Agreement once accepted by the Transporter. The Transporter shall use reasonable endeavors to accommodate such changes in nominations. However, once accepted, Transporter shall be liable for any shortfall arising out of such accepted nominations up to the MDQ as per the provisions of the GTA.

A Renomination shall specify (i) the Nomination or Renomination in respect of which the Renomination is made, (ii) the time that the Shipper wishes the Renomination to become effective, (iii) a revised Firm Daily Nominated Quantity (iv) a revised hourly nomination for remaining day; and (v) all other details as were in the Daily Gas Flow Nomination.

- e) A Shipper may at any time before or during any Day request any increase in the offtake rate at shorter notice and at greater rates of increase than is prescribed in Section 4.6 (c) above and Transporter shall use reasonable endeavors but shall not

be obliged to make capacities available for offtake at such changed rates at shorter notice and at greater rates of increase than provided for under Section 4.6 (c).

- f) Transporter shall as soon as reasonably practicable after the receipt of a request under Section 4.6 (b) or 4.6 (e) notify the relevant Shipper the extent to which it can, in accordance with its obligations under Section 4.6 (e), comply with the Shipper's request;
- g) A Shipper shall not vary the rate of offtake under Section 4.6 (e) except and to the extent notified and as agreed to by Transporter.

4.7 Scheduling of Gas Flows:

- a) Following the Daily Nomination of FDNQ, Transporter shall make all necessary arrangements to ensure that it is able to schedule Gas flows in accordance with FDNQ hereinafter referred to as Scheduled Quantity.
- b) Transporter shall be under no obligation to schedule Gas flows for a Shipper at the relevant Delivery Point and Redelivery Point which:
 - i. Are at rates in excess of the MDR or MOR, as applicable, for that Shipper;
 - ii. Have been nominated by that Shipper at lead times less than those set down in Section 4.6 c); or
 - iii. Are less than required to operate any necessary compression facilities or are less than required for accurate measurement of the Gas;
- c) On a day (“D-1”) prior to Gas Flow Day (“D”), Transporter shall schedule the nominations of Balancing Quantities by the Shipper(s) at the relevant Point as **“Imbalance Scheduling”** and the nominations received from Shipper(s) for the quantities (**“Firm Quantities”**) under respective CT Agreements wherein Transporter is liable for Liquidated Damages, up to MDQ. In the event, if Shipper(s) has nominated quantities > MDQ and/or has nominated any non-Firm Quantities, then the Transporter shall provide the available capacity after scheduling the Firm Quantities and Imbalance Scheduling as mentioned in this sub-section by scheduling such non-Firm Quantities on equitable basis.
- d) On a Gas Flow Day, if Transporter determines at any time that the capacity of Transporter Facility or portion thereof, including the Point(s) at which Gas is tendered for transportation, is sufficient to serve transportation requirements for quantities greater than MDQ, for which nominations have been received but which have not been scheduled the Transporter shall provide available capacity by scheduling such requirements > MDQ , which is to be confirmed by the Transporter to the Shipper .

4.8 Notification of Scheduled Gas Flows

- a) In accordance with the Section 4.7, no later than 1800 hours, Transporter shall send to each of the Shippers “Daily Scheduling Statements” showing the Gas flows that have been scheduled for the Shipper on that Day.

- b) A Daily Scheduling Statement shall show in respect of Delivery Point and Redelivery Point under each CT Agreement;
- i. The volume of Gas in mmscm, which the Shipper is to deliver at their respective Delivery Point and which the Shipper is to offtake at the Redelivery Point on that Day.
 - ii. The expected Gross/Net Heating Value applicable to the Gas nominated to be delivered at the Delivery Point on that Day as provided by the Shipper in its nominations and at the Redelivery Point on that Day as determined by Transporter.
 - iii. The quantity, in MMBTU, of Gas implied by sub-Section i. and sub-Section ii.
 - iv. The rate, in MMBTU per hour, at which the Gas is to be delivered by the Shipper at the Delivery Point and to be offtaken at the Redelivery Point during the Day.
 - v. The volume of Gas as Balancing Quantity, in MMSCM and/or MMBTU, which the Shipper is to deliver at the Delivery Point or to offtake at the Redelivery Point on that Day.
- c) In respect of a Point on a Day a Shipper's "**Scheduled Quantity**" shall be the quantity of Gas that the Transporter has scheduled to flow on behalf of such Shipper at that Point on that Day, as identified in the most recent Daily Scheduling Statement for the Day in accordance with Section 4.8
- d) In respect of a Point on a Day a Shipper's "**Scheduled Gas Flows**" shall be such Shipper's Scheduled Quantity for that Point on that Day together with the rate at which the Gas is scheduled to flow at all times during the Day, as identified in the most recent Daily Scheduling Statement for the Day in accordance with Section 4.8 (a).

SECTION 5 – CONSTRAINTS

5.1

- a) **“Constraint”** shall mean any temporary event, which prevents the Transporter, acting as a Reasonable and Prudent Operator, from either receiving Gas from a Shipper at its relevant Delivery Point at the Maximum Offtake Rate or which prevents the Transporter from delivering Gas to the Shipper(s) at the Redelivery Point at the Maximum Delivery Rate not due to Force Majeure affecting the Transporter and/or Shipper’s non-compliance with this Operating Code affecting the Transporter. **“Constraint Day”** means a Day on which a Constraint occurs.
- b) **“Operational Flow Order”** means a notice issued by the Transporter to each of the Shippers in accordance with Section 5.2 below, on a Constraint Day, or in anticipation of a Constraint Day (as the case may be), or an event of Emergency (as defined in Section 5.5 below) occurring in respect of the Transporter Facilities or any localised part thereof.
- c) The Transporter shall have the right to take any action, acting as Reasonable and Prudent Operator, that may be required (including suspension or reduction of service to any of the Shipper) to correct any Imbalances or other operational difficulties, which impair or threaten the operational integrity of the Transporter Facilities or the maintenance of transmission of Gas to the Shipper(s). In such circumstances, the Transporter shall not discriminate in favor of – or against any particular Shipper but shall treat all the Shippers fairly.

5.2 Operational Flow Order:

- a) On a Constraint Day, Transporter shall, acting as a RPO, be entitled to curtail receipts and / or deliveries of Gas from the Shippers, on an equitable and non-discriminatory basis with respect to all the Shippers in accordance to Section 5.3, without any liability to Transporter but subject to the limitations of Section 5.7.
- b) On a Constraint Day, the Transporter shall have the right, acting as RPO, to issue Operational Flow Order to the Shipper at their respective Delivery Points and the Redelivery Point to alter Gas receipts and deliveries that are necessary (a) to alleviate conditions which threaten the integrity of the Transporter Facilities and (b) to maintain pipeline operations that are necessary to provide efficient and reliable Gas Transmission services under this Operating Code and the GTA. The Operational Flow Orders shall be issued on an equitable and non-discriminatory basis between the Shippers and shall be issued to all the Shippers at the same time. The Operational Flow Orders shall be issued as expeditiously as possible.
- c) In the event of a Constraint or in anticipation of a Constraint, the Transporter shall, as expeditiously as possible and on an equitable and non-discriminatory basis with respect to the Shippers, notify all the affected Shippers:-
 - i. the nature of the Constraint;
 - ii. commencement, and (so far as practicable) the nature, extent and expected duration of the Constraint;
 - iii. material changes and developments in respect of the Constraint;

- iv. as soon as reasonably practicable, of the time at which the Transporter considers the Constraint is no longer continuing;
 - v. the details of the effects that the Constraint has on the Delivery Point of each Shipper and/or the Redelivery Point in relation to each Shipper; and
 - vi. the quantity of Gas that the Transporter expects to transmit, in accordance with Section 5.3 below, on behalf of each of the Shippers during such period.
- d) The Transporter shall give notice to each of the Shippers and the Shippers shall:
- i. take, or cause their respective operators at their respective Delivery Point and/or the Redelivery Point to take the necessary actions requested by Transporter in such notice;
 - ii. cooperate with Transporter so as to enable the Transporter to take steps for overcoming the Constraint; and
 - iii. in so doing comply with the Transporter reasonable instructions and requests as expeditiously as practicable.

5.3 Allocation of Capacity on a Constraint Day:

In the event of any Constraint, the Transporter shall, as soon as possible and on an equitable and non-discriminatory basis with respect to the Shipper, shall make available capacity in the Transporter Facilities as per the following order:

- a) the available capacity shall be made available among the Shippers for Balancing Quantities on a pro-rata basis based on the Imbalance Scheduling.
- b) the available capacity shall be made available among the Shippers for Firm Quantities on a pro-rata basis based on the Scheduled Quantity.
- c) the available capacity shall be made available among the Shippers for Authorised Overrun Quantities and other non-Firm Quantities on a pro-rata basis based on the quantities scheduled by the Transporter.

5.4 Consequences of Constraints:

- a) The Transporter shall, at all times during a Constraint, act as a RPO, in order to mitigate the effects of the Constraint and shall take steps to restore normal operation of the Transporter Facilities as soon as reasonably possible.
- b) The Transporter shall, at all times during a Constraint, use reasonable endeavors as an RPO to ensure that such curtailments or interruptions are kept to a minimum and are infrequent.
- c) On a Constraint Day, if the Transporter has received insufficient quantities of Gas from the Shipper for reasons other than any default of the Transporter and Transporter is rendered unable to meet its obligations to transmit and make available for offtake the Gas at the Redelivery Point, the Transporter shall be entitled to curtail deliveries of Gas to the Redelivery Point in accordance with the provisions of this Section 5.

- d) Without limiting the Transporter's available remedies, if any of the Shipper fails to comply, or fails to cause its operator to comply, with any Operational Flow Orders issued by the Transporter in accordance with this Section 5, then Transporter may charge such defaulting Shipper, the Unauthorised Overrun Charge and/or Imbalance Charge under its respective GTA, for each MMBTU of Gas by which the defaulting Shipper deviates from the Operational Flow Order, if such Shipper has delivered or offtaken more Gas than that was specified in the Operational Flow Order.
- e) The Transporter shall not be liable for any failure to deliver Gas or comply with any of its obligations to a Shipper under this Section 5 that are caused by or can be attributable to the failure of such Shipper to take actions in accordance with Operational Flow Order issued by Transporter.
- f) Where the Transporter believes that the quantity or the rate of Gas being offtaken by any of the Shipper exceeds the quantity or the rate of Gas expected to be offtaken by such Shipper in accordance with the Operational Flow Order issued by the Transporter, the Transporter shall have the right to take steps to reduce the rate of offtake of Gas by the defaulting Shipper or discontinue the offtake of Gas by the defaulting Shipper from the Redelivery Point.
- g) The Shipper shall be liable to pay for the Transmission Charges for the quantities delivered and offtaken as per the Operational Flow Order.

5.5 Emergency:

- (a) An Emergency may exist:
 - i. by reason of a leakage, or suspected leakage, of Gas; or
 - ii. in circumstances which, in the opinion of the Transporter, acting as RPO:
 - 1) the safety of the Transporter Facilities is at risk;
 - 2) the safe conveyance of Gas by the Transporter Facilities is at risk,
 - 3) Gas conveyed by the Transporter Facilities is at such a pressure or of such a quality as to constitute, when supplied to premises, a danger to life or property; or
 - 4) any other circumstances reasonably believed by the Transporter to constitute an Emergency (which, for the avoidance of doubt, may include circumstances upstream of a Delivery Point), and, where the context requires a reference to an Emergency includes the event or circumstance which gives rise to such Emergency.
- (b) In particular, but without limitation, an Emergency may exist where the Transporter's ability to maintain safe pressures within the Transporter Facilities is affected or threatened by an interruption or disruption to the Transporter Facilities or by, an insufficiency of deliveries of Gas to other Party's Facilities, or by any actual or potential failure of or damage to any part of the Transporter Facilities or any other act or omissions of the Shipper which gives rise to any of the situations enlisted in this sub-Section (b).

- (c) An Emergency will continue until such time as the Transporter determines that the circumstances referred to in this Section 5.5 no longer apply, that no further Emergency steps are required, and that normal operation of the Transporter Facilities may be resumed.
- (d) The Transporter as an RPO shall take steps to restore transmission of Gas and normal operation of the Transporter Facilities with reasonable diligence and efforts considering the most appropriate and predictable outcome, after an Emergency.

5.6 Interruptions:

Subject to the limitations of Section 5.7, the Transporter shall after as much notice to the Shipper as is reasonably possible be permitted to curtail deliveries of Gas without incurring liabilities to the Shipper, for such periods of time as it may reasonably be required for the purpose of effecting any emergency repairs, maintenance, replacement or upgrading or other works related to the Transmission System for reasons arising out of compliance with directives of Government Agency, for reason of safety and to avoid environmental pollution. The need for shut off will be determined and executed by the Transporter acting as RPO.

5.7 Limitations:

- a) Notwithstanding any provision of this Code, the GTA, or the CT Agreement to the contrary, the Parties agree that, for purposes of determining Shortfall Quantity under the GTA, circumstances where the Transporter is excused pursuant to this Section 5 shall be limited to a cumulative period not to exceed 168 hours in any Contract Year, nor to exceed three times during such period of 168 Hours in any Contract Year or as specified in the relevant CT Agreement. For this purpose, it is clarified that circumstances where Transporter is excused on account of Force Majeure or Planned Works or as a result of Shipper's breach of its obligations under the CT Agreement or non-compliance with this Operating Code shall not be subject to or included in such limit.
- b) For avoidance of doubt, nothing contained in this Section 5 shall excuse Transporter in respect of curtailment or interruptions due to safety or environmental concerns if such interruption/curtailment has arisen as a result of the Transporter not acting as a Reasonable and Prudent Operator.

SECTION 6 – OVERRUN, DEVIATION AND BALANCING

6.1 Authorized Overruns Quantities:

- (a) The Shipper's Authorised Overrun Quantity at each Redelivery Point measured in MMBTU, on a Day shall be calculated as follows:
- i) For each Redelivery Point, if the Allocated Quantity at the Redelivery Point \geq Scheduled Quantity at the Redelivery Point $>$ CT Redelivery Point MDQ, then the Authorised Overrun Quantity shall be the excess of the Scheduled Quantity at the Redelivery Point over the CT Redelivery Point MDQ; and
 - ii) For each Redelivery Point, if the Scheduled Quantity at the Redelivery Point $>$ Allocated Quantity at the Redelivery Point $>$ CT Redelivery Point MDQ, then the Authorised Overrun Quantity shall be the excess of the Allocated Quantity at the Redelivery Point over the CT Redelivery Point MDQ.
- (b) If the Transporter has agreed to transmit the excess quantity of Gas requested by the Shipper then the Transporter shall make reasonable endeavours to transmit and deliver the Authorised Overrun Quantity in addition to the CT Redelivery Point MDQ for that Day. Any such service provided by the Transporter shall be an “**Authorised Overrun Service**”. However, if the Transporter has received but fails to redeliver the Authorized Overrun Quantity, no Liquidated Damages shall be payable to the Shipper but Transporter shall be obligated to redeliver to Shipper the quantity received from Shipper at the Delivery Point.
- (c) Unless expressly agreed by the Transporter in writing, consent of the Transporter to transmit and deliver Gas in excess of the CT Redelivery Point MDQ shall not in any manner whatsoever be construed as an agreement to transmit and deliver Gas in excess of the MDR in any hour on any other Day other than a Day for which the Transporter has agreed to transport the Authorised Overrun Quantity.

6.2 Unauthorized Overruns Quantities:

- a) The Shipper's Unauthorised Overrun Quantity at a Redelivery Point measured in MMBTU, on a Day shall be calculated as follows:

For Ship or Pay CTAs –

- i. if Allocated Quantity at the Redelivery Point $>$ CT Redelivery Point MDQ \geq Scheduled Quantity at the Redelivery Point, then the Unauthorised Overrun Quantity shall be the excess of the Allocated Quantity at the Redelivery Point over the CT Redelivery Point MDQ;
- ii. if Allocated Quantity at the Redelivery Point $>$ Scheduled Quantity at the Redelivery Point $>$ CT Redelivery Point MDQ, then the Unauthorised Overrun Quantity shall be the excess of the Allocated Quantity at the Redelivery Point over the Scheduled Quantity at the Redelivery Point; and
- iii. If there is no such excess, the Unauthorised Overrun Quantity shall be zero.
- iv. Notwithstanding the foregoing on a Constraint Day, Unauthorised Overrun Quantity shall be equal to Allocated Quantity at Redelivery Point on such

Day minus quantity of Gas scheduled for the Shipper as specified in the relevant Operational Flow Order issued as per Section 5.2.

v.

6.3 Imbalance Quantities:

- (a) Transporter shall determine Shipper's Imbalance Quantities in respect of each Day in accordance with this Section 6.4.
- (b) Shipper's "**Positive Imbalance Quantity**" on a Day shall be the excess of the aggregate of Shipper's Allocated Quantities at all Delivery Points over the aggregate of Shipper's Allocated Quantities at all Redelivery Points in each case. If there is no such excess then the Positive Imbalance Quantity shall be zero.
- (c) Shipper's "**Negative Imbalance Quantity**" on a Day shall be the excess of the aggregate of Shipper's Allocated Quantities at all Redelivery Points over the aggregate of Shipper's Allocated Quantities at all Delivery Points in each case. If there is no such excess then the Negative Imbalance Quantity shall be zero.
- (d) The "**Imbalance Quantities**" on a Day shall mean the Positive Imbalance Quantity or the Negative Imbalance Quantity, as applicable, on that Day.

6.4 Cumulative Imbalance

- a) The Transporter shall determine the difference between the quantity of Shipper's Gas within the Transporter Facilities ("**Cumulative Imbalance**") at the start and end of each Day in accordance with this Section.
- b) The Cumulative Imbalance at the start of a Day shall be equal to the Cumulative Imbalance at the end of the previous Day.
- c) At the start of the first day when Gas is transported, the Cumulative Imbalance shall be zero.
- d) The Cumulative Imbalance at the end of a Day shall equal to Cumulative Imbalance at the start of the Day plus Positive Imbalance Quantity for the Day or minus Negative Imbalance Quantity for the Day, whichever is applicable.
- e) The Cumulative Imbalance shall be measured in SCM and MMBTU and may be either positive or negative and shall be called **Cumulative Positive Imbalance** or **Cumulative Negative Imbalance** respectively.

If the Shipper fails to maintain the Cumulative Imbalance within 10% percent of the sum of the CT Delivery Point MDQ on positive side and 5% percent of the sum of the CT Delivery Point MDQ on negative side and the Shipper does not correct the same, then the Transporter shall have the right to adjust the nominations of the Shipper at Delivery Point and Redelivery Point as the case may be to maintain the imbalances within such operational limits. If as a result of such adjustment Transporter is unable to meet its pressure obligations under Section 8, the Transporter shall not be liable for any resulting Shortfall Quantity if any Pressure Notice is served by the Shipper.

6.5 Balancing:

- a) On each day the Shipper shall be responsible to control and, if necessary, adjust nominations, receipt and deliveries of Gas, to maintain a balance between Gas delivered and received. Any adjustment to receipts and deliveries by Shipper, whether or not pursuant to notification from Transporter, shall be coordinated with Transporter and shall be done only with the consent of the Transporter and accomplished in accordance with the procedures for Nomination and Scheduling set forth in the Operating Code.
- b) On each Day, the Transporter shall be entitled, with the consent of the Shipper, which shall not be unreasonably withheld to control and, if necessary, adjust Shipper's scheduled receipts and deliveries of Gas, to maintain a balance over a Day between Gas received and delivered upon failure by the Shipper to do so in order to minimize Cumulative Imbalance
- c) In respect of any Imbalance Quantities which may occur, the Shipper and Transporter will cooperate to minimise any Imbalance Quantities taking into consideration the time period allowed for cure on any upstream or downstream entities delivering Gas to, or receiving Gas from the Transporter as the case may be and the Shipper shall make daily adjustments in nominations, receipts and/or deliveries, as the case may be.
- d) Transporter shall always have the right in accordance with Section 10 to amend the provisions related to Balancing Quantities in the Transporter Facilities in order to ensure that the Transporter Facilities is operated in the most efficient manner. The Transporter shall have the right to take any action including rescheduling that may be required (including suspension or reduction of service to the Shipper) to correct any Imbalances which impair or threaten the operational integrity of the Pipeline or the maintenance of Transportation Service to other Shippers. The Transporter shall not be liable in any manner for any loss, costs and expenses incurred by the Shipper due to any such action of the Transporter.

6.6 Correction of Imbalance quantities on Other Systems:

The Transporter shall not be responsible or liable in any manner for any imbalance arising out of any trading of capacity arrangement (including any swap arrangement) between the Shipper and any third party. The Transporter shall not be obliged to adjust or deviate from its standard operating and accounting procedures in order to alleviate any such imbalances. Any swap arrangement between the Shipper and any third party shall be subject to allocation systems being in place.

6.7 Correction of Imbalances at the End of a fortnight

Shipper shall bring Cumulative Imbalance to within operational limits at the end of each fortnight. If any Imbalance as communicated by the Transporter to the Shipper is not cured by the Shipper at the end of each fortnight, then the Transporter shall have unilateral right to adjust the nominations at Delivery and Redelivery points as the case may be, without any liability, to maintain the imbalances within operational limits as mentioned in Section 6.4.

6.8 Reconciliation

At the expiry or early termination of the relevant CT Agreement, the Parties shall reconcile the total quantities of Gas delivered by the Shipper at the relevant CT Delivery Point with the total quantities of Gas redelivered by the Transporter at the relevant CT Redelivery Point. If upon such reconciliation, it is found that the Shipper has offtaken quantities of Gas less than what was delivered by the Shipper at such CT Delivery Point, the Transporter shall redeliver equal quantities of Gas to the Shipper within 3 (three) Days of expiry or early Termination of the relevant CT Agreement and the Shipper shall make arrangement for such redelivery of Gas. If upon such reconciliation, it is found that the Transporter has under any CT Agreement redelivered at the relevant CT Redelivery Point quantity of Gas more than what was delivered by the Shipper at the relevant CT Delivery Point, then the Shipper shall deliver equal quantities of Gas to the Transporter within 3 (three) Days of the expiry or early Termination of the relevant CT Agreement. If Transporter redelivers Gas to Shipper on expiry or early termination of the relevant CT Agreement in accordance with this Section 6.8, Shipper shall pay the tariff in effect at the end of the term, plus applicable Taxes, on such quantities provided that if the Shipper incurred an Monthly Ship-or-Pay Payment for the period ending on the expiry or termination of the relevant CT Agreement, Shipper shall pay the tariff only on such quantities that exceed the quantity on which the Monthly Ship-or-Pay Payment is based.

6.9 Reconciliation beyond 3 days:

- a) If the Shipper has off-taken quantities of Gas less than what was delivered by the Shipper at such CT Delivery Point which was not cured within 3 (three) Days after the expiry or early Termination of the relevant CT Agreement then following provisions shall be applicable:
 - i) The less quantity of gas offtaken from the pipeline in the expired CT shall be the opening balance of another CT to be executed within a period of 3(three) days for same Delivery and Redelivery points.
 - ii) After a period of 3 (three) days, Transporter shall have right to purchase such quantities of gas from Shipper at Delivery Point at the rate of lowest priced gas in the pipeline system plus all the applicable taxes at Delivery Point of transport pipeline. The lowest priced gas in the pipeline system shall be informed by the Transporter from time to time.
- b) If the Shipper has off taken quantity of Gas more than what was delivered by the Shipper at the relevant CT Delivery Point which was not cured within 3 (three) Days of the expiry or early Termination of the relevant CT Agreement then following provisions shall be applicable:
 - i) The Shipper shall first make up for the additional quantity of gas offtaken from the pipeline, under a new CT or the quantity of gas offtaken more under the expired CT shall be the opening balance of another CT executed within a period of 3 (three) days for same Delivery and Redelivery Point.
 - ii) If the imbalance is not cured beyond 3 (three) Days then after a period of 3 Days, Shipper will have to buy such gas from the Transporter at Redelivery Point at the rate 120% of the highest priced gas in the pipeline system plus transmission charges

and all the applicable taxes and charges at Redelivery Point. The highest priced gas in the pipeline system shall be informed by the Transporter from time to time.

- c) In case Shipper is ready to cure the imbalance within a period of 3 days and Transporter is unable to provide the gas transmission services during that period then the Transporter shall exclude the number of Days for which the services could not be offered by the Transporter from the calculations at Clause 6.9 (a) and Clause 6.9 (b) above.

SECTION 7 – PRESSURE

7.1 Acceptable Pressure Ranges:

For each Point there shall be an Acceptable Pressure Range, as specifically provided in the CT Agreement.

7.2 Pressure at Delivery Point:

The Shipper shall ensure that Gas shall be delivered to Transporter at the Delivery Point at pressures sufficient to allow the Gas to enter the Transporter Facilities, within the Acceptable Pressure Range set out in the relevant CT Agreement.

7.3 If the Shipper has failed to comply with the obligations prescribed in the Section 7.2 above; the Transporter shall have the right to refuse to take delivery of Gas at the Delivery Point. Such refusal to take deliveries of Gas at the Delivery Point shall not be construed as a failure of the Transporter in performing its obligations under the GTA and no Shortfall Quantities shall be applicable. The Shipper may, however, be obligated to pay Transmission Charges as determined in accordance with the GTA.

7.4 Difference in Pressure at Delivery Point:

- a) **High Pressure at Delivery Point:**
In the event that Shipper is delivering Gas at the Delivery Point and the pressure at the Delivery Point has increased beyond the Acceptable Pressure Range for such Delivery Point but the rate of flow at the Delivery Point is below that set down in the Daily Scheduling Statement and is not rising, then Shipper may serve a Pressure Notice to the Transporter in accordance with the Section 7.8.
- b) **Low Pressure at Delivery Point**
 - i. If the Gas, which Shipper makes available at the Delivery Point, falls to a pressure below the Acceptable Pressure Range then Transporter shall use reasonable endeavors to transmit that Gas, and Transporter may issue a revised Daily Scheduling Statement reflecting its revised expectations on Gas flows and Imbalance Charges may become due but there shall be no Shortfall Quantity.
 - ii. Transporter shall not have any specific remedy if the pressure at Delivery Point falls below the Acceptable Pressure Range other than the remedies stated under Section 7.3.

7.5 Pressure at the Redelivery Point:

- a) Transporter shall deliver Gas for Shipper's account at the pressures existing from time to time in Transporters Facilities at the Redelivery Point(s) that may vary within the Acceptable Pressure Range for such Redelivery Point.
- b) The Transporter may reduce the pressure for offtake from that specified in Section 7.5 a) down to not less than minimum pressure of the Acceptable Pressure Range for any reason.

- c) Subject to Section 7.5 d), the Transporter shall be relieved of its obligations under Section 7.5 a), if in order to maintain sufficient pressure in its transmission system to continue operation, it would be necessary to reduce or switch-off totally the quantities to be delivered at one or more Redelivery Point(s) under the condition that (a) the quantities to be offtaken are greater than quantities scheduled at Redelivery Point or are to be subjected to Operational Flow Orders as per Section 5.2 or are in excess of the quantities actually supplied at corresponding Delivery Point and (b) the operation of the system is duly endangered for providing Transmission Services under normal conditions and causes attributable to Shipper.
- d) The relief referred to in Section 7.5 c) shall only be available to the Transporter if it has used reasonable endeavours to maintain the pressure specified in Section 7.5 a).

7.6 Low Pressure at the Redelivery Point:

- a) Where the Gas, which Transporter makes available for offtake at the Redelivery Point, falls to a pressure below the Acceptable Pressure Range then Shipper shall use reasonable endeavors to continue to accept such Gas. In such circumstances, Shipper may serve a Pressure Notice on Transporter in accordance with Section 7.8 PROVIDED that the low pressure is not attributable to:
 - i. Shipper not delivering the Scheduled Gas Flows at the Delivery Point; or
 - ii. The pressure at the upstream of the Delivery Point having fallen below the Acceptable Pressure Range; or
 - iii. Shipper having a Cumulative Negative Imbalance Quantity in excess of five percent (5%) on the Day in question;

7.7 High Pressure at the Redelivery Points

If the pressure at the Redelivery Point rises above the Acceptable Pressure Range and the Shipper does not have a Cumulative Positive Imbalance Quantity in excess of ten percent (10%) of the Delivery Point MDQ on that Day, then Shipper may serve a Pressure Notice on the Transporter in accordance with the Section 7.8. Shortfall Quantities may arise from this breach.

7.8 Pressure Notice:

- a) In accordance with Section 7.4 a) and 7.6 and 7.7, Shipper may serve a “**Pressure Notice**” on Transporter where Transporter fails to maintain the Transporter Facilities within the Acceptable Pressure Range and the same is causing the Shipper to breach its obligations under this Agreement.
- b) A Pressure Notice shall state that Shipper will no longer accept any Imbalance Charges because of unacceptable pressures in the Transporter Facilities. It shall also specify:
 - i. The Delivery Point or Redelivery Point in question;
 - ii. The current pressure at the Point;
 - iii. The Acceptable Pressure Range for the Point;
 - iv. The current flow rate at the Point; and

- v. The flow rate at the Point required by the most recent Daily Scheduling Statement for the Day.

- c) If Shipper serves a Pressure Notice on Transporter then Shipper shall not be liable for any Imbalance Charges under the GTA for the period between the Pressure Notice being received by Transporter and a revised Daily Scheduling Statement being received by Shipper however, Shortfall Quantities shall also become applicable in accordance with the provisions of the GTA.

SECTION 8 – QUALITY

8.1 Gas Quality Tests:

- a) There shall be arrangements, in accordance with this Section 8.1 for determining whether or not the Gas meets the Specification as specified in Annexure 2 of GTA
- b) Location of Tests:
The quality of the Gas received and delivered by Transporter shall be determined by on line Gas Composition Measurement Facilities or by the tests where such facilities are not installed.
- c) Specification for Tests:
Subject to Section 8.1 b) Measuring Party shall determine the composition of Gas at each Point by component analysis through automatic on-line chromatographs and computed at such discrete intervals that are reasonable within the capabilities of the dedicated continuous measuring instruments of standard manufacture acceptable to all parties. Such measurement facilities for determining the composition of Gas shall be referred to as the Gas Composition Measurement Facilities. The Party owning or having access to such Gas Composition Measurement Facilities shall provide adequate access to the other Party for all purposes of this Operating Code and the GTA.
- d) Chromatography shall be performed in accordance with ISO 6975 ("Gas – Extended analysis – Gas-chromatographic method"). The values of the physical constants for the Gas components shall be determined in accordance with ISO 6976/ASTM 3588D/GPA 2145 & GPA 2172 or any other relevant standard ("Gas – Calculation of calorific values, density, relative density and Wobbe index from composition") and ISO 12213/AGA-8 ("Gas – Calculation of compression factor").
- e) Non-Hydrocarbon Tests (sulphur/moisture analysis) may be carried out by Shipper/Transporter at Delivery/Redelivery points respectively based on mutual agreement as per requirement.

8.2 The Gas intended to be tendered for delivery or delivered by the Shipper at the Delivery Point shall conform to the Specification in accordance with Annexure 2 of GTA.

8.3 Without prejudice to the provisions contained in Section 8.4, if the Shipper or the Transporter becomes aware of any Off-Spec Gas expected to be delivered at the Delivery Point or in the event that Gas tendered for delivery by the Shipper at the Delivery Point fails to conform to the Specification in accordance with Annexure 2 of GTA, then:

- a) The relevant Party (Shipper or Transporter) shall notify the other Party in writing immediately and provide full details of the nature and expected duration of such delivery;
- b) Acting as a Reasonable and Prudent Operator, the Shipper shall use reasonable endeavours carry out such remedial work as required to bring the Gas within the Specification.

- c) Within 2 (two) hours after receiving any such notice of Off Spec Gas, the Transporter shall notify the Shipper of its election to accept or reject such Off-Spec Gas and if the Transporter fails to respond to Shipper's notice within said time period, Transporter shall be deemed to have accepted such Off-Spec Gas.

8.4 If the Gas offered for transmission by Shipper at the Delivery Points shall fail at any time to conform to the Specifications in accordance with Annexure 2 of GTA, then Transporter shall have a right to reject all or any portion of such Gas which has failed to conform to the specifications set forth herein.

At any time after the Transporter has accepted or is deemed to have accepted any Off-Spec Gas in accordance with Section 8.3 c), Transporter may, at its election, subsequently reject further quantities of Off-Spec Gas with immediate effect upon providing written notice of such election to the Shipper.

The acceptance, or deemed acceptance, of any Off-Spec Gas by the Transporter at the Delivery Point in accordance with the provisions of this Section shall not be construed as an agreement or consent by the Transporter to accept any Off-Spec Gas at the Delivery Point at any future point in time.

8.5 If the Transporter refuses to accept Gas tendered by Shipper because such Gas does not conform to the Specifications, then Shipper shall be liable to pay the Transmission Charges as specified in the GTA.

On a Day where Transporter refuses to accept Gas tendered by Shipper under this Section, Shipper may become liable for Imbalance Charges, if any, under the Operating Code and/or the GTA, but there shall be no Shortfall Quantity under the GTA on this account.

8.6 Except in relation to any Off-Spec Gas that the Party affected has, or is deemed to have, accepted pursuant to Section 8.3 c) and 8.8 c), the other Party shall be liable for and shall indemnify the Party affected against all damages, claims, costs and liabilities which the Party affected may incur reasonably or for which the Party affected may be liable as a direct result of the delivery of Off-Spec Gas hereunder by the other Party, including, but not limited to the following:

- a) Costs and expenses in cleaning, rectifying or repairing any part or the whole of affected or damaged facilities of the Party affected by the Off-Spec Gas; and
- b) Costs and expenses of any measures taken by the Party affected for bringing the Off-Spec Gas within the Quality Specifications;

The liability of the Transporter or the Shipper, as the case may be under this Section 8 shall be limited as set out in GTA including Clauses 7.7 of GTA.

8.7 Subject to Section 8.8, the Gas tendered for delivery at the Redelivery Point by the Transporter shall conform to the Specification in accordance with Annexure 2 of GTA.

8.8 Without prejudice to the provisions contained in Section 8.9, if the Transporter or Shipper becomes aware of any Off-Spec Gas expected to be delivered at the Redelivery Point or in the event that Gas tendered for delivery by the Transporter at the Redelivery Point fails to conform to the Specification in accordance with Annexure 2 of GTA, then:

- a) the relevant Party (Transporter or Shipper) shall notify the other Party in writing immediately and provide full details of the nature and expected duration of such delivery;
- b) Acting as a Reasonable and Prudent Operator, the Transporter shall use reasonable endeavours to carry out such remedial work as required to bring the Gas within the Specification.
- c) Within 2 (two) hours after receiving any such notice of Off Spec Gas, the Shipper shall notify the Transporter of its election to accept or reject such Off-Spec Gas, and if the Shipper fails to respond to Transporter's notice within said time period, Shipper shall be deemed to have accepted such Off-Spec Gas.

8.9 If the Gas offered for delivery by Transporter at the Redelivery Point fail at any time to conform to the Specifications in accordance with Annexure 2 of GTA, then Shipper shall have a right to reject all or any portion of such Gas, which has failed to conform to the specifications set forth herein.

At any time after the Shipper has accepted or is deemed to have accepted any Off-Spec Gas in accordance with Section 8.8 c), Shipper may, at its election, subsequently reject further quantities of Off-Spec Gas with immediate effect upon providing written notice of such election to the Transporter.

The acceptance, or deemed acceptance, of any Off-Spec Gas by the Shipper at the Redelivery Point in accordance with the provisions of this Section 8.9 shall not be construed as an agreement or consent by the Shipper to accept any Off-Spec Gas at any Redelivery Point at any future point in time.

8.10 If the Shipper refuses to accept Gas tendered by Transporter at the Redelivery Point because such Gas does not conform to Specifications in accordance with the Annexure 2 of GTA and it is not due to the failure of Shipper in tendering Gas at the Delivery Point conforming to Specifications in accordance with the Annexure 2 of GTA, then Shipper shall not be liable for payment of Transmission Charges to the extent of the Off-Spec Gas quantities. Any Imbalance Charge arising due to this on such Day shall not be payable. Further, Shortfall Quantities shall also arise as per the provisions of GTA.

8.11 However Shipper shall have no rights under Section 8.10 if Transporter's failure to tender Gas meeting the Specification in accordance with Annexure 2 of GTA at Redelivery Point is a consequence of Shipper tendering Gas at the Delivery Point, which does not conform to the Specification in accordance with Annexure 2 of GTA unless such Gas was accepted by Transporter in accordance with this Section 8.

8.12 Without prejudice to any other remedies expressly set out in the GTA or this Code, the sole remedies that the Party has against the other Party for delivery of Off Specs Gas in breach of this Section 8 shall be those stated in the Section 8.6 only.

SECTION 9 – MEASUREMENT OF GAS

9.1 Scope & Units of Measurement:

This Section shall govern the measurement of Gas at a Point. The unit of measurement to be used in relation to any references to volumes and quantities of Natural Gas in this Agreement or in any document produced in accordance with the terms of the GTA and this Operating Code including, but not limited to, any claim, notice, Daily Nomination, Weekly Estimate, report, request, statement, Fortnightly Invoice shall be MMBTU. The Transporter shall operate the Transporter Facilities using MMBTU as the unit of measurement and the readings and registrations of the Measurement Equipment shall also be completed accordingly.

9.2 Measurement:

At each Delivery Point and at each Redelivery Point there shall be measurement equipment, or some means of establishing the measurements identified in Section 9.3.

9.3 The following shall be determined at each Delivery Point and each Redelivery Point for each Day in respect of Gas delivered within the allowed Pressure and Temperature

- a) The volume of Gas, measured in MMSCM which passed through the Delivery Point or Redelivery Point during the Day.
- b) The Gross/Net Heating Value applicable to the Gas which passed through the Delivery Point or Redelivery Point during the Day.
- c) The quantity of Gas, measured in MMBTU, implied by 9.3 a) and 9.3 b).

9.4 The measurement information identified in Section 9.3 shall be made available for the purposes of allocation as soon as possible after the Day, or as specifically agreed in respect of that Delivery Point or Redelivery Point.

9.5 In respect of any Day the “Measured Quantity” at a Point shall be the quantity of Gas, measured in MMBTU, which is determined to have flowed through the Point during that Day in accordance with Section 9.3 c).

9.6 Measurement Procedures and Equipment:

- a) All Natural Gas offtaken, transported or delivered under the GTA shall be measured at each Delivery Point Measurement Equipment and / or each Redelivery Point Measurement Equipment.
- b) The total uncertainty in the measurement of the flow of Gas by the Measurement Equipment at any Point shall in all steady-state flow conditions not exceed \pm one (1) percent over the range of twenty decimal zero (20) percent to one hundred decimal zero (100) percent of the maximum flow rate (the "Total Uncertainty"). Such total uncertainty shall be calculated using the method specified in ISO 5168 (or the latest applicable methodology) or equivalent standards as acceptable in the international Gas market for the determination of uncertainties of the measurement of those volume flow rates which are used to compute flow rates.

- c) The joint tickets shall be signed by Transporter and Shipper or its representative at Delivery and Redelivery Points on next day of Gas Flow Day. These joint tickets shall be made available for allocation of Gas at Delivery and Redelivery Points or Parties may agree that the Measured Quantity at each Point shall be confirmed by the Non-Measuring Party at the Point using the Measuring Party's website or by e-mail on the Day after the Gas Flow Day. The confirmed data shall be used for allocation of Gas at the Point. Any information/allocation shown on Transporter's electronic system prior to the said confirmation shall be operational information in nature and is subject to change until confirmed.
- d) Determination of MMBTU received or delivered:

The volume of Gas in mmscm and its Gross/Net Heating Value delivered/redelivered at a Point shall be determined taking into account the capabilities of any measuring instruments of standard manufacture and standard flow computer equipment, by measuring:

- i. the instantaneous flow of Gas corrected at standard conditions by applying suitable conversion and correction factors based on the absolute pressure (expressed in Bar), temperature (expressed in degree Celsius) and the physical properties of Gas; and
- ii. the Gross/Net Heating Value expressed in Kcal/scm measured by Gas chromatograph

The quantity of MMBTU received or delivered during any Day at a Delivery Point or a Redelivery Point shall be determined by continuous integration for that Day of the number of Standard Cubic Metres of Gas delivered multiplied by the "Gross/Net Heating Value" for the relevant "discrete interval of time" as above. However in absence of energy meter at the Point, MMBTU shall be arrived at by the multiplication of total quantity in scm delivered/redelivered during the Day and the average Gross/Net Heating Value for that Day.

9.7 Requirement of Measurement Equipment:

All Measurement Equipment:

- a) shall be provided and installed in accordance with best industry practices
- b) shall meet the standards, and is maintained, operated, calibrated and verified in accordance with, the procedures, which are in line with the latest editions of codes and standards as acceptable in the international Gas market for the measurement of Gas; and
- c) shall be compatible in all relevant respects with all other measurement equipment being used in connection with the Transporter's Facilities provided that any change to the Measurement Equipment at the Delivery Point may be made only by mutual agreement between Transporter and the Shipper(s) at such Point.

9.8 Redelivery Point Measurement Equipment:

- a) Transporter shall be the Measuring Party at the Redelivery Point and Shipper shall be the Non-Measuring Party at such Point.
- b) The Transporter shall provide and install (or procure the provision and installation) the Measurement Equipment at each Redelivery Point in the Transporter Facilities hereinafter referred to as the “**Redelivery Point Measurement Equipment**”. The Transporter, shall thereafter operate, maintain and renew the Redelivery Point Measurement Equipment. The ownership of Redelivery Point Measurement Equipment shall always remain with the Transporter in above case. The Transporter may also, on a case-to-case basis, agree to use the Measurement Equipment installed and owned by the Shipper or other party at the Redelivery Point in which case the Transporter shall have the right to operate and maintain such Measurement Equipment, the terms and conditions for which shall be agreed upon.
- c) The Shipper may also provide and install (or procure the provision and installation) a Measurement Equipment at the Redelivery Point. Such Measure Equipment may be used as check meter. The Shipper shall thereafter operate, maintain and renew such check meter or cause such operation and maintenance and renewal of such check meter. The ownership of such check meter shall remain with the Shipper. Any pressure or volume control regulators installed by Shipper shall be operated so as not to interfere with the Redelivery Point Measurement Equipment. However, in case of any variation in the readings in the Measurement Equipment of Transporter and Shipper at the Redelivery Point, the reading of the Transporter’s meter shall be taken as final.
- d) Transporter shall procure that the Shipper has the right of access at all times and for all purposes connected with the GTA and this Operating Code to the Redelivery Point Measurement Equipment. Shipper shall procure that it would provide required land for installing of Redelivery Point measurement equipment and maintain supplies of utilities including power, water and drainage and telephone connections for operating the Redelivery Point Measurement Equipment at no cost to the Transporter.
- e) Applicable only when Redelivery Point is on HVJ/DVPL Network

As the Gas redelivered at Redelivery Point is commingled with gas received from ONGCL and PMT-JV at Hazira where measurement of individual C6+ components is being done by appropriate split ratio of C6+ components in the existing Gas chromatograph based on an analysis of representative samples of Gas at the Delivery Point by key pad or any other appropriate method, the same methodology using the same split ratio as at supplier’s delivery point at Hazira shall be used at Redelivery Point for redelivery of Gas under the Agreement. To bring clarity, it is elaborated that the measurement of C6, C7, C8 and higher hydrocarbons, which is presently being done as C6+, will be done based on a split ratio of each of these components as determined at upstream supplier’s delivery point Hazira. The methodology for determination of split ratio will be as agreed between GAIL and ONGC. In case, appropriate online Gas chromatograph is installed by ONGC at Hazira, the actual ratio of C6+ components as determined at Hazira shall be used at Redelivery Point under this Agreement.

9.9 Delivery Point Measurement Equipment:

- a) Unless Transporter and Shipper otherwise agree, Shipper or his authorised nominee shall be the Measuring Party at the Delivery Point and Transporter shall be the Non-Measuring Party at such Point.
- b) The Measuring Party at the Delivery Point shall provide and install (or procure the provision and installation) the Measurement Equipment at the Delivery Point, hereinafter referred to as the **“Delivery Point Measurement Equipment”**. The Shipper shall ensure either the Shipper or Shipper’s Upstream Transporter will also operate, maintain and renew the Delivery Point Measurement Equipment.
- c) The Transporter may also provide and install (or procure the provision and installation) a Measurement Equipment at the Delivery Point. Such Measure Equipment may be used as check meter. The Transporter shall thereafter operate, maintain and renew the check meter. The ownership of such check meter shall remain with the Transporter in this case. Any pressure or volume control regulators installed by Transporter shall be operated so as not to interfere with the Delivery Point Measurement Equipment.
- d) Shipper shall procure that the Transporter has the right of access at all times and for all purposes connected with the GTA and this Operating Code to the Delivery Point Measurement Equipment. If the Transporter elects to install a check meter at the Delivery Point then the Shipper shall procure that it would provide and maintain supplies of utilities including power, water and drainage and telephone connections for operating the Delivery Point Measurement Equipment at no cost to the Transporter.

9.10 Verification of Measurement Equipment:

- a) The accuracy of Measurement Equipment shall be verified by the Measuring Party at reasonable intervals in line with standard industry practices at the expense of the Measuring Party (except as provided below in the case of special tests), and if requested, in the presence of representatives of the Non-Measuring Party, but the Measuring Party shall not be required to verify the accuracy of such equipment more frequently than once in any 30 day period. However, verification / calibration / proving of Measuring Equipment shall be carried out as per the relevant codes and standards.
- b) The Non-Measuring Party may request that the Measurement Equipment(s) be verified at any time or in case of a dispute, by an accredited third party, approved by Board for the purpose, in which case, subject to Section 9.10 a), the costs and expense of such verification shall if the Measurement Equipment are found to register within the Total Uncertainty of $\pm 1\%$ be paid by the Non- Measuring Party and in any other case by the Measuring Party. On verification as specified in this Section 9.10 b) and 9.10 a) above, the Measurement Equipment(s) shall be calibrated to read centrally within the total uncertainty of ($\pm 0.5\%$).

- c) Accuracy of the Measurement Equipment shall be subject to specifications (if any) laid down by Board.
- d) Any verification pursuant to this Section shall be conducted by Party operating such Measurement Equipment at such Point. Party operating such Measurement Equipment shall give three (3) days advance notice of such verification to the other Parties, who shall be entitled to be present and may attend with their representatives. However, the absence of such Party or its representative shall not invalidate the findings of any verification conducted at the notified time and date. Party operating such Measurement Equipment shall provide a verification report to the other Party within three (3) days of any verification stating the results of such verification.
- e) The results of any verification conducted by Party operating such Measurement Equipment shall be binding on the Parties to the GTA unless the other Party within fourteen (14) Days after receiving the verification report specified in Section 9.10 d) gives a notice to Party operating such Measurement Equipment that the accuracy of such verification is disputed in which case the dispute shall be referred to the Measurement Expert appointed in accordance with Section 9.12.
- f) Notwithstanding the resolution of any dispute still pending, Transporter shall produce Fortnightly Invoice under the GTA on the basis of its verification.
- g) In the event of a failure of any Measurement Equipment, the owner of the Measurement Equipment shall get the relevant metering satisfactorily repaired or replaced as soon as possible.

9.11 Failure of Measurement Equipment:

- a) Where the Measurement Equipment(s) are found when so verified to register outside the total uncertainty of ($\pm 1\%$) or out of service, then the quantity of Gas delivered shall be determined:
 - i. By correcting the error if the percentage of error is ascertainable by calibration, tests or mathematical calculation; or, in the absence of 9.11 a) (i), then
 - ii. By using the registration of any check meter or meters if installed and accurately registering; or, in the absence of both 9.11 a) (i) and 9.11 a) (ii), then
- b) By estimating the quantity of delivery by deliveries during the periods under similar conditions when the meter was registering accurately.
- c) Period to which the above corrections shall apply be as under:
 - i. No correction shall be made regarding readings made during the period before the preceding verification of the Measurement Equipment when they were last registering within total uncertainty of $\pm 1\%$.
 - ii. If any period during which the Measurement Equipment has begun to register inaccurately is known or agreed upon, the correction shall be applied for such period.

- iii. In case (ii) is not possible the correction shall be made for a period equal to half of the time elapsed since the date of last verification. However, the correction period shall not exceed sixteen days.

Such allowances or surcharges and quantities to be delivered or redelivered shall be limited for a period as determined above. The amount of allowance to be made to or the surcharge to be made on the Shippers in consequence of the inaccurate registration shall be shown in the next Fortnightly Invoice rendered by Transporter under the provisions of their respective GTAs. Further, if such carry over and adjustment is not possible on account of expiry or termination of the GTA, such dues shall be paid forthwith by the owing Party to the other Party

9.12 Measurement Expert:

- a) At least one (1) month prior to the Start Date the Parties shall agree upon three individuals each of whom shall be an independent Third Party and each of whom shall have the necessary and appropriate qualifications and experience in measurement of Gas which will enable each of them to act and advise as experts with regard to the measurement of the quantity and quality of Natural Gas and the maintenance, verification and calibration of the Measurement Equipment, (each such individual shall be referred to as a “**Measurement Expert**”).
- b) The Measuring Party hereby grants to, or shall procure for the Non- Measuring Party to their respective GTA and the Measurement Expert, all necessary rights of access and inspection in respect of all Measurement Equipment to the extent required to settle the dispute under this Section. Furthermore, the Measuring Party shall undertake and shall permit any Measurement Expert to witness the calibrations and metering accuracy tests and to observe the operations of the Measurement Equipment, and shall furnish to any Measurement Expert at his request, the metering data and other test information applicable to the Measurement Equipment reasonably necessary for the measurements and tests required for the purposes of the GTA or the Allocation Arrangement, as the case may be.

9.13 Data Transfer:

- a) Transporter shall notify the Shipper, as soon as reasonably practicable on each Day, the Measured Quantity and / or the Allocated Quantities at the Delivery Point, determined in accordance with this Section 10 or the Allocation Arrangement, as the case may be.
- b) Transporter shall notify the Shipper of the Measured Quantity and / or the Allocated Quantities at the Redelivery Point determined in accordance with this Section 9 or the Allocation Arrangement, as the case may be.

9.14 Specific Gravity:

The specific gravity of Gas flowing through the Measurement Equipment shall be determined by means of Gas Composition Measurement Equipment located (1) at or near the Delivery Point and (2) at or near the Redelivery Point or at any other point mutually agreed on the Transporters Facilities installed and maintained in accordance with the specifications set forth in the manufacturer's recommendations.

9.15 Flowing Temperature:

The flowing temperature of the Gas being metered shall be determined by means of a recording thermometer of a type acceptable to both Transporter and Shipper, located (1) at or near the Delivery Point and (2) at or near the Redelivery Point or at any other point mutually agreed on the Transporters Facilities installed and maintained in accordance with the specifications set forth in the manufacturer's recommendations.

9.16 Books and Records:

Transporter and Shipper shall prepare and maintain proper books and records, including meter readings, calibrations, of all matters pertaining to the transmission of Gas under this Operating Code. The Transporter shall retain those records for 3 (three) years. Subject to the right of Transporter to withhold information not related to performance under the GTA, Shipper may examine such books and records of the Transporter to verify any statement, invoice, claim or other document produced in accordance with this Operating Code upon reasonable notice and at reasonable times.

9.17 Measurement Equipment compliance:

The Measurement Equipment shall comply with the latest edition of the following Codes & Standards:

- a) ISO 31 "Quantities and Units";
- b) ISO 5168 "Measurement of fluid flow - Evaluation of uncertainties"
- c) ISO 6975 "Gas - Extended analysis - Gas-chromatographic method"
- d) ISO 6976 "Gas - Calculation of calorific values, density, relative density and Wobbe index from composition"
- e) ISO 10715 "Gas - Sampling guidelines"
- f) ISO 10723 "Gas - Performance evaluation for on-line analytical systems"
- g) Relevant AGA standard for compressibility factor for calculation and Gas measurement
- h) GPA2145 Table of physical constants for Natural Gas industry
- i) ASTM 3588D Calculation of specific gravity

or any other latest version of the applicable AGA/ISO Code and Standard and the implementation of the same shall be mutually agreed.

SECTION 10 – MODIFICATIONS

- 10.1** The Transporter or Shippers may propose Modifications (each a “Modification”) to the Operating Code, and each proposed Modification, shall be presented by the proposer thereof in the following manner:
- a) A proposed Modification shall be in writing;
 - b) A proposed Modification shall set out in sufficient detail the nature and purpose of the proposed Modification;
 - c) The proposer shall nominate an individual as the proposer’s representative in relation to the proposed Modification;
 - d) If the proposer considers that the Modification should be treated as urgent, the Modification proposal shall identify the Modification proposal as such.
- 10.2** The Transporter shall communicate the proposed Modifications to all the Shippers who have signed this Operating Code. The Transporter may from time to time recommend the form which Modification proposals should take.
- 10.3** The Transporter shall be entitled to reject any proposed Modification it considers unreasonable, impracticable or contrary to legal requirement.
- 10.4** The Transporter shall consider each proposed Modification and consult with the Shippers or with any Third party, which Transporter shall deem appropriate in relation to each proposed Modification.
- 10.5** The Transporter shall prepare and submit such report as may be required within an appropriate time period and which report shall include
- a) a statement as to the consultation which has taken place in relation to such Modification; and
 - b) a recommendation on the proposed Modification on whether it considers the proposed Modification appropriate or otherwise.
- 10.6** Following the receipt of any report pursuant to 10.5, the Transporter shall notify the Shippers of its decision in relation to any proposed Modification, and where such Modification is supported and accepted by the Transporter, it shall prepare and issue the draft Modification to the Shippers. The Transporter may vary the terms of any proposed Modification or attach such conditions thereto as it considers appropriate.
- 10.7** Following such approval or amendment of the draft Modification as the Transporter considers appropriate, the Transporter shall incorporate the Modification into this Operating Code.
- 10.8** Where the proposed Modification (or an amendment to a proposed Modification) is rejected by the Transporter, or where the Transporter declines to support such Modification (or an amendment to an existing Modification), the Transporter shall issue a notice in writing outlining the reasons for such rejection or such declination.

- 10.9** If the Transporter considers that a Modification is urgently required in order to
- a) comply with any legal requirement or change in law or regulation affecting the Transporter Facilities;
 - b) comply with the consequences of changes to the normal operation of the Transporter Facilities; and/or;
 - c) take into account experience in the operation, maintenance and/or use of the Transporter Facilities and of transportation systems generally, good industry practice and/or changes in technology

The Transporter shall issue a notice to Shipper for Modification to this Operating Code and with the consent of the Shipper which shall not be unreasonably withheld the same shall be incorporated into this Operating Code with immediate effect.

- 10.10** The Parties to this Operating Code agree that, notwithstanding the foregoing, the current version of this Operating Code may be reviewed by the Parties to this Operating Code and suitable Modifications may be incorporated into this Operating Code only upon mutual agreement.

SCHEDULE A - FORM FOR WEEKLY NOMINATIONS

Weekly Nomination for Week Starting Monday:

CT Agreement No : 1
 From : (Shipper)
 To : GAIL (India) Limited (Transporter)
 Contact Name :
 Contact Tel No :
 Date made :
 Time Made :

Delivery Point :

Day	Date	Volume mmscm	GCV/ NCV Kcal/scm	Gas quantity MMBTU	Flow rates/comments/ Overruns
Monday					
Tuesday					
Wednesday					
Thursday					
Friday					
Saturday					
Sunday					

Redelivery Point :

Day	Date	Gas Quantity MMBTU	Flow rates/comments/Overruns
Monday			
Tuesday			
Wednesday			
Thursday			
Friday			
Saturday			
Sunday			

Expectations for the Week commencing:

Continuous flows at ____ mmscmd.

SCHEDULE B - FORM FOR DAILY NOMINATION

Daily Nomination for:

CT Agreement No. :

From : (Shipper)

To : GAIL (India) Limited (Transporter)

Contact Name :

Contact Tel No :

Date made :

Time Made :

Delivery Point : Quantity _____ (in mmscm) (exclusive of Balancing Quantity)

GCV/NCV of Gas to be delivered _____ (in Kcal/scm)

Total Quantity _____ (in MMBTU)

Balancing Quantity _____ (in MMBTU)

Total Quantity _____ (in MMBTU)

Following shall be the variation in flow rates:

Start Time	End Time	Hourly Volume scm	Hourly GCV/NCV Kcal/scm	Hourly Quantity MMBTU	

Redelivery Point : Quantity _____ (in MMBTU) (exclusive of Balancing Quantity)

Balancing Quantity _____ (in MMBTU)

Total Quantity _____ (in MMBTU)

Following shall be the variation in flow rates:

Start Time	End Time	Hourly Quantity MMBTU	