Facility Specific Terms – South East Pipeline System (Facility)

1 General

1.1 Facility, version, date of publication and commencement

These Facility Specific Terms:

(a) relate to the Transportation Facility described in the Agreement Details;

(b) are version number 2;

(c) were published and commenced on 4 November 2019; and

(d) replace version number 1 which was published on 22 January 2019 and commenced on 1 March 2019.

1.2 Defined terms

(a) Capitalised terms used in these Facility Specific Terms that are defined in the Standard Terms have the meaning given to them in the Standard Terms.

(b) For clarity, 'Standard Terms' is defined in clause 1(b) of the Form of Agreement.

(c) In addition, in these Facility Specific Terms, unless the context otherwise requires:

ACST means Australian Central Standard Time.

Auction Service Priority Principles has the meaning given to the term 'auction service priority principles' in the National Gas Rules.

Authorised Variation is defined in clause 4.3(b).

Compressor Fuel means the quantity of Gas used as fuel in the provision of Transportation Services, including fuel used in compressors on the Facility and Gas engine alternator fuel, but excluding Inlet/Outlet Compressor Fuel.

CPI means:

(i) the consumer price index (weighted average for 8 capital cities, all groups) published from time to time by the Australian Bureau of Statistics; or

(ii) if the index referred to in paragraph (i) is suspended or discontinued, or if the basis of assessment is changed so that it no longer accurately reflects changes in the prevailing levels of prices substantially in the same manner as it did prior to the change in basis, such alternative index that reflects movements in the cost of living in all of the capital cities of Australia as is selected by Service Provider and substituted for that index for the period of the suspension or, in the case of a discontinuance of that index or a material alteration in its calculation, on a permanent basis.

CRS is defined in clause 13.1.

CRS User is defined in clause 13.3(b).

Default Charge Rate means the rate referred to in clause 9.7, as adjusted in accordance with clause 9.8.

Excess Imbalance Quantity is defined in clause 10.2.

Firm Service Charge Rate:

(i) as at 1 January 2019, is the amount set out in Schedule 1; and

(ii) thereafter, is the amount determined in accordance with clause 9.8.

Hourly Overrun Charge Rate means the rate described in clause 9.5(b).

Inlet/Outlet Compressor Fuel means the Gas used in any compression facilities, including gas engine alternators and heaters, that are used to provide a pressure service at any Receipt Point or Delivery Point.

Interruptible Service means a Transportation Service offered by Service Provider to a Primary Shipper:

(i) in consideration for the payment of a specific charge for that Transportation Service; and

(ii) under which that Primary Shipper may request, and Service Provider may authorise, the delivery to that Primary Shipper on a Day of a quantity of Gas if sufficient Capacity remains after all of the agreements for Transportation Services with a higher priority have been satisfied by Service Provider.

Metering Equipment is defined in clause 1 of Schedule 3 to these Facility Specific Terms.

MHQ means the maximum quantity of Gas that Shipper may supply at a Receipt Point and/or take at a Delivery Point and/or take in aggregate at all Delivery Points within a Zone, in any period of 60 consecutive minutes, as determined in accordance with clause 7.1.

Other Entitlement Bilateral Trade Charge means the charge referred to in clause 17.6.

Pipeline Gas:

(i) means Gas required by Service Provider for the purposes of operating and maintaining the Facility (including Compressor Fuel, Inlet/Outlet Compressor Fuel, heater Gas, Gas lost, Gas vented, and Gas unaccounted for); and

(ii) is, for clarity, part of the Gas that comprises System Use Gas (with the remainder of System Use Gas being Line Pack Gas).

Primary Standard Firm Shipper means a Primary Shipper with entitlement to a Standard Firm Forward Haul Service under its Primary Facility Agreement.

Standard Firm Forward Haul Service has the meaning given to the term 'standard firm forward haul service' in the National Gas Rules.

Tier 1 Excess Imbalance Charge Rate means the rate described in clause 9.3(b)(i)

Tier 2 Excess Imbalance Charge Rate means the rate described in clause 9.3(b)(ii).

Unauthorised Imbalance Charge Hourly Rate means the rate described in clause 9.4(b).

Unauthorised Overrun Charge Rate means the rate described in clause 9.6(b).

Web Address means https://epicenergy.com.au/seps-otsa/.

2 Variation to Definitions in Facility Specific Terms

2.1 Day

For the purposes of sub-paragraph (b)(i) of the definition of 'Day' in the Standard Terms, before the Standard Market Timetable Commencement Date the term 'Day' means the 24 hour period starting at 0600 hours ACST.

2.2 Gas Specification

Pursuant to sub-paragraph (b) of the definition of 'Gas Specification' in the Standard Terms, the Gas Specification is at any given time the then current edition of AS 4564 Specification for General Purpose Natural Gas except that, Shipper must ensure that Gas supplied at a Receipt Point does not:

(a) contain more than 5% by volume of carbon dioxide;

(b) have a water vapour content of more than 60 milligrams per cubic metres (60 mg/m^3) or as otherwise advised by Service Provider; and

(c) have a temperature that is greater than the temperature specified in respect of that Receipt Point as set out at the Web Address.

3 Other Services

Not applicable.

4 Scheduling and Nominations

4.1 Nomination Cut-Off Time for Services that are not Auction Services

For the purposes of sub-paragraph (b)(ii)(A) of the definition of 'Nomination Cut-Off Time' in the Standard Terms, before the Standard Market Timetable Commencement Date the Nomination Cut-Off Time for a Day for a Service that is not an Auction Service is 1500 hours ACST on the previous Day.

4.2 Scheduling of Receipts and Deliveries

(a) By no later than the applicable Scheduling Time for a Service, Service Provider will:

(i) schedule the receipts and deliveries of Gas for that Service:

(A) that have been nominated for the following Day by Shipper in accordance with the Standard Terms; but only

(B) to the extent to which those nominations are required to be accepted by Service Provider under the Standard Terms; and

(ii) notify Shipper of the Scheduled Quantities for that Service.

(b) Service Provider has no obligation to schedule for delivery to Shipper at Delivery Points on a Day more Gas in aggregate than is scheduled to be received in aggregate from Shipper on that Day at the Receipt Points plus any other quantities of Gas that Service

Provider is required to deliver to Shipper in accordance with this Agreement, less any System Use Gas to be provided by Shipper and any Gas required to correct an Accumulated Imbalance in excess of the Imbalance Allowance.

(c) Service Provider has no obligation to accept into the Facility any quantity of Gas on a Day that exceeds the total of the Scheduled Quantities at the Receipt Points for that Day together with Shipper's share of any System Use Gas for that Day and any Gas required to correct an Accumulated Imbalance in excess of the Imbalance Allowance (unless, and to the extent that, there have been any Authorised Variations for that Day).

4.3 Renominations

(a) For the purposes of paragraph (a) of the definition of 'Renomination Cut-Off Time' in the Standard Terms, the Renomination Cut-Off Time for a Day is 1800 hours ACST on that Day.

(b) If, and to the extent that, a request for a Renomination for a Day is accepted by Service Provider (**Authorised Variation**), the relevant Scheduled Quantities will be amended accordingly as follows:

(i) for a Renomination request received prior to 1130 hours ACST on a Day, the Scheduled Quantities will be amended by Service Provider by 1230 hours ACST;

(ii) for a Renomination request received after 1130 hours, but prior to 1500 hours, ACST on a Day, the Scheduled Quantities will be amended by Service Provider by 1600 hours ACST; and

(iii) for a Renomination request received after 1500 hours, but prior to 1800 hours, ACST on a Day, the Scheduled Quantities will be amended by Service Provider by 1900 hours ACST.

(c) Each time:

(i) there is an Authorised Variation in respect of Shipper; or

(ii) Service Provider approves a variation to any of the scheduled quantities of Gas for any other Transportation Facility User of the Facility,

for a Day, the System Use Gas in respect of Shipper and the other Transportation Facility Users of the Facility for that Day will be recalculated by Service Provider using the calculation in clause 6.4 and posted on the CRS.

4.4 Sequence of Gas Flow

The sequence in which Gas is received by Service Provider from Shipper on a Day under this Agreement will be:

(a) first, Shipper's share of System Use Gas for that Day;

(b) second, the amount of the Accumulated Imbalance to be corrected on that Day pursuant to clause 12 of the Standard Terms; and

(c) third, the Scheduled Quantities at the Delivery Points for that Day (including any Authorised Variations for that Day).

5 Priority Principles

5.1 Order of Priority – other than for Renominations

If there is insufficient Capacity to satisfy all:

(a) nominations by Shipper and all other Transportation Facility Users of the Facility; or

(b) quantities scheduled by Service Provider for Shipper and all other Transportation Facility Users of the Facility (other than due to any accepted Renomination(s)),

for Transportation Services for a Day, then, subject to any provisions of the Standard Terms to the contrary, Service Provider will:

(c) in the case of clause 5.1(a), schedule Gas deliveries and/or receipts in the order set out below; or

(d) in the case of clause 5.1(b), curtail Gas deliveries and/or receipts in the opposite order to that set out below (and where Service Provider is curtailing Gas deliveries and/or receipts, references below to quantities nominated by Shipper or another Transportation Facility User will be taken to be references to quantities scheduled by Service Provider for that Shipper or other Transportation Facility User):

(i) Quantities nominated by:

(A) Primary Shippers within their respective quantities of Reserved Capacity for Standard Firm Forward Haul Service for that Day; and

(B) subject to the provisions of the Standard Terms relating to access to Capacity at Receipt Points or Delivery Points, Secondary Shippers within their respective Traded Forward Haul Service MDQs.

If the sum of the confirmed nominations exceeds the available Capacity, the available Capacity will be shared between those Primary Standard Firm Shippers and Secondary Shippers pro rata on the basis of their respective quantities of Reserved Capacity or Traded Forward Haul Service MDQs (as applicable) for the relevant Day.

(ii) Quantities nominated by Secondary Shippers within their respective Auction Service MDQs. If the sum of the confirmed nominations exceeds the available Capacity, the available Capacity will be shared between the Secondary Shippers pro rata on the basis of the amounts of their respective accepted nominations for Auction Services for the relevant Day.

(iii) Quantities nominated by Primary Shippers (and accepted by Service Provider) for an Interruptible Service. If the sum of those quantities exceeds the actual Capacity available to meet those requested Interruptible Services, the available Capacity will be shared pro-rata on the basis of the amounts of the respective accepted nominations for Interruptible Service on the relevant Day.

5.2 Renominations

If there is insufficient Capacity to satisfy all Scheduled Quantities for Shipper and all quantities of Gas scheduled for Transportation Services for other Transportation Facility Users of the Facility

on a Day due to any accepted Renomination(s), Service Provider will curtail Gas deliveries and/or receipts in accordance with:

(a) the Auction Service Priority Principles, if and to the extent they are applicable on that Day; and otherwise

(b) clause 5.1(b).

5.3 Inconsistency

In the event of any inconsistency between the requirements of the National Gas Rules and the requirements of this clause 5, the requirements of the National Gas Rules will prevail to the extent of that inconsistency.

6 System Use Gas

6.1 Take or Return of System Use Gas

Service Provider may, at no cost to Service Provider, either take System Use Gas from the Gas supplied by Shipper and other Transportation Facility Users into the Facility or return System Use Gas by reducing Gas supplied by Shipper and other Transportation Facility Users into the Facility.

6.2 Responsibility for System Use Gas

(a) Shipper will be responsible for providing Service Provider with, or taking delivery of, its share of System Use Gas, which may be a positive or negative amount.

(b) The Gas used for Inlet/Outlet Compressor Fuel at any Receipt Point or Delivery Point will be allocated only amongst Shipper and other Transportation Facility Users using the relevant Receipt Point or Delivery Point.

(c) Service Provider will use Reasonable and Prudent efforts to minimise the quantity of System Use Gas that is required for the operation of the Facility.

6.3 Supply or Return of System Use Gas

(a) Where System Use Gas is required to be supplied on a Day, Shipper must supply, and Service Provider will be entitled to take, Shipper's share of System Use Gas for that Day at no cost to Service Provider.

(b) Where System Use Gas is required to be returned by Service Provider on a Day, Shipper must accept its share of System Use Gas for that Day at no cost to Service Provider.

6.4 Calculation of System Use Gas

(a) As soon as reasonably practicable:

(i) after Service Provider has scheduled all Services for Shipper, and all Transportation Services for all other Transportation Facility Users of the Facility; and also

(ii) after an Authorised Variation; and also

(iii) after Service Provider has authorised a variation to the scheduled quantities for another Transportation Facility User of the Facility,

for a Day, Service Provider will calculate and post on the CRS the share of System Use Gas that Shipper must supply or take delivery of at the beginning of the following Day based on the most recent schedule.

(b) Service Provider may, at its discretion, provide Shipper with at least 2 months' notice that the method for calculation of Shipper's share of System Use Gas will be modified.

(c) Until the Day on which the first notice given by Service Provider under clause 6.4(b) takes effect, the quantity of System Use Gas required to be provided by Shipper will be calculated as follows:

(i) Shipper's share of System Use Gas for a Day will be the quantity determined by multiplying the System Use Gas Percentage for that Day by the quantity of Gas to be supplied by Shipper at the Receipt Points on that Day.

(ii) The **System Use Gas Percentage** for a Day will be calculated as follows:

(A) Service Provider will Reasonably and Prudently estimate the total quantity of System Use Gas required to be supplied by, or returned to, Shipper and all other Transportation Facility Users of the Facility on that Day (**Total System Use Gas Quantity**); and

(B) that Total System Use Gas Quantity will then be expressed as a percentage of the sum of the quantities of Gas nominated to be supplied at the Receipt Points on that Day by Shipper and all other Transportation Facility Users of the Facility.

(d) The Inlet/Outlet Compressor Fuel quantity for Shipper for each Receipt Point or Delivery Point used by Shipper on a Day, will be calculated as the actual quantity of Inlet/Outlet Compressor Fuel used by the compressors located at that Receipt Point or Delivery Point, as measured from that Day, pro-rated based on the quantity of Gas allocated to Shipper at the relevant Receipt Point or Delivery Point on that Day, against the total quantity of gas received at or delivered to the relevant Receipt Point or Delivery Point on that Day.

(e) Shipper acknowledges and agrees that, for the purposes of informing Shipper of Shipper's share of System Use Gas prior to the Day in accordance with clause 6.4(a), Service Provider will estimate the Inlet/Outlet Compressor Fuel quantities for the Day, but the amount of Inlet/Outlet Compressor Fuel provided by Shipper on the Day will be the actual amount calculated in accordance with clause 6.4(d), which may be greater or less than the estimated quantity. Service Provider's estimate will be based on the quantity of Gas that Service Provider Reasonably and Prudently estimates will be used by the compressors located at the Receipt Point or Delivery Point on that Day, pro-rated based on the quantity of Gas scheduled for Shipper at the relevant Receipt Point or Delivery Point for that Day, against the total quantity of gas scheduled for receipt at or delivery to the relevant Receipt Point or Delivery Point for that Day.

(f) Shipper's share of System Use Gas for a Day may be adjusted to reflect:

(i) any adjustment to Shipper's share of System Use Gas made:

(A) after an Authorised Variation or after Service Provider authorises a variation request made by another Transportation Facility User; or

(B) to reflect the actual quantity of Inlet/Outlet Compressor Fuel used on the relevant Day; and

(ii) any error in the measurement or calculation of Inlet/Outlet Compressor Fuel quantities for that Day.

(g) Service Provider will, on request by Shipper, provide on a Monthly basis, such information as is reasonably required to justify Service Provider's calculation of the quantity of System Use Gas required for each Day of the relevant Month.

6.5 Title

Title to and risk in Pipeline Gas (except for Gas unaccounted for and lost Gas), passes from Shipper to Service Provider when that Gas is used by Service Provider in the operation of the Facility and/or in the provision of the Services.

7 Hourly Limitations

7.1 Obligations of Shipper

(a) On a Day, but subject to the provisions of clause 7.1(b) and clause 17 (if and to the extent that clause is applicable on that Day), Shipper must not:

(i) supply a quantity of Gas in any period of 60 consecutive minutes at any Receipt Point in excess of:

(A) 110 per cent of 1/24th of Shipper's total Scheduled Quantities at that Receipt Point; or

(B) such greater proportion of the total Scheduled Quantities at that Receipt Point as Service Provider may, in its absolute discretion, approve;

(ii) take delivery of quantities of Gas at any Delivery Point in any period of 60 consecutive minutes in excess of 6% of Shipper's total Scheduled Quantities at that Delivery Point;

(iii) take delivery of quantities of Gas in aggregate at all Delivery Points within a Zone, in excess of:

(A) 110 per cent of 1/24th of Shipper's total Scheduled Quantities for the relevant Zone for that Day in any period of 60 consecutive minutes; or

(B) such greater proportion of Shipper's total Scheduled Quantities for the relevant Zone for that Day as Service Provider may, in its absolute discretion, approve.

(b) Shipper:

(i) is only required to comply with clause 7.1(a) if and to the extent that it has, or is able to implement a mechanism to have, ready access to the data required to monitor its take of Gas; but

(ii) must use all reasonable endeavours to have such access or mechanism.

7.2 Hourly Overrun Charge

If Shipper supplies or (as the case may be) takes delivery of a quantity of Gas in any period of 60 consecutive minutes in excess of a MHQ in circumstances where clause 7.1(a) applies, Service Provider will charge Shipper, and Shipper must pay, the Hourly Overrun Charge Rate for each GJ taken in excess of that MHQ.

8 Pressure and Temperature

8.1 Receipt Point Pressure

(a) Shipper must:

(i) supply Gas at Receipt Points (including System Use Gas and any quantity of Gas required to correct any Accumulated Imbalance to zero) at a gauge pressure as uniform as practicable; and

(ii) ensure that gauge pressure at a Receipt Point does not:

(A) fall below the minimum pressure for that Receipt Point as set out at the Web Address; or

(B) exceed the maximum pressure for that Receipt Point as set out at the Web Address,

without Service Provider's prior written approval (which approval may be given or withheld at the absolute discretion of Service Provider).

(b) Shipper acknowledges that Service Provider is under no obligation to install compression or other facilities to permit the receipt of Shipper's Gas at any Receipt Point.

(c) Shipper must ensure that upstream facilities at a Receipt Point have the capacity to supply Gas into the Facility at a pressure of at least the minimum pressure for that Receipt Point referred to in clause 8.1(a)(ii).

8.2 Receipt Point temperature

Shipper must ensure that Gas is supplied by, or for, Shipper at a Receipt Point at the temperature, or within the temperature range, for that Receipt Point as set out at the Web Address.

8.3 Delivery Point Pressure

(a) Service Provider will maintain Facility pressures so that the delivery pressure at a Delivery Point does not:

(i) fall below the minimum pressure for that Delivery Point as set out at the Web Address; or

(ii) exceed the maximum pressure for that Delivery Point as set out at the Web Address.

(b) Shipper acknowledges that Service Provider can only fulfil its obligations under clause 8.3(a) if Shipper meets its obligations under clause 8.1.

8.4 Delivery Point Temperature

Service Provider will deliver Gas to a Delivery Point at the temperature, or within the temperature range, for that Delivery Point as set out at the Web Address.

8.5 Changes

(a) If, at any time during the Term, Service Provider wishes to change the:

(i) temperature, or temperature range; or

(ii) pressure, or pressure range,

set out at the Web Address for a Receipt Point or a Delivery Point (**Change**), Service Provider will send a notice to Shipper advising of the Change and the reasons for it.

(b) If Shipper:

(i) unreasonably withholds its consent to a Change; or

(ii) unreasonably delays in giving its consent to a Change; or

(iii) gives its consent to a Change on unreasonable conditions,

Service Provider will be entitled to give effect to that Change.

(c) For clarity, this clause 8.5 does not apply to a Change which is required by Law to be made by Service Provider.

9 Charges

9.1 Charges payable by Shipper

The Charges payable, or which may be payable, by Shipper are:

(a) the Standardisation Cost Charge;

(b) the Imbalance Charge;

(c) the Unauthorised Imbalance Charge;

(d) the Hourly Overrun Charge;

(e) the Unauthorised Overrun Charge;

(f) the Default Charge; and

(g) the Other Entitlement Bilateral Trade Charge.

9.2 Standardisation Cost Charge

(a) Subject to clause 9.2(b), the Standardisation Cost Charge:

(i) is payable by Shipper for each period of 365 days (or 366 days as the case may be) during the Term;

(ii) is payable in 12 instalments for each relevant period;

(iii) as at 1 January 2019, is the amount set out in Schedule 1; and

(iv) thereafter, is the amount determined in accordance with clause 9.8.

(b) Despite clause 9.2(a), Service Provider:

(i) will:

(A) reduce the amount of the Standardisation Cost Charge; and / or

(B) refund to Shipper moneys received from Shipper on account of the Standardisation Cost Charge,

if and to the extent that Service Provider's obligations under the National Gas Rules so require; and

(ii) may increase the amount of the Standardisation Cost Charge at any time if and to the extent that the National Gas Rules so permit.

9.3 Imbalance Charge

(a) The Imbalance Charge is calculated in accordance with clause 10.2.

(b) For the purposes of that calculation:

(i) the Tier 1 Excess Imbalance Charge Rate will, at a point in time, be an amount equal to 130% of the Firm Service Charge Rate; and

(ii) the Tier 2 Excess Imbalance Charge Rate will, at a point in time, be an amount equal to 300% of the Firm Service Charge Rate.

9.4 Unauthorised Imbalance Charge

(a) The Unauthorised Imbalance Charge is calculated in accordance with clause 10.3 or clause 10.4 (as applicable).

(b) For the purposes of that calculation, the Unauthorised Imbalance Charge Hourly Rate will, at a point in time, be an amount equal to one twenty fourth of 300% of the Firm Service Charge Rate.

9.5 Hourly Overrun Charge

(a) The Hourly Overrun Charge is calculated in accordance with clause 7.2.

(b) For the purposes of that calculation, the Hourly Overrun Charge Rate will, at a point in time, be an amount equal to 300% of the Firm Service Charge Rate.

9.6 Unauthorised Overrun Charge

(a) For the purposes of clause 13.4 of the Standard Terms, the Unauthorised Overrun Charge will be calculated by multiplying the relevant excess quantity of Gas referred to in that clause (in GJ) by the Unauthorised Overrun Charge Rate.

(b) The Unauthorised Overrun Charge Rate will, at a point in time, be an amount equal to 300% of the Firm Service Charge Rate.

9.7 Default Charge

(a) If:

(i) Service Provider issues a notice clause 7.6(c) of the Standard Terms requiring Shipper to adjust its receipts or deliveries of Gas; and

(ii) Shipper fails to comply with the terms of that notice by the time stipulated by Service Provider,

Shipper must pay to Service Provider the amount equal to the number of GJs (or part thereof) of Gas in respect of which Shipper is at variance from the level of receipts or deliveries specified in that notice by the Default Charge Rate.

(b) As at 1 January 2019, the Default Charge Rate is the amount set out in Schedule 1.

9.8 Adjustment

(a) On 1 January of each year (commencing in 2020):

(i) the Standardisation Cost Charge;

(ii) the Firm Service Charge Rate; and

(iii) the Default Charge Rate,

in the amount applicable immediately prior to that date will each be adjusted by being multiplied by Service Provider by the Escalation Factor for that year.

(b) The **Escalation Factor** for a year is calculated as:

$$\mathbf{1 + [(CPI_a - CPI_b) / CPI_b]}$$

where:

(i) CPI_a means the CPI in respect of the September quarter immediately preceding the relevant adjustment date;

(ii) CPI_b means the CPI in respect of the September quarter that is 12 months before the quarter to which CPI_a relates; and

(iii) if CPI_a is less than CPI_b, then $CPI_a - CPI_b$ is deemed to be zero.

9.9 Acknowledgement

Nothing in this clause 9 limits Service Provider's entitlement to levy any other charge referred to in the Standard Terms.

10 Imbalance

10.1 Imbalance Allowance for Traded Forward Haul Service

For the purposes of paragraph (b) of the definition of 'Imbalance Allowance', if Shipper's Traded Forward Haul Service MDQ for a Day is greater than zero, Shipper's Imbalance Allowance is 8% of that Traded Forward Haul Service MDQ (expressed in GJ).

10.2 Imbalance Charge

If, at the end of a Day, the absolute value of Shipper's Accumulated Imbalance (in GJ) exceeds the Imbalance Allowance (with the amount in excess of the Imbalance Allowance being the

Excess Imbalance Quantity), then the Imbalance Charge payable by Shipper under clause 12.3 of the Standard Terms will be the sum of the following:

(a) that amount of the Excess Imbalance Quantity (in GJ) that is less than or equal to 20% of the Traded Forward Haul Service MDQ multiplied by the Tier 1 Excess Imbalance Charge Rate; and

(b) that amount of the Excess Imbalance Quantity (in GJ) (if any) that is greater than 20% of the Traded Forward Haul Service MDQ multiplied by the Tier 2 Excess Imbalance Charge Rate.

10.3 Unauthorised Imbalance Charge – Traded Forward Haul Service

(a) For the purposes of clause 12.6(a) of the Standard Terms, an Unauthorised Imbalance Charge will be payable by Shipper for each hour (or part of an hour) for which the absolute value of Shipper's Accumulated Imbalance is greater than zero.

(b) The Unauthorised Imbalance Charge will an amount equal to the absolute value of Shipper's Accumulated Imbalance (in GJ) at the beginning of the relevant hour multiplied by the Unauthorised Imbalance Charge Hourly Rate.

10.4 Unauthorised Imbalance Charge – Auction Service

(a) For the purposes of clause 12.7(b) of the Standard Terms, an Unauthorised Imbalance Charge will be payable by Shipper for each hour (or part of an hour) for which the absolute value of Shipper's Accumulated Imbalance is greater than zero.

(b) The Unauthorised Imbalance Charge will an amount equal to the absolute value of Shipper's Accumulated Imbalance (in GJ) at the beginning of the relevant hour multiplied by the Unauthorised Imbalance Charge Hourly Rate.

11 Odorisation

11.1 No odorisation by Service Provider

Gas in the Facility will not be odorised by Service Provider.

11.2 Odorisation by Shipper

Shipper must ensure that all Gas of which it takes delivery is odorised at the applicable Delivery Point(s) in accordance with the regulations under the *Gas Act 1997* (SA) or as otherwise required by Law.

12 Metering Principles

12.1 Metering Principles and responsibility

Schedules 2 and 3 to these Facility Specific Terms, together with this clause 12:

(a) contain the Metering Principles; and

(b) together with this clause 12 address which Party is responsible for the installation and maintenance of Metering Equipment,

which provisions must be complied with by:

(c) Shipper, if and to the extent they apply to Shipper; and

(d) Service Provider, if and to the extent they apply to Service Provider.

12.2 Service Provider's obligations

(a) Service Provider:

(i) will ensure that any Metering Equipment which Service Provider owns or controls and is required in order to provide a Service, complies with the Metering Principles and this clause 12; and

(ii) is responsible for the installation and maintenance of that Metering Equipment.

(b) Where Service Provider is party to contractual arrangements with the owner or controller of Metering Equipment that is required in order for Service Provider to provide a Service, which contractual arrangements require that Metering Equipment to meet specified standards, Service Provider will use its reasonable endeavours to ensure that such Metering Equipment complies with the Metering Principles.

(c) The Receipt Points and Delivery Points to which clause 12.2(a) or clause 12.2(b) applies, are specified at the Web Address.

12.3 Shipper's obligations

(a) If any Metering Equipment:

(i) is required in order for Service Provider to provide a Service; and

(ii) is not:

(A) owned or controlled by Service Provider; or

(B) the subject of contractual arrangements between Service Provider and the owner or controller of that Metering Equipment which require that Metering Equipment to meet specified standards,

then Shipper must ensure that such Metering Equipment is, subject to clause 12.3(b):

(iii) made available, at no cost to Service Provider, for use by Service Provider to provide that Service; and

(iv) operated and maintained at no cost to Service Provider so as to meet and comply with the Metering Principles and this clause 12.

(b) Clause 12.3(a) does not require Shipper to make, or cause to be made, any modification to Metering Equipment or to the way Metering Equipment is operated as at the time Shipper commences use of the relevant Receipt Point or Delivery Point.

(c) The Receipt Points and Delivery Points to which clause 12.3(a) applies, are specified at the Web Address.

12.4 General obligations

For clarity, and without limiting a Party's obligations under this clause 12:

(a) the Metering Equipment at a Receipt Point or a Delivery Point, irrespective of ownership, must at all times comply with the specifications and other technical requirements for

Metering Equipment set out in Schedules 2 and 3 to these Facility Specific Terms so as to record continuously the volume and the energy flow rate and all measurements used in their computation; and

(b) a Receipt Point and a Delivery Point must have an emergency shutdown valve, flow control valve with pressure control override, and equipment for metering, quality measurement, pressure control, isolation, protection and cleaning, and for making available metering data for instantaneous transmission to the Facility's control centre with SCADA and communications protocols acceptable to Service Provider, and any other equipment for the safe and reliable receipt (in the case of a Receipt Point) or delivery (in the case of a Delivery Point) of Gas in accordance with this Agreement.

13 Operational Communications

13.1 CRS

Service Provider has established, and maintains, a customer reporting system (**CRS**) for the purposes described in this Agreement (and for such other purposes as are notified by Service Provider from time to time).

13.2 Use of CRS

(a) Subject to clauses 13.2(b) and 13.2(c), it is intended that each notice, notification, consent, request and other communication (**Notice**) between the Parties will be given or made on the CRS.

(b) Clause 13.2(a) does not apply in relation to any Notice that is expressly required to be given in accordance with a provision of this Agreement.

(c) If at any time the CRS fails to function properly, then each Notice that is required to be given during the period of failure must be given in accordance with the Standard Terms.

13.3 Information and Access

(a) Service Provider will afford Shipper with access to the CRS during the Term on an interactive and timely basis.

(b) Service Provider agrees that access to the CRS will be provided on an interactive, non-discriminatory, timely basis only to the following persons:

(i) Shipper and other Transportation Facility Users that have a current contract for Transportation Services on the Facility with Service Provider; and

(ii) a person that has been assigned a CRS User ID and password by Service Provider,

each of such persons being a **CRS User**.

13.4 CRS User Obligations

(a) In addition to any other obligations of Shipper (express or implied) under this Agreement in relation to the CRS, Shipper must:

(i) abide by such reasonable rules for the use of the CRS as are published by Service Provider from time to time;

(ii) confine its use of the CRS to purposes necessary to meet its obligations, and to exercise its rights, under its own contract(s) for Transportation Services on the Facility with Service Provider;

(iii) only seek access on the CRS to information that is either:

(A) specific to Shipper; or

(B) relevant to all CRS Users;

(iv) not, and must not attempt to:

(A) corrupt; or

(B) interfere with,

the operation of the CRS; and

(v) implement appropriate security procedures in relation to:

(A) the CRS User ID and password assigned to Shipper by Service Provider; and

(B) Shipper's access to the CRS,

to prevent unauthorised access to Shipper's information or to the CRS.

(b) Shipper acknowledges and agrees that Service Provider would incur significant costs, expenses and inconvenience if Shipper were to breach any of the obligations referred to in clause 13.4(a).

13.5 Procedures to Back-Up, Archive and Retrieve Data

(a) After the end of each Month, Service Provider will remove all completed transactions from the CRS for the preceding Month, but notices still current at that time will not be removed.

(b) Subject to any additional statutory, regulatory or contractual record retention requirements, Service Provider will retain (for 24 Months for audit purposes) daily back-up files of the data displayed on the CRS.

(c) Service Provider will, upon receipt of a request on the CRS from Shipper:

(i) provide to Shipper, in electronic form, a copy of any data retained by Service Provider pursuant to clause 13.5(b), excluding any data which is, or which Service Provider considers to be, confidential or commercially sensitive; or

(ii) permit Shipper to view, at Service Provider's nominated office, the data retained by Service Provider pursuant to clause 13.5(b) that relates solely to Shipper.

13.6 Monitoring of CRS

Shipper acknowledges that it will be solely responsible for monitoring the CRS for information relating to or affecting Shipper.

14 Compressor Operation

Not applicable / not used.

15 Compression Services

Not applicable / not used.

16 Receipt and Delivery Points, Park Service Points and Compressor Details

16.1 Receipt Points and Delivery Points

Details of:

(a) the location of each Receipt Point and Delivery Point;

(b) the Pipeline Zone to which each Receipt Point and Delivery Point is allocated;

(c) the physical daily capacity of each Receipt Point and Delivery Point;

(d) the physical hourly capacity of each Receipt Point and Delivery Point;

(e) any consents required to be obtained before Shipper may use a particular Receipt Point or Delivery Point;

(f) any charges (including through contribution agreements) applicable to use of a particular Receipt Point or Delivery Point;

(g) any allocation agreement to which Shipper must accede before Shipper may use a particular Receipt Point or Delivery Point; and

(h) any persons with whom Shipper must agree allocation procedures before Service Provider is entitled (without placing Service Provider in breach of contract) to allow Shipper to use a particular Receipt Point or Delivery Point,

are set out at the Web Address.

16.2 Park Service Points

Not applicable.

17 Trading – other entitlements

17.1 Other Entitlement Bilateral Trades

(a) This clause 17 sets out the procedures by which Shipper may, by Bilateral Trade, transfer to or acquire from other Transportation Facility Users of the Facility, hourly entitlements, imbalance entitlements and other contractual entitlements to use Capacity (**Other Entitlement Bilateral Trade**).

(b) For clarity, an Other Entitlement Bilateral Trade does not include a Bilateral Trade to which clause 28 of the Standard Terms applies.

(c) Shipper may only enter into an Other Entitlement Bilateral Trade:

(i) with:

(A) a Transportation Facility User who is party to an operational transportation service agreement (as that term is defined in the National Gas Law) which is in the form of the standard operational transportation service agreement (as that term is defined in Part 24 of the National Gas Rules) for the Facility; or

(B) such other Transportation Facility User approved by Service Provider (which approval is not to be unreasonably withheld),

(**Valid Trading Party**); and

(ii) on, and subject to, the terms and conditions of this clause 17.

17.2 Information to be provided to Service Provider

In order for Service Provider to assess a proposed Other Entitlement Bilateral Trade (including the operational, safety and other impacts of that Other Entitlement Bilateral Trade), Shipper must first provide a joint notice of that proposed Other Entitlement Bilateral Trade from Shipper and the proposed Valid Trading Party at Service Provider's email address set out in the Agreement Details (or by such other reasonable means nominated by Service Provider, including lodgement on an electronic bulletin board maintained by Service Provider) setting out:

(a) the nature of the hourly entitlement, imbalance entitlement or other contractual entitlement to use Capacity (**Other Entitlement**) the subject of that proposed Other Entitlement Bilateral Trade;

(b) the quantity of the Other Entitlement to which that proposed Other Entitlement Bilateral Trade relates;

(c) details of the operational impacts of giving effect to that proposed Other Entitlement Bilateral Trade; and

(d) the term of that proposed Other Entitlement Bilateral Trade,

(**Proposed OEBT Notice**).

17.3 Assessment by Service Provider and giving effect to Other Entitlement Bilateral Trades

(a) As soon as reasonably practicable after receipt of a Proposed OEBT Notice, Service Provider will:

(i) assess the details in that Proposed OEBT Notice;

(ii) determine whether it requires additional information in order to determine whether it will give effect to the proposed Other Entitlement Bilateral Trade the subject of that Proposed OEBT Notice; and

(iii) if it does require additional information, notify Shipper of the nature and extent of that additional information.

(b) If Service Provider determines that it will give effect to an Other Entitlement Bilateral Trade the subject of a Proposed OEBT Notice (which, for clarity, will only be able to occur after any and all additional information required by Service Provider has first been received and assessed), then:

(i) Service Provider will notify Shipper of the date on which Service Provider, acting Reasonably and Prudently, is able to give effect to that proposed Other Entitlement Bilateral Trade; and

(ii) Shipper must, if it wishes Service Provider to give effect to that Other Entitlement Bilateral Trade from that date, provide a joint notice to that effect from Shipper and the Valid Trading Party at Service Provider's email address set out in the Agreement Details (or by such other reasonable means nominated by Service Provider, including lodgement on an electronic bulletin board maintained by Service Provider).

(c) If Service Provider determines that it will not give effect to an Other Entitlement Bilateral Trade the subject of a Proposed OEBT Notice, then Service Provider will:

(i) notify Shipper of that determination as soon as reasonably practicable after making that determination; and

(ii) set out the reason(s) for that determination.

(d) Service Provider may only refuse to give effect to an Other Entitlement Bilateral Trade the subject of a Proposed OEBT Notice if:

(i) Service Provider, acting Reasonably and Prudently, is of the opinion that giving effect to that Other Entitlement Bilateral Trade will or may:

(A) adversely affect, or impact upon, the safe and reliable operation of the Facility or any part of it;

(B) not be able to be achieved in a workable manner and consistently with other provisions of this Agreement or the Valid Trading Party's Facility Agreement; or

(C) adversely affect the ability of Service Provider to meet its obligations to any other Transportation Facility User of the Facility;

(ii) under clause 17.4 Service Provider is not required to give effect to that Other Entitlement Bilateral Trade; or

(iii) the quantity of the Other Entitlement to which that Other Entitlement Bilateral Trade relates will, for any part of the term of that Other Entitlement Bilateral Trade, exceed Shipper's relevant Other Entitlement (assessed prior to that Other Entitlement Bilateral Trade).

17.4 Grounds to refuse Other Entitlement Bilateral Trades

Service Provider is not required to give effect to an Other Entitlement Bilateral Trade the subject of a Proposed OEBT Notice if:

(a) Shipper is in breach of this Agreement; or

(b) Shipper is an externally-administered body corporate (as defined in the Corporations Act) or under a similar form of administration under the laws of some other jurisdiction; or

(c) the Valid Trading Party is in breach of its agreement with Service Provider under which it would transfer to or acquire from Shipper the quantity of the Other Entitlement to which the Other Entitlement Bilateral Trade relates.

17.5 No Responsibility for Use by Counterparty

(a) In the case of a transfer by Shipper of a quantity of an Other Entitlement, Shipper has no liability to Service Provider for any acts or omissions of the acquiring Transportation Facility User during the period of the Other Entitlement Bilateral Trade in respect of the quantity of the Other Entitlement to which the Other Entitlement Bilateral Trade relates.

(b) Clause 17.5(a) does not apply to liability of Shipper which arises independently of the Other Entitlement Bilateral Trade or this Agreement.

17.6 Other Entitlement Bilateral Trade Charge

For each Other Entitlement Bilateral Trade approved pursuant to this clause 17, Shipper must pay to Service Provider an amount equal to the actual costs and expenses (including legal costs on a solicitor and own client basis) incurred by Service Provider in assessing, and giving effect to, that Other Entitlement Bilateral Trade (**Other Entitlement Bilateral Trade Charge**).

18 Accommodating Differences in Gas Days

Not applicable.

19 In-Pipe Points

Not applicable.

20 Specific Facility Issues

Not applicable / not used.

Schedule 1: Standardisation Cost Charge, Firm Service Charge Rate and Default Charge Rate as at 1 January 2019

1 Standardisation Cost Charge

As at 1 January 2019 the Standardisation Cost Charge is $10,000.00.

2 Firm Service Charge Rate

As at 1 January 2019 the Firm Service Charge Rate is $0.5789 / GJ.

3 Default Charge Rate

As at 1 January 2019 the Default Charge Rate is $11.00 / GJ.

Schedule 2: Measurement at Receipt Points and Delivery Points for the Facility

1 Volumetric Measurement

(a) Volumetric measurement in cubic metres per hour (m^3/hr) will be calculated by a flow computer from flow meter signals, associated instruments and density and composition signals from an on-line gas chromatograph. The volumetric flow rate will be continuously recorded and integrated for the totalisation register.

(b) All measurements, calculations and procedures used in determining volume, except for the correction for the deviation from the Ideal Gas Law, will be made in accordance with the instructions contained in:

(i) American Gas Association (**AGA**) Report No 3 for the Orifice Plate Metering Systems;

(ii) AGA Report No 7 as applied for Turbine Metering;

(iii) AGA Report No 7 as applied for Positive Displacement Metering;

(iv) AGA Report No 9 for Ultrasonic Metering; and

(v) relevant industry standards and such other standards as may be specified by Service Provider for any other metering system,

together with all presently existing supplements and appendices to those reports or any revisions of them acceptable to the Parties.

(c) Those instructions will be converted where necessary for compliance with Australian Standard AS1000 *'The International System of Units (SI) and its Application'*, the Commonwealth *National Measurement Act 1960* and regulations under that Act and the Australian Gas Association publication *'Metric Units and Conversion Factors for use in the Australian Gas Industry'* or any revision of those publications acceptable to the Parties.

(d) The compressibility correction for deviation from the Ideal Gas Law will be determined from the data contained in AGA Report No 8, or any revision of that report acceptable to the Parties. The compositional data used in these calculations will be primarily derived from the on-line gas chromatograph.

2 Energy Management

The energy flow rate will be calculated by the flow computer in gigajoules per hour (GJ/hr) from the product of volumetric Gross Heating Value and the volumetric flow at Standard Conditions. The heating value will be continuously derived from the same on-line gas chromatograph used for determining the relative density and composition used in the volumetric flow calculation. The energy flow rate will be continuously recorded and integrated for the totalisation register.

3 Mass Management

(a) For Coriolis metering, the mass flow rate will be measured by an integral mass flow transmitter in kilograms per hour (kg/hr). The mass flow rate will be continuously recorded and integrated for the totalisation register.

(b) The volumetric flow rate cubic meters per hour (m^3/hr) will be continuously derived in the flow computer using the same on-line gas chromatograph used for determining the relative density used in accordance with AGA Report No 11 for Coriolis Metering.

4 Other Measurement

Temperature and pressure will be measured and recorded so that the readings are representative of the conditions prevailing at the upstream face of each orifice plate, at each turbine meter, at each positive displacement meter and at each ultrasonic meter.

5 Pressure

Pressure meters and transmitters are to measure gauge pressure. Calculations using gauge pressures are to incorporate local barometric pressure effects.

6 Calibration Inspection and Testing

6.1 Scheduled Tests

Service Provider will carry out at quarterly intervals (or such longer period as may be agreed by the Parties) validation tests of the metering equipment in accordance with the procedures set out in this clause 6. Service Provider will give at least 14 days' notice of the time and date of such tests and will supply a list of items to be tested to Shipper. If Shipper fails to witness such tests after the required notification is given, the test results will nevertheless be deemed to be acceptable. Upon request, the representative(s) of Shipper at such tests will be supplied with copies of the field data and calculations following such tests, and Shipper will be supplied with a full set of test results.

6.2 Unscheduled Tests

If metering equipment is out of service or needs repair, Shipper will be invited to attend the investigation, repair and retest provided no delays are incurred which could jeopardise the integrity of the metering equipment, or in Service Provider's judgment, would adversely affect Service Provider's ability to meet any of its obligations.

6.3 Test Results

The results of such tests will be deemed to be correct if corroborated by the next scheduled quarterly test. If such test results are not corroborated by the routine quarterly test, those test results will be ignored and the correction procedures set out below will be implemented.

6.4 Correction Procedure

If, at any time, any of the metering equipment is found to be unserviceable or registering inaccurately, it will be adjusted immediately to its specification. The previous reading of such metering equipment will be corrected for any period of inaccuracy which is definitely known or agreed upon, provided that the period for such correction will not extend beyond the date of the last previous validation test. Measurement during the correction period will be determined by Service Provider on the basis of the best data available, using the first of the following methods which, when considered in the following order, is feasible:

(a) recordings by any other measuring equipment acceptable to Service Provider and Shipper; or

(b) trend data recorded by Service Provider or Shipper, where this data can be proven to represent an accurate estimate of the actual measurement; or

(c) by making the appropriate correction if the deviation from the accurate reading is ascertainable by calibration test or mathematical calculation; or

(d) by estimation acceptable to Service Provider and Shipper based upon receipts or deliveries under similar conditions during a period when the metering equipment was registering accurately.

7 Calibration Equipment and Procedures

Calibration equipment will have measurement accuracy at least four times better than the metering equipment which it will be used to calibrate. Calibration equipment will be provided with NATA endorsed certification of its accuracy, traceable to national standards. The appropriate certificates will be available for inspection during business hours at the offices of Service Provider. Calibration procedures and frequencies or changes thereto will be approved by Shipper, which approval must not be unreasonably withheld.

8 Additional Tests

Shipper will have the right at any time, at its discretion, to require Service Provider to carry out tests in addition to the scheduled and unscheduled tests referred to in clauses 6.1 and 6.2. Shipper will reimburse Service Provider for the cost of the additional tests unless it is shown from the results of those tests that the equipment being tested is not operating within the permissible limits of tolerance.

9 Inspection of Equipment and Records

Shipper will be permitted to:

(a) have access to the relevant measuring and testing equipment at all reasonable times for inspection purposes;

(b) be present during testing of the quality and quantity of Gas;

(c) be present when measuring or testing equipment is cleaned, installed, repaired, inspected, calibrated or adjusted.

Service Provider will give reasonable notice to Shipper prior to undertaking these activities, and will make any changes to the activities reasonably required by Shipper for the purposes of this Schedule. To the extent such changes would result in significant and unreasonable additional cost, Service Provider and Shipper will negotiate in good faith to determine how such changes are to be handled.

Schedule 3: Metering Equipment

1 Metering Equipment

Metering Equipment is equipment for measuring the quantity, quality and condition of Gas at Receipt Points and Delivery Points. The equipment must include remotely controlled flow devices, must be capable of making data concerning quality, quantity and condition of Gas available for instantaneous transmission to Service Provider's control centre, must comply with the specifications and other technical requirements published from time to time by Service Provider and include SCADA and communications equipment and protocols compatible with Service Provider's equipment.

2 Certification

(a) Where the Metering Equipment is owned and operated by Service Provider, Service Provider will furnish certification of the accuracy and the initial calibration for the Metering Equipment to Shipper at or before the commencement of deliveries of Gas under this Agreement.

(b) Where the Metering Equipment is owned and operated by Shipper or a third party, Shipper must furnish certification of the accuracy and the initial calibration for the Metering Equipment to Service Provider at or before the commencement of deliveries of Gas under this Agreement.

3 Meter Design

(a) Service Provider will:

(i) determine the nature, design and specifications of;

(ii) determine the configuration of and communication protocols for;

(iii) review all plans for; and

(iv) inspect the installation of,

all Metering Equipment to be installed at a Delivery Point or a Receipt Point.

(b) Subject to the National Gas Rules, no Receipt Point or Delivery Point will be connected to the Facility unless it complies in all respects with Service Provider's specifications.

4 Flow Devices

(a) Orifice metering systems will be constructed and installed in accordance with the provisions of American Gas Association (**AGA**) Report No. 3, such that an uncertainty of ±1.0% of the flow energy rate is achieved.

(b) Turbine metering systems will be constructed and installed in accordance with the provisions of AGA Report No. 7, such that an uncertainty of ±1.0% of the flow energy rate is achieved.

(c) Positive Displacement (PD) metering systems will be constructed and installed in accordance with the provisions of ANSI B109-3 (1986), such that an uncertainty of ±1.0% of the flow energy rate is achieved.

(d) Ultrasonic metering systems will be constructed and installed in accordance with the provisions of AGA Report No. 9 such that an uncertainty of ±0.7% of the flow energy rate is achieved.

(e) Coriolis metering systems will be constructed and installed in accordance with the provisions of AGA Report No. 11 such that an uncertainty of ±0.7% of the flow energy rate is achieved.

(f) Other metering systems will be constructed and installed in accordance with established industry standards as adopted by Service Provider.

5 Differential Pressure for Orifice Metering

Differential pressure will be measured using microprocessor based 'smart' type transmitters, with 4-20 mA analogue output signals temperature compensated to minimise the effect of inaccuracies due to ambient temperature changes. The uncertainty of differential pressure transmitters will be ±0.1% or better of the calibrated range. Calibrated ranges will be selected to minimise the uncertainty of readings. Service Provider will have the right, but not the obligation, to install high and low pressure differential pressure transmitters based on turn down requirements of metering. If fitted, Service Provider will ensure that they will be switched automatically by the flow computer to select the optimum operating range.

6 Pressure

Pressure will be measured using microprocessor based 'smart' type transmitters, with 4-20 mA analogue output signals temperature compensated to minimise the effect of inaccuracies due to ambient temperature changes. Uncertainty of transmitters will be ±0.1% of the calibrated range. Calibrated ranges will be selected to minimise the uncertainty of readings.

7 Temperature

The temperature transmitter uncertainty will be ±0.2ºC of the calibrated range. Calibrated ranges will be selected to minimise the uncertainty of readings.

8 Flow Computer

(a) For each meter station, a self-contained proprietary type flow computer will be installed. Instantaneous values for at least the following inputs and outputs will be recorded and available for display from the flow computer or from SCADA trend data:

Inputs	**Outputs**
Differential pressure, high (orifice meter)	Differential pressure (orifice meter)
Differential pressure, low (orifice meter)	Pressure
	Temperature

Pressure	Density
Temperature	Instantaneous volumetric flow (corrected and uncorrected)
Relative density	Cumulative volumetric flow
Gas quality	Instantaneous energy flow
Carbon dioxide	Cumulative energy flow
Nitrogen	Instantaneous mass flow (turbine, ultrasonic and Coriolis meters)
Dry Gross Heating Value (volumetric and/or mass)	Cumulative mass flow (turbine, ultrasonic and Coriolis meters)
Frequency (turbine, PD and ultrasonic meters)	Control valve position

(b) The flow computer will be manually configured with input data for calculation factors, constants and Standard Conditions as well as fall back values for out of limit input signals and alarm outputs. Configuration data will be available on a local display. The flow computer input and output circuits and central processing unit will not increase the uncertainty of any measurement or calculation by more than ±0.1% of the range of that measurement or calculation.

(c) At least 35 Days of hourly information will be backed up and stored on the flow computer.

(d) Communication connections and protocol must be acceptable to Service Provider and must be compatible with, and connected to, Service Provider's SCADA system.

9 Energy and Relative Density

(a) The energy content of the Gas will be monitored at all Receipt Points and various Delivery Points on the Facility by an on-line gas chromatograph designed to take a continuous sample of Gas from the Facility.

(b) A sample probe will be used to extract the sample from the Facility and the dead volume between the line and the analyser will be minimised. Sample condensation will be avoided. The samples will be analysed in accordance with ASTM D1945 *'Standard Method for Analysis of Natural Gas by Gas Chromatography'*, and the calculations for Gross Heating Value and relative density will be determined in accordance with ISO 6976 *'Natural Gas - Calculation of Calorific Value, Density and Relative Density'* and AGA Report No 8 *'Compressibility and Supercompressibility for Natural Gas and Other Hydrocarbon Gases'*.

(c) The gas chromatograph will provide instantaneous outputs of dry Gross Heating Value in MJ/m^3, relative density, and compositions of carbon dioxide and nitrogen.

(d) The gas chromatograph will be factory tested and calibrated using a certified natural gas gravimetric standard and will perform with an uncertainty of ±0.08 MJ/m3 for Gross Heating Value and ±0.003 for Relative Density. The gas chromatograph will include the

facility for recalibrating itself automatically against a certified calibration gas at least once per Day.

10 Pulsation or Harmonics Damping

Shipper must ensure that pulsation or harmonics in the Gas stream delivered at the Receipt Point or Delivery Point does not interfere with the operation or accuracy of the metering equipment.