GTAC Workshop Block 5

18 September 2018

Agenda

Agenda Items		Indicative Timing
	Workstream 6 – Supporting Arrangements	
6.1	Metering Requirements	10-12pm
	Lunch	
6.2	Balancing and Curtailment	12:30pm-3pm
6.5	Transitional Arrangements and Wash-ups	3-5pm

Metering Requirements

John Blackstock and Len Rodenberg

Session Objectives

- Talk to key points from the draft Metering Requirements Document (MR Document) and supporting information memorandum released early September.
- Provides industry stakeholders with an opportunity to raise any additional issues they would like to see addressed or considered by First Gas in relation to Metering.

Agenda

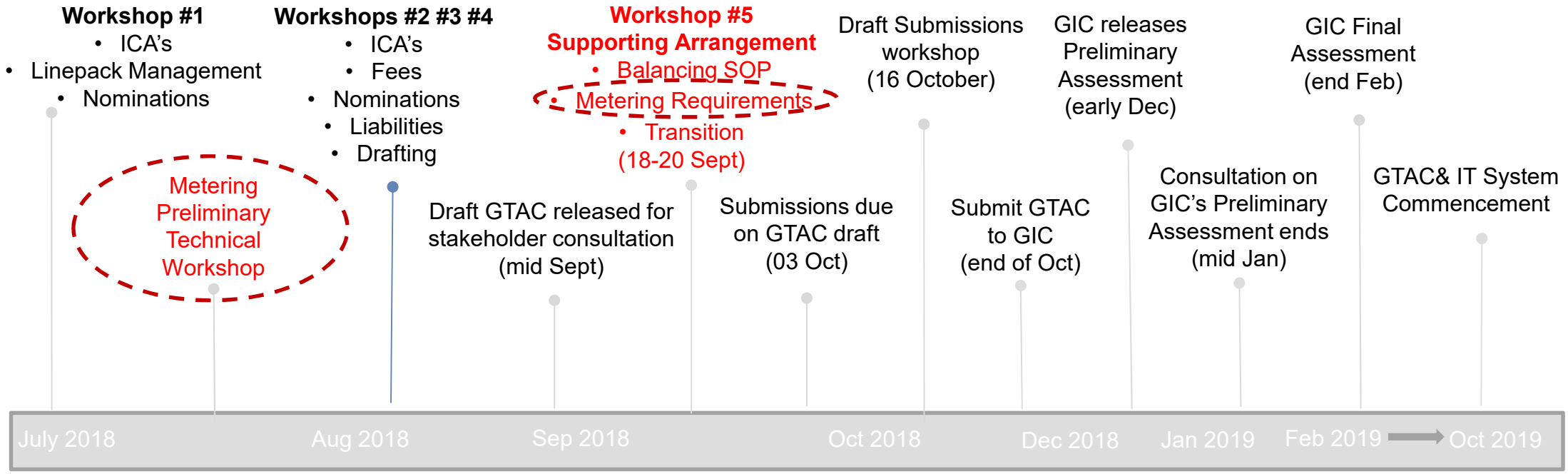
Agenda Items	
1.	Introductions & Background
2.	Existing Code Requirements – MPOC & VTC
3.	First Gas Proposal:

- Scope of Metering Requirements
- Why BS EN 1776:2015?
- Treatment of Existing Metering Systems
- Comparison with existing arrangements
- Interface with ICA's
- Special Testing
- Amendments to Metering Requirements

Background – Preliminary Metering Session (July)

- Preliminary session held in New Plymouth on 25 July with technical representatives from GTAC stakeholders.
- We set out our initial thinking and proposed approach in relation to Metering Requirements.
- Noted that our plan was for the revised Metering requirements to revolve around the adoption of the European Standard BS EN 1776:2015 with required exceptions or qualifications to address NZ circumstances.
- Sought feedback from session participants, some of which was incorporated into the most recently released metering documents.
- First Gas material from the preliminary session published on GIC website

Background – GTAC Process – Where are we at?



- Series of Industry 3-Day Workshops during July and August
- Enable FAP issues to be discussed, resolved and proposed GTAC drafting amendments formulated

- Allow stakeholders to review improvements and obtain legal review
- Allow time for First Gas to finalise the GTAC before submitting to GIC

- Allow stakeholders to comment on GIC's preliminary assessment on whether the GTAC is materially better than the MPOC and VTC
- GIC likely to publish more information on this stage
- IT system to support / implement GTAC to be progresses and finalised.

What does the FAP say about Metering?

- Metering is **not** considered a material issue in the FAP that warrants significant attention in order for the GIC to determine that the GTAC is materially better than the existing transmission access codes
- However, the GIC noted in the FAP that:
  - a single set of metering requirements across the system should improve efficiency and reliability;
  - as the metering requirements were not yet available to industry both metering owners and the GIC were faced with a degree of uncertainty;
  - the minimum 9 month interval between special metering tests is worse than under the existing codes.

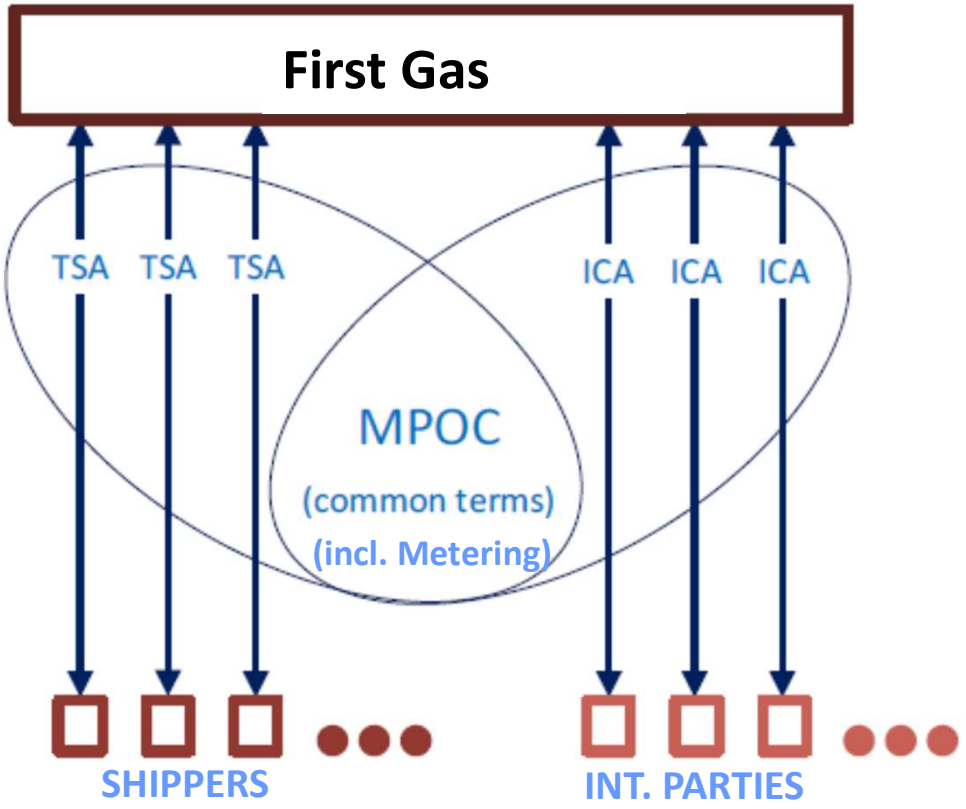
Existing Code Requirements – MPOC & VTC

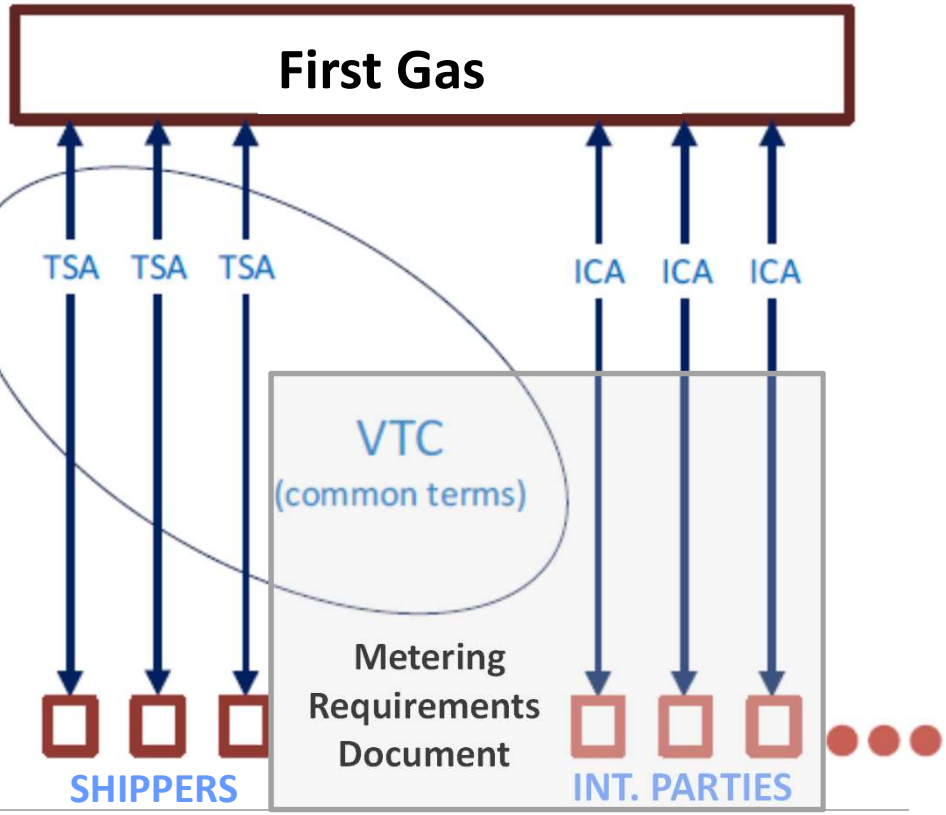
MPOC

- MPOC contains the common terms for Transmission Agreements (TSAs) and Interconnection contracts (ICAs)
- Metering provisions form part of the MPOC

VTC

- The VTC only contains the common terms for TSAs. ICAs are negotiated bi-laterally with interconnected Parties
- The VTC references a Metering Requirements document, outside the VTC. Also referenced in ICAs



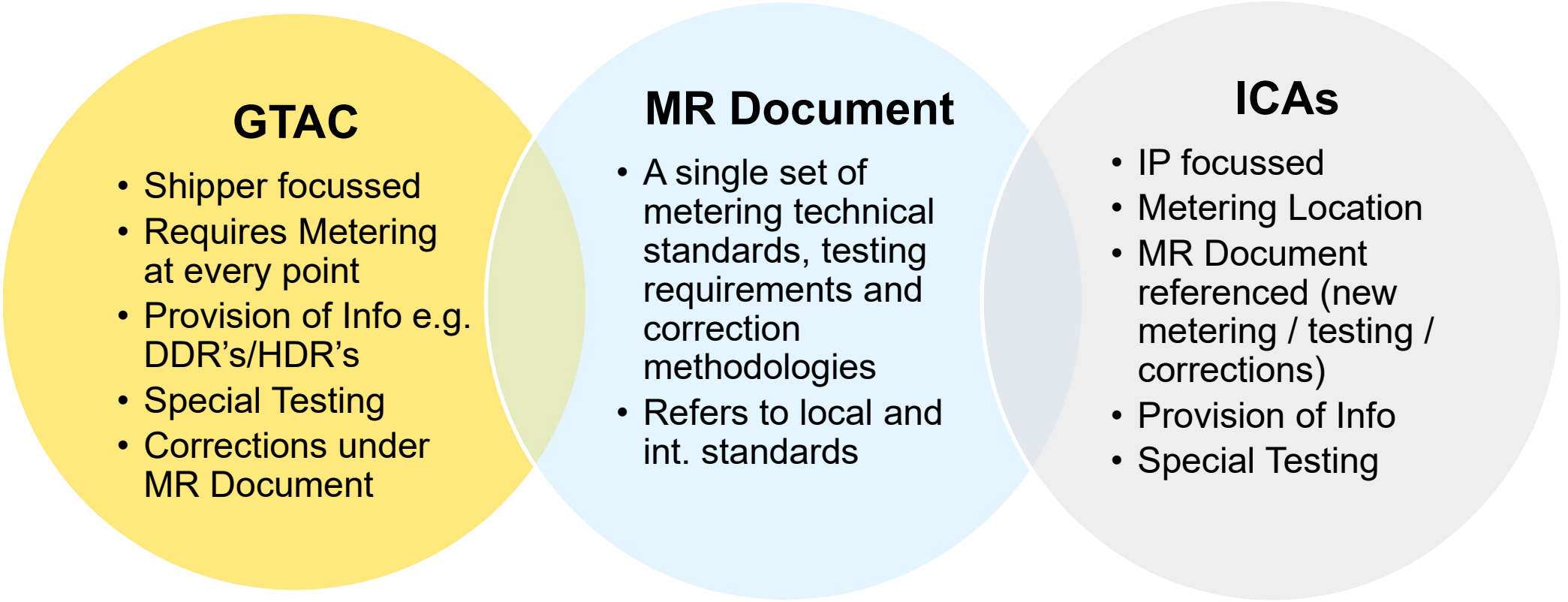


Existing Code Requirements – MPOC & VTC

- The MPOC and the VTC Metering Requirements were put together a considerable number of years ago (2005 and 2007 respectively).
- They reflected best practice at the time, but technology has moved on and aspects are now out of date.
- The MPOC and the VTC Metering Requirements are largely prescriptive. Preference of the time was to “hard-wire” requirements
- MPOC framework especially made it difficult to accommodate atypical design factors or operating requirements.
- Existing code requirements “work” but development of GTAC provides an opportune time to revisit and update.

What is First Gas Proposing for Metering?

- First Gas is proposing a framework that retains a Metering Requirements (MR) Document that is referred to in both the GTAC and ICA's with Receipt and Delivery Point Interconnected Parties (IP).



Scope of Metering Requirements (MR) Document

- The MR Document aims to ensure that the core terms of metering technical standards, testing and corrections are consistent across all interconnected parties.
- Proposal is to adopt European Standard BS EN 1776:2015 with required exceptions or qualifications to address NZ circumstances.
- The MR Document shall apply to all new Receipt and Delivery Points.
- Existing Metering Systems to comply with MR Document by a Sunset Date of 2-years from GTAC commencement (mirrored in GTAC).
- There may be circumstances where negotiated terms may be necessary for particular aspects of a metering system. These will be given effect to through provisions in an ICA.
- Both BS EN 1776 and the treatment of Existing Metering Systems to be discussed further in coming slides.

MR Document & BS EN 1776:2015

- The technical requirements and testing aspects of the MR Document largely involve the adoption of BS EN 1776:2015 “Gas Infrastructure – Gas measuring systems – Functional requirements”.
- BS EN 1776:2015 is a generalized standard, so there are some clauses which allow options and there are some clauses which do not correspond with New Zealand practice.
- Therefore, where required the MR Document will include supplementary references that are intended to direct the user to the appropriate options and New Zealand practice.
- BS EN 1776:2015 does not cover the approach to metering corrections. First Gas proposes to retain the existing methodologies for metering corrections with minor refinements where required.

Why BS EN 1776:2015?

- BS EN 1776:2015 is an outcomes-based standard which will give users flexibility in design and maintenance of their Metering Systems.
- Because BS EN 1776:2015 was revised in 2015, it is up to date with respect to gas metering technology. First Gas envisage that we will adopt any future revisions to this standard, thus keeping up with technology.
- The First Gas Proposal includes alternative methods for energy determination, by referring to NZS 5259:2015 which is a standard tailored to the New Zealand situation.
- BS EN 1776 has been adopted in the UK and EU in order to standardise Metering Systems. Each jurisdiction adds its own requirements for situations not covered in detail, in the same way that First Gas will in the MR Document in the NZ context

Treatment of Existing Metering Systems (1)

- All Metering Owners will need to ensure that by 2 years from the commencement of GTAC (the Sunset Date) their Metering Systems comply with the MR Document (see also section 7.13(g) GTAC)
- Existing Metering System owners to continue to maintain compliance with the technical standards and testing requirements that applied immediately prior to GTAC commencement until the Sunset Date.
- Existing Metering System owners can “opt in” to the MR Document prior to the Sunset Date.
- First Gas intends to operate its ~120 Metering Systems under the new MR Document due to the economic and operational efficiencies we consider the new arrangements will bring.
- The purpose of including the Sunset Date is not to compel asset upgrades to the physical Metering Systems.

Treatment of Existing Metering Systems (2)

- Intention of the Sunset Date is to move Metering Owners towards a consistent governing framework and one that ultimately gives them more flexibility in design and maintenance of their systems.
- For Existing ICAs under the VTC, any amendments to the MR Document (including the Sunset Date) will only apply to the extent permitted by the ICA.
- Those parties will be required to comply with the revised MR Document when they enter into a new ICA with First Gas.
- First Gas happy to work with Metering Owners in relation to the transition to compliance with the MR Document.

Metering Related Provisions in ICAs

- ICAs also include a number of mandatory, metering-related processes, information flows and requirements that apply to every metering system. For example:
  - determination of gas quantities by direct measurement only and not by difference;
  - Metering Owner to use reasonable endeavours, including by means of periodic testing, to ensure that Metering is accurate;
  - the availability of metering test results;
  - access to certain information e.g. volume flow rates, mass and energy flow rates, pressure, temperature, density, specific gravity, gross and nett CV, other gas composition information etc.
  - production and making available of DDRs and HDRs
  - rights and obligations with respect to excessive or low flows through a meter.
  - compliance with the MR Requirements.

Comparison with Existing Arrangements

- The following sections provide a comparison between some of the existing metering arrangements (EA) and what is proposed under the revised MR Document that references BS EN 1776 (New MR).

Scope

- The New MR provides a more comprehensive list of Normative References.
- The New MR covers Coriolis meters.
- The New MR covers ultrasonic meters in much more detail.
- The New MR does not differentiate between “Large” and “Small” stations which simplifies things

Gas Analyser

- Where a C6-type GC is used, the New MR specifies how an appropriate C6+ “split” should be determined. This is a new requirement which ensures consistency.
- 6-monthly comparison between the composition determined by the GC and the composition determined by an accredited laboratory. This is intended to prove that the sampling system is appropriate.

Comparison with Existing Arrangements

Accuracy Requirements

- The New MR determines that all Receipt points shall be Class A with in-service uncertainty ≤ to 1.2%.
- The New MR specified in-service uncertainty applies to the whole metering system whereas EA contains a requirement for individual components e.g. pressure transmitters (2.2 c) being a fixed value regardless of transmitter range does not reflect best practice.
- The New MR states that accuracy testing of gas meters shall comply with NZS5259:2015 in order to promote consistency.

Other Aspects

- The New MR makes it clear that the "system" in NZ is based on gauge pressure. This is a historical anomaly, inconsistent with best practice, which is not documented in the EA.
- The FGC recognises all methods for density conversion documented in NZS5259:2015 3.8.2.4. This provides more flexibility.
- The New MR provides a more detailed specification for filtration which provides certainty.
- The New MR is more specific than the EA about alarm monitoring, although in practice these should be unchanged.

Special Testing of Metering & Access to Test Results

- FAP noted that the minimum 9 month interval between special metering tests proposed in the GTAC is worse than under the existing codes.
- First Gas agrees to change this timeframe in both the GTAC and ICA to align with the 3-month timeframe currently set out in the VTC.
- We also propose to require that metering test records are retained and made available on request to ICA/TSA counterparties who use the metering in question (incl. Gas Transfer Agent and Allocation Agent).
- Metering test records will be retained for a period of 7 years (aligns with GTAC)

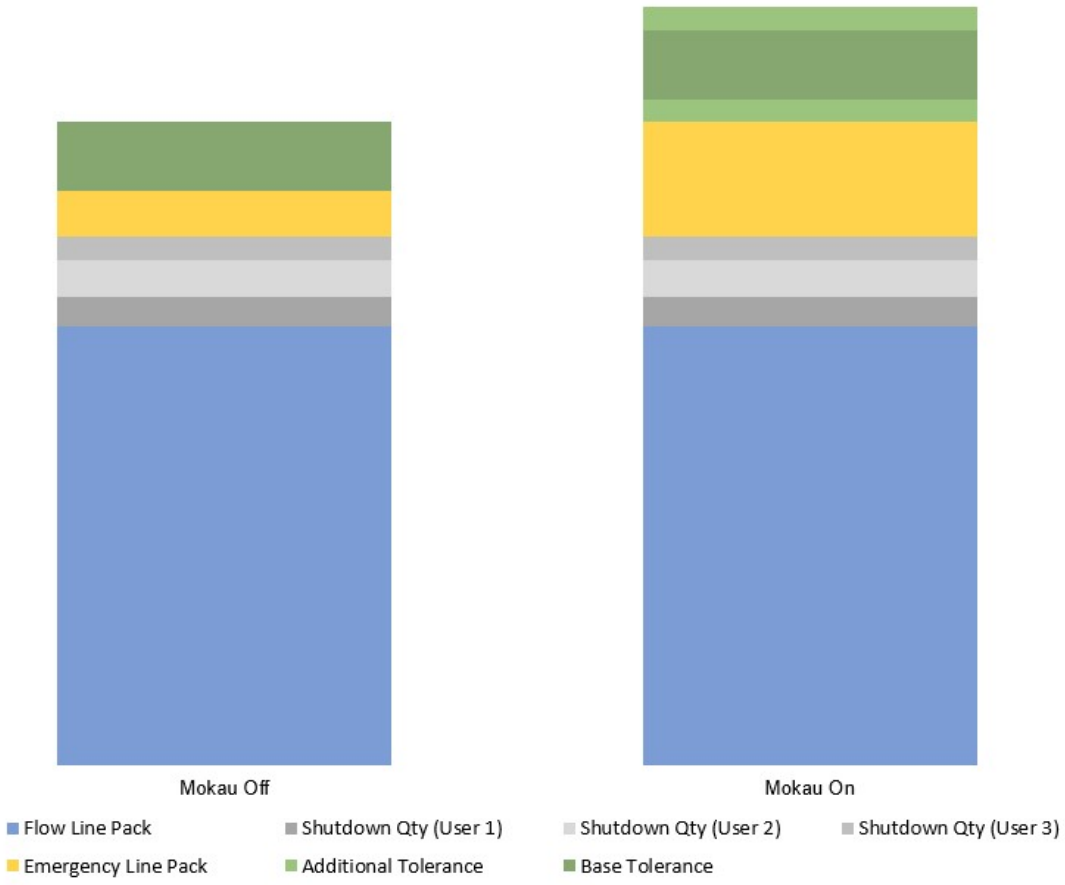
Amendments to the MR Document

- Change process incorporated into the MR Document. The key points from that change process include:
  - First Gas can make changes to the Metering Requirements at any time;
  - When First Gas elects to make a change to the MR Document it will publish the following information on OATIS:
    - a description of the proposed change to the MR Document;
    - the reasons for the proposed change;
    - a marked-up version of the MR Document;
    - the provisional date on which the amended MR Document would take effect.
  - First Gas will consult with industry on all potential changes to the MR Document an will consider stakeholder feedback
  - First Gas is willing to receive suggestions for changes to the MR Document. However, the decision whether to progress such changes will be at the sole discretion of First Gas.

Balancing SOP

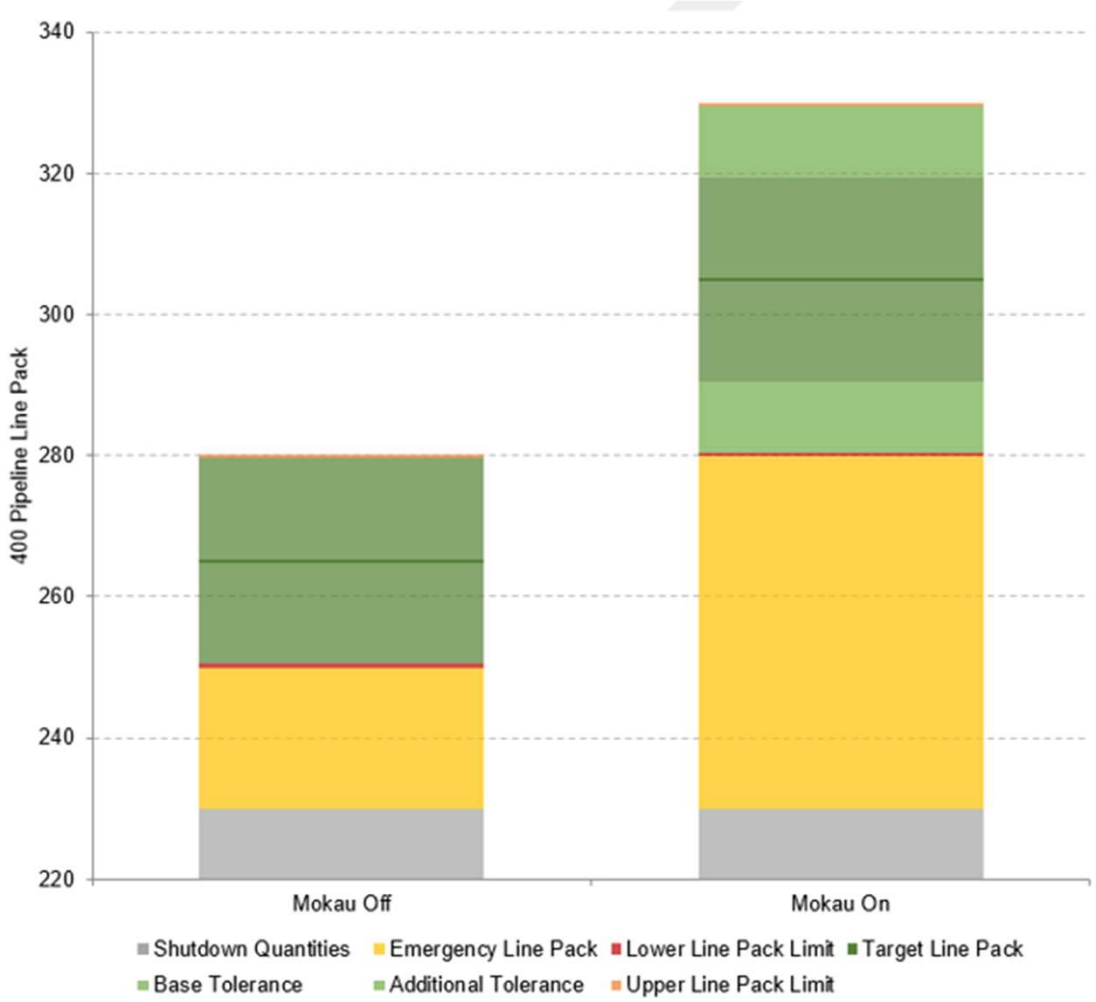
Vaughan Astwood

How we describe line pack



- **Flow line pack** - Gas required to fill the pipeline to minimum pressure, and to create a pressure gradient to flow the nominated quantities
- **Shutdown Quantities** - As per GTAC section 9.6
- **Emergency Line Pack** - gas available for use in a major pipeline emergency, or major producer outage.
- **Base Tolerance** - system wide tolerance available at all times to cover Shipper and OBA Party Running Mismatches.
- **Additional Tolerance** - tolerance above and below the Base Tolerance, which normally becomes available when the Mokau Compressor Station is running.
- **Overall Tolerance** - aggregate of Base Tolerance and Additional Tolerance

Defining the total system tolerance

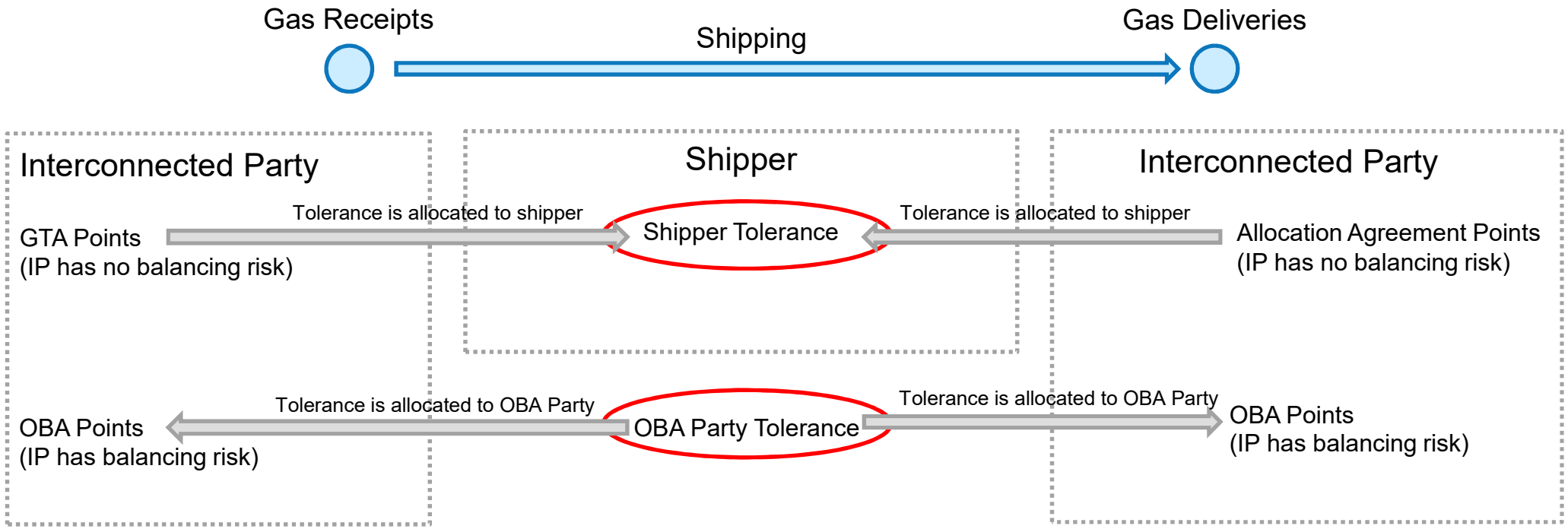


Tolerance/Limit Type	Mokau Off	Mokau On
Overall Tolerance	30 TJ	50 TJ
Lower Line Pack Limit	250 TJ	280 TJ
Upper Line Pack Limit	280 TJ	330 TJ
Target Line Pack	265 TJ	305 TJ

Tolerance as a receipt and delivery allocation

Tolerance/Limit Type	Mokau Off	Mokau On
Overall Tolerance	30 TJ	50 TJ
Positive/Negative Tolerance	15 TJ	25 TJ
Receipt Line Pack Tolerance ($LPT_{RECEIPTS}$)	7.5 TJ	12.5 TJ
Delivery Line Pack Tolerance ($LPT_{DELIVERIES}$)	7.5 TJ	12.5 TJ

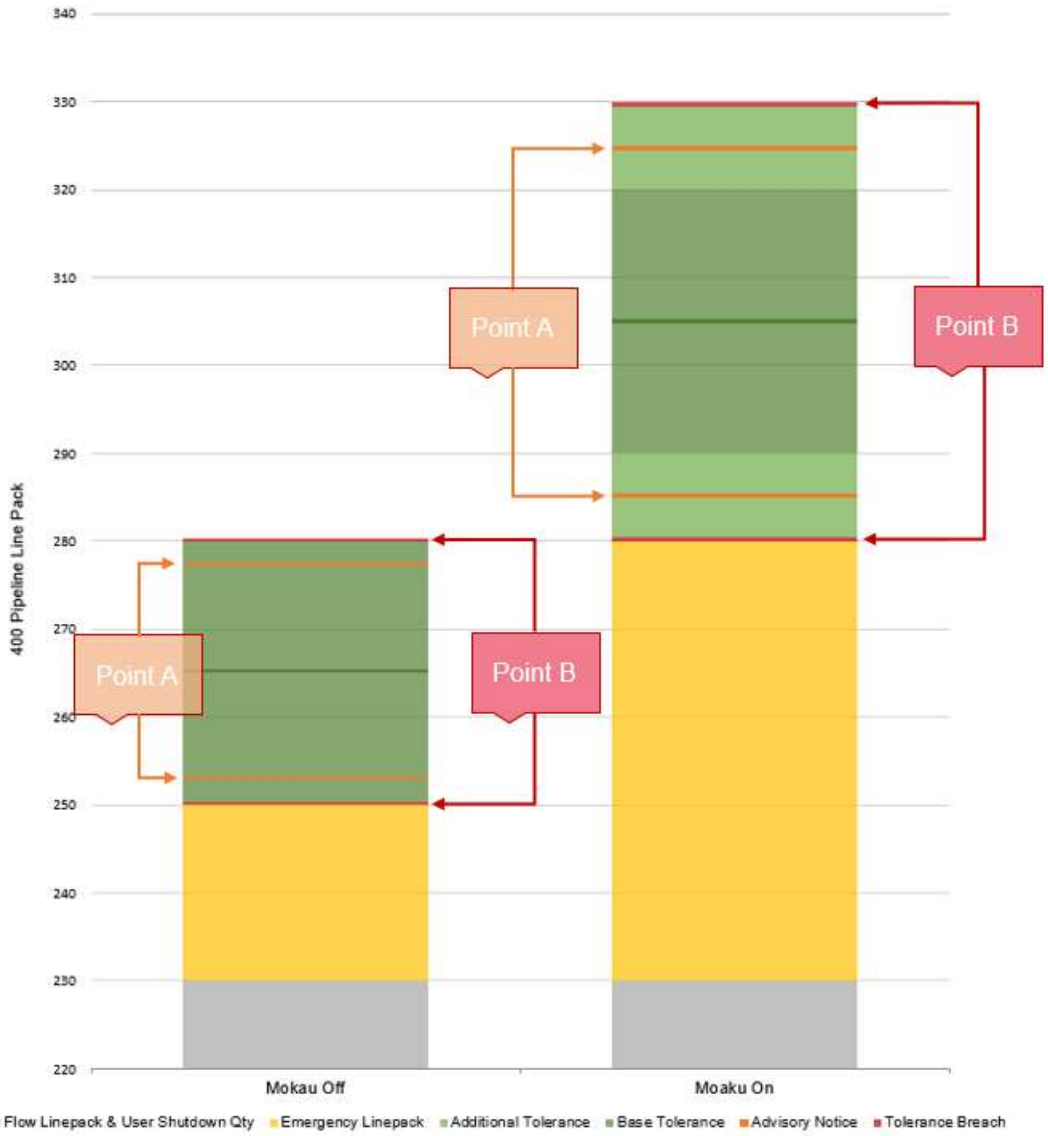
Allocating Tolerance between users



Key Principles:

- Shared and dedicated delivery points have different requirements for tolerance
- Parties taking the balancing risk need tolerance
- This is a change to the GTAC which allocates tolerance between OBA parties and shippers

Balancing Gas decisions and actions



Point A

- *If Line Pack comes within 10% of the Acceptable Line Pack Limit or;*
- *First Gas believes a breach of an Acceptable Line Pack Limit is likely to occur; or*
- *If a TTP limit is likely to be breached.*
- First Gas will publish a High or Low Line Pack (Advisory) Notice.
- Shippers and OBA Parties will review their Running Mismatch positions and work to take corrective action to minimise their Running Mismatch.
- First Gas will review all Parties' Running Mismatches on the pipeline and Approved Hourly Profiles and may decide to buy or sell balancing gas if this is considered necessary.

Point B

- *If Line Pack has breached the Acceptable Line Pack Limit or;*
- *If a TTP limit is breached.*
- First Gas will notify Parties by publishing a High or Low Line Pack (Breach) Notice.
- Shippers and OBA Parties that have breached their Running Mismatch tolerance allowance, in the direction of the breach, must plan to reduce their Running Mismatch back to within their Mismatch Tolerance.
- First Gas will review:
  - Running Mismatches on the pipeline
  - Contact Parties whose mismatch is contributing to the Acceptable Line Pack Limit
  - upcoming Approved Hourly Profiles
- First Gas will buy or sell Balancing Gas as required
- First Gas may also curtail flows

Curtailment SOP

Vaughan Astwood

Key Principles

Critical Contingency

- During a CC First Gas will follow all legal instructions issued by the CCO, which may vary from this SOP
- Whether a CC event is determined to be “regional” or not by the CCO will impact the operational response taken by First Gas

End-user Shut down quantities

- Shippers need to notify First Gas of the required shut down quantities for end-users
- First Gas will accommodate these notified shut down quantities when curtailing flows where practicable

Actions Outside the SOP

- First Gas may need to act outside of the specific details of the SOP due to an unusual combination of circumstances on the Transmission System
- First Gas will always act within the general intent of this SOP.

Two types of curtailments

- Capacity Check Initiated Curtailments
- Operations Initiated Curtailments and OFOs

Capacity Check Initiated Curtailments

- Each nomination cycle First Gas will run a capacity check in relation to delivery zone/delivery point NQs
- This will be done after any OBA/Interconnected Party confirmation of nominations has occurred
- Capacity check ensures:
  - Nominations don't exceed the operational capacity
  - Acceptable Line Pack Limits and TTP are not breached
  - Any AHPs can be accommodated
- If the capacity check fails the system will curtail all delivery points / zones downstream of the point where the capacity check failed. as follows:
  - Interruptible Capacity (if any); then
  - Supplementary Capacity (If allowed for under the agreement); then
  - Daily Nominated Capacity without Priority Rights (if Priority Rights have been issued at the time); then
  - Daily Nominated Capacity on a pro-rata basis
- Curtailment will be iterative until such point as a 'pass' result is achieved

Operations Initiated Curtailments

- As per section 9 of the GTAC
- Executed by issuing an OFO
- First Gas will identify who is causing the problem by reviewing current ERM to find who is exceeding their ERM Tolerance, by how much and where they are affecting on the system

- Six general pipeline conditions:
  - Issue at an individual receipt point
  - Issue at an individual delivery point
  - Regional high pressure in the receipt zone due to over-injection by producers
  - Shortage of gas in a delivery location or low line pack due to overtaking by users
  - Regional high pressure in the receipt zone due to undertaking by users
  - Shortage of gas in a delivery location or low line pack due to under-injection by producers

Issue at an individual receipt point

What's happening?

- Non-specification gas being injected
- Equipment failure
- Other emergency or a safety issue

What needs to happen?

- Cease or reduce flow to ensure safety

How does First Gas do this under GTAC?

1. Determine the injection quantity reduction required.
2. Issue an OFO to the Interconnected Party of the need to reduce their injection of gas in accordance with the curtailment.
3. Reduce Shipper(s) nominated quantities at the receipt point in OATIS as required.
4. Issue an OFO to Shippers using that receipt point to request that they adjust their mismatch position to account for the reduction in receipts.

Issue at an individual delivery point

What's happening?

- Non-specification gas is likely to be delivered
- Equipment failure
- Other emergency or a safety issue

What needs to happen?

- Cease or reduce flow to ensure safety

How does First Gas do this under GTAC?

1. Determine the offtake quantity reduction required.
2. Issue an OFO to the Interconnected Party and/or Shippers of the need to reduce their flow in accordance with the OFO and adjust their receipt nominations to balance their mismatch as required.
3. Adjust delivery nominations at the delivery point accordingly.

Regional high pressure in the receipt zone due to over-injection by producers

Firstgas

What's happening?

- Upper Line Pack Limit or TTP breached (or potentially breached)

What needs to happen?

- Reduce flows into the receipt zone

How does First Gas do this under GTAC?

If First Gas can find who is causing the issue:

OBA Party exceeding +ve RM Tolerance

1. First Gas Issues OFO instructing them to reduce their ERM over the timeframe specified to bring them back within their RM Tolerance
2. OBA Party takes appropriate action(s) to reduce their ERM to within their allowed RM Tolerance within the timeframe specified

Non OBA IP Over-injecting

1. First Gas determines the curtailment quantity on a pro-rata basis for all Shippers using the RP
2. First Gas Issues an OFO to Shippers at that receipt point requesting them to adjust their nominations to address the over-injection and ensure their RM is within Tolerance.
3. Shipper(s) receiving the OFO respond in the next ID cycle to direct the curtailment to the right RP

If First Gas cannot find who is causing the issue:

Curtail all IPs on a pro-rata basis

1. First Gas determines the quantity of gas which needs to be reduced and the timeframe
2. First Gas issues OFOs to all IP to reduce their receipt quantities in accordance with the OFO
3. IPs notify all Shippers receiving gas from affected RPs who adjust their nominations in OATIS as required.

Shortage of gas in a delivery location or low line pack due to overtaking by users

What's happening?

- Lower Line Pack Limit or TTP breached (or potentially breached)

What needs to happen?

- Reduce deliveries of gas

How does First Gas do this under GTAC?

If First Gas can find who is causing the issue:

OBA Party exceeding -ve RM Tolerance

1. First Gas Issues OFO instructing them to reduce their ERM over the timeframe specified to bring them back within their RM Tolerance
2. OBA Party takes appropriate action(s) to reduce their ERM to within their allowed RM Tolerance within the timeframe specified

Non OBA IP Overtaking

1. First Gas determines the curtailment quantity on a pro-rata basis for all Shippers using the DP or DZ
2. First Gas Issues an OFO to Shippers at that receipt point requesting them to adjust their nominations to reduce flow and bring their RM is within Tolerance.
3. Shipper(s) receiving the OFO respond in the next ID cycle to address their RM

If First Gas cannot find who is causing the issue:

Curtail all OBA Parties and Shippers delivering downstream of the DZ on a pro-rata basis

1. First Gas determines quantity of gas which needs to be reduced and the timeframe
2. First Gas Issues an OFO to affected OBA Parties and Shippers to reduce their offtake in accordance with the OFO:
   a. OBA Parties reduce their offtake quantities and notify Shippers to adjust their receipt and delivery nominations in OATIS as required
   b. Shippers receiving the OFO adjust their receipt and delivery nominations to correct their RM positions.

Regional high pressure in the receipt zone due to undertaking by users

What's happening?

- Upper Line Pack Limit or TTP breached (or potentially breached)

What needs to happen?

- Increase offtake and/or Reduce injections of gas

How does First Gas do this under GTAC?

If First Gas can find who is causing the issue:

OBA Party exceeding +ve RM Tolerance

1. First Gas Issues OFO instructing them to reduce their ERM over the timeframe specified to bring them back within their RM Tolerance
2. OBA Party takes appropriate action(s) to reduce their ERM to within their RM Tolerance within the timeframe specified by:
   a. Increasing of offtake and/or;
   b. Requesting Shippers delivering gas to reduce their receipt quantity nominations within the timeframe specified

Non OBA IP exceeding +ve RM Tolerance

1. First Gas issues OFO to Shipper to reduce ERM over a specified timeframe to within their RM Tolerance
2. Shipper takes appropriate action(s) to reduce their ERM to within RM Tolerance within the timeframe specified generally be by reducing their nominated receipt quantities

If First Gas cannot find who is causing the issue:

Curtail all IPs in the Receipt Zone on a pro-rata basis

1. First Gas determines quantity of gas which needs to be reduced and the timeframe
2. First Gas Issues an OFO to IPs to reduce their injection quantities in accordance with the OFO
3. IPs notify all Shippers receiving gas from the affected receipt points who adjust their receipt and delivery nominations in OATIS as required.

Shortage of gas in a delivery location or low line pack due to under-injection by producers

What's happening?

- Lower Line Pack Limit or TTP breached (or potentially breached)

What needs to happen?

- Increase Injections and/or Reduce deliveries of gas

How does First Gas do this under GTAC?

If First Gas can find who is causing the issue:

OBA Party exceeding -ve RM Tolerance

1. First Gas Issues OFO instructing them to reduce their ERM over the timeframe specified to within their RM Tolerance
2. OBA Party takes appropriate action(s) to reduce their ERM to within their RM Tolerance within the timeframe specified by:
    a. Increasing injection and/or;
    b. Requesting Shippers receiving gas to reduce their receipt quantity nominations within the timeframe specified (Notes on next slide)
    c. Request an Extra ID cycle

Non OBA IP Under-injecting

1. First Gas issues OFO to Shipper to reduce ERM over a specified timeframe to within their RM Tolerance
2. Shipper takes appropriate action(s) to reduce their ERM to within RM Tolerance within the timeframe specified generally by adjusting their nominated receipt quantities

If First Gas cannot find who is causing the issue:

Curtail all Shippers in the Delivery Zones / Points on a pro-rata basis

1. First Gas determines quantity of gas which needs to be increased and the timeframe
2. First Gas Issues an OFO to Shippers to reduce their delivery quantities in accordance with the OFO
3. Shippers reduce their receipt and delivery nominations to effect the reduction in offtake

Shortage of gas in a delivery location or low line pack due to under-injection by producers cont'd

If a Shipper is requested to reduce their receipt quantity nominations by an OBA Party they are receiving gas from, as per step 2b on the previous slide, the Shipper will:

1. Reduce their receipt quantity nominations within the timeframe specified in the OFO issued to the OBA Party.
2. Amend their delivery quantities accordingly, to effect an actual gas offtake reduction proportionate with their receipt quantity nomination reduction.

Transitional Arrangements and Wash-ups

Key Elements under Transitional Arrangements and Wash-ups

- A replacement to schedule 3 of the MBB D+1 Pilot Agreement is required
- Whether parties' positions are carried over from the MPOC/VTC to the GTAC or whether a reset occurs on 30 September
- There needs to be clarity regarding the treatment of cash-outs under the MPOC when transition to the GTAC occurs
- Transition will need to be addressed as a separate schedule to the GTAC

First Gas released a Wash-up Discussion Paper on 31 July 2018 for consultation following on from workshops held on 10-12 July 2018

Wash-up Schedule – how the MBB maps to GTAC

MBB Agreement Provision		Equivalent GTAC Provision
Schedule 1 (Daily Calculations)		
1.1	Daily Calculation of RM	Schedule 2 (see reference to 8.15)
1.2	How RM is calculated	Running Mismatch definition
1.3	Default rule	6.11(b)
1.4	Timeliness of data	Schedule 2 (see reference to 8.15)
1.5	Use of calculations	N/A
2.1(a)	Negative cash-out quantity	Section 8.8 (Allocation of Balancing Gas purchased)
2.1(b)	Positive cash-out quantity	Section 8.9 (Allocation of Balancing Gas Sold)
2.1(c)	Vector Running Imbalance	Incorporated in Running Mismatch definition
2.1(d)	Closing Position	Incorporated in Running Mismatch definition
Schedule 2		
1.1(a)	Amount payable to the BPP account by Shippers	Section 11.21(a) (Non-Transmission Services Invoice; but calculation of actual figure is in sections 8.8 and 8.9)
1.1(b)	Amount payable from the BPP account by Shippers	Section 11.21(a) (Non-Transmission Services Invoice; but calculation of actual figure is in sections 8.8 and 8.9)

What's required in the Wash-up Schedule?

- To apply in respect of wash-ups in from 1 October 2019
- The D+1 Pilot referred to in the MBB Agreement will end as at 30 September 2019 and will be replaced by the new Wash-up Schedule
- Shippers and OBA Parties will use their reasonable endeavours to comply with the for the D+1 Business Rules published on the GIC's website *(s. 3.1(c) of the MBB Agreement)*
- First Gas will not be obliged to do, or not do, anything that may (in First Gas' opinion) cause First Gas to be non-compliant with any applicable law or operate otherwise than as a Reasonable and Prudent Operator *(s. 3.2(a) of the MBB Agreement)*
- Shippers and OBA Parties acknowledge that First Gas will determine "initial" Daily Delivery Quantities in accordance with *section 6.11* of the GTAC
- No warranty or representation by First Gas that data used or calculated by First Gas in performing its obligations under the New Wash-up Schedule is reliable, accurate or complete. First Gas is not liable for any loss resulting from reliance on any D+1 Data *(as per s. 3.4 of the MBB Agreement)*
- Shippers and OBA Parties may request an independent audit of the processes under the New Wash-up Schedule *(see s. 3.5 of the MBB Agreement)*
- First Gas is not liable to any Shipper or OBA Party for any losses suffered by any Shipper or OBA Party in connection with the new Wash-up Schedule, except to the extent of any wilful default by First Gas *(see s. 4.1 of the MBB Agreement)*
- Shippers and OBA Parties will indemnify First Gas for any liability from any claims made by any customer of the Shipper or any third party in connection with the D+1 Data or the New Wash-up Schedule, with a specified process to be followed *(see ss. 4.2, 4.3 and 4.5 of the MBB Agreement)*

What's calculated in the Wash-up Schedule?

Attachment 1: Balancing Wash-up Calculations

1. Running Mismatch Wash-up Calculations

- Before the 16th Business Day of the each month (or as required) First Gas will calculate:
  - Shipper RM Wash-up
  - First Gas RM Wash-up
  - Delivery Point and Receipt Point OBA Party RM Wash-up

2. Balancing Gas Allocation Wash-up

- Following the calculation of RM Wash-ups, First Gas will re-calculate the allocation of balancing gas volumes and costs to Shippers, OBA Parties and First Gas

3. Calculation and Application of Wash-up Quantities

- First Gas will calculate the difference between the RM calculated as per Wash-up schedule and the previously calculated RM
- Difference will be returned to Shippers, OBA Parties and First Gas by adjusting Running Mismatch each day of the next month

4. Final Revised Running Mismatch

- Recalculation of values following the final allocation

5. Calculation of ERM Wash-up Quantities

- First Gas will recalculate the positive and negative ERM quantities and the resulting charges
- Any resulting differences from what was previously charged will be debited and/or credited
- Provides for calculation of:
  - Determination of Running Mismatch Tolerance Wash up
  - Calculation of Positive and Negative ERM Quantity Wash up

Attachment 2: Calculation of Balancing Wash-up Amounts

1. Calculation of Balancing Gas Allocation Washup Amount

- For each Day that Balancing Gas allocation quantities have been determined, First Gas will determine the resulting debit and credit amounts for each Shipper and OBA Party.
- Provides for:
  - Calculation of the Balancing Gas Allocation Wash-up Amount
  - Invoicing of the Balancing Gas Allocation Wash-up Amount

2. Calculation of ERM Wash-up Amount

- For each Day that ERM quantities have been determined, First Gas will determine the resulting ERM debit and credit amounts for each Shipper and OBA Party.
- Provides for:
  - Calculation of ERM Wash-up Amount
  - Invoicing of ERM Wash-up Amount

We believe the Wash-up schedule proposed covers all the aspects of wash-ups contained in the MBB D+1 Pilot agreement

Transitional arrangements – continuation of MBB D+1 Pilot post commencement for volumes pre-30 September 2019

- The MBB Agreement will terminate at 2400 hours on 30 September 2019
- All provisions of the MBB Agreement will continue to apply in respect of wash-ups for volumes in relation to any period prior to 2400 hours on 30 September 2019 for so long as is necessary to give effect to the parties' respective rights and obligations under each of the MBB Agreement, the VTC and the MPOC in respect of wash-ups
- First Gas will continue wash-up calculations for volumes prior to 30 September 2019 in relation to "interim allocations", "final allocations" and "special allocations" issued during the 26 months following commencement of the Code in accordance with Schedule 3 of the MBB Agreement
- Invoicing and payment under *section 11* of the GTAC will apply to give effect to any adjustments as a consequence of the wash-up calculations under the Transitional Schedule rather than the relevant invoicing and payment provisions of the VTC and the MPOC
- As contemplated by clause 5.4(b)(ii) of the MBB Agreement, First Gas and each Shipper's Residual Imbalance (as defined in the MBB Agreement) calculated during September 2019 will be spread evenly over October 2019

Transitional Arrangements - Treatment of cash-outs on the last day of the existing codes

- Imbalance positions under the MPOC above the Running Operational Imbalance Limit as at 2400 hours on 30 September 2019 will be cashed out in accordance with sections 12.10 and 12.11 of the MPOC at the Average Market Price as at 30 September 2019 (prices calculated as per s. 12.12)
- Balancing Gas will be bought and sold in accordance with sections 8.18 and 8.19 of the VTC

Transitional Arrangements – transfer of imbalance

- Transfer of imbalances identified as preferable to a cash-out of imbalance
- Imbalance to transfer will be minimised due to:
  - Transitional arrangements require that parties make reasonable endeavours to reduce imbalance to zero at 2400 30 September 2019
  - Cash-outs will be applied as per MPOC and flow through to VTC as per BPP provisions

- Residual balances require different treatment:
  - MPOC imbalance is allocated to Welded Points
  - All MPOC Welded Point Parties have OBAs
  - Under the GTAC existing MPOC parties may not choose an OBA
  - First Gas holds the imbalance at the TSP Welded Points
  - Shippers hold running mismatch on the VTC which is affected by cash-outs at the TSP Welded Points

Transfer of Imbalance – Proposed provisions

Transfer of imbalance occurs after cash-outs:

- MPOC Welded Parties are Cashed-out
- First Gas will be cashed-out at the TSP Welded Points
- Cash-outs will be allocated to VTC Shippers according to the MBB D+1 Agreement and their Running Mismatch will be reduced

Transfer of remaining imbalance

- MPOC Welded Parties:
  - If the Welded Party continue as OBA parties under the GTAC, the remaining ROI can be transferred as RM
  - If the Welded Party discontinues their OBA, the remaining ROI will be cashed out to zero as it cannot exist at the interconnected point under the GTAC
  - For First Gas, the remaining ROI at Mokau will transferred to First Gas' starting RM Position under the GTAC
- VTC Shippers and First Gas:
  - Remaining Running Mismatch for each Shipper after cash-out allocation will be transferred to become the Shipper's initial Running Mismatch position under GTAC
  - The Vector Running Imbalance after cash-out allocation will be added to the First Gas imbalance from the Maui system to become First Gas' starting Running Mismatch under the GTAC

Next Steps

- Confirm workability of transitional provisions and wash-up schedules with stakeholders
- Insert provisions into GTAC prior to submission to GIC