

DAWG MEETING #12

DATE:

14 June, 2017



Agenda

Item	Speaker	Topic
1.	First Gas	Recap of emerging views on balancing & allocation Allocation capabilities of OATIS-replacement
2.	Gas Industry Co	Survey results What will daily allocations be used for? Allocation options & issues
3.	Gas Industry Co	Timing of Initial / Interim / Final allocations
4.	Gas Industry Co	Telemetry threshold for TOU
5.	Gas Industry Co	Improvements to reliability of allocation at Maui gates

Introduction

Gas Industry Co

How we got here

Problems back in 2015:

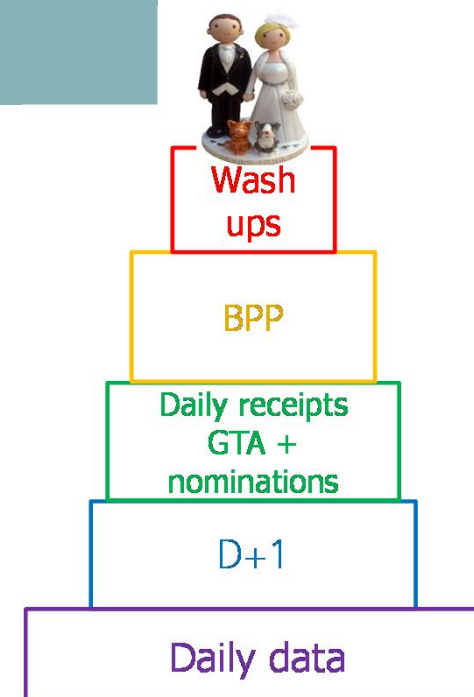
Timeliness and accuracy of initial allocation

Initial used for BPP with no wash up (except r37)

Retailers had few tools to manage upstream position

.....and market-based balancing on the horizon....

- March 2015 D+1 workshop
- DAWG established June 2015
- Meetings June to November 2015 considered the wedding cake →
- MBB go live 1 October
- D+1 results used for daily BPP and end of month billing from 1 December 2015



Landscape is set to change

- Single transmission system, new owner, new code
- Changes to access products, pricing, balancing and allocation
- Based on emerging views, the current D+1 system may no longer be fit-for-purpose
- Pilot has been incredibly useful but cannot continue forever
- Road was clear in 2015, but we're now at a crossroads
- Gas Industry Co has no set preference for outcomes

New Code & Allocations

First Gas

Daily allocations survey

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Survey questions

- What do you use the current D+1 allocation results for?
- What would you use D+1 for under the proposed GTAC?
- Do you believe a production D+1 allocation system is necessary under the proposed GTAC?
- Would you be willing to pay for a fair share of D+1 development and ongoing costs?
- What is your preference between a production D+1 allocation system and an inbuilt allocation algorithm?
- What is your preference for when results are provided on the day after gas flow, recognising that there is some tradeoff between timeliness and accuracy?

1. What do you use the current D+1 allocation results for?

- We use the balancing gas calculations as the basis for both (a) and (b) but this is in turn driven by our daily allocation under D+1
- (d) – to balance our position before BPP is available
- (a) and (b) – inform wholesale purchase and nominations to TPWPs
- We inform wholesale purchases and TPWP nominations at 3pm using D+1 and the previous day's BPP.

2. What would you use D+1 for under the proposed GTAC?

- (a) and (b) – we rely on accurate D+1 allocation to calculate our balancing position. Under the GTAC we may however use D+1 to help with DNC nominations whilst continuing to use the balancing gas calculations to help with wholesale purchases
- (b) – use as a guide as it isn't very accurate
- (a) and (b)
- It depends how the D+1 agreement is “amended, replace or incorporated” into the DRR. If it still determines our opening Running Mismatch it would still inform wholesale purchases and nominations. As DNC would be washed up on Interim and Final Allocations we would purchase DNC based on our estimation engine alone, without D+1 input.

3. Do you believe a production D+1 allocation system is necessary under the proposed GTAC?

- We require some form of daily allocation process which needs to be at least as accurate as D+1
- Probably not
- Yes, daily D+1 allocation is very necessary
- Some way of producing a daily position for shippers is necessary.

4. Would you be willing to pay for a fair share of D+1 development and ongoing costs?

- Yes
- It depends on our assessment of the GTAC proposed allocation
- Yes
- The benefit we derive will be related to the relative magnitude of new charges. The benefit is not related to the accuracy of the D+1 and would not support spending significantly more than we did for the pilot program

5. What is your preference between D+1 and an inbuilt allocation algorithm?

- Without knowing how accurate the First Gas arrangement would be it is difficult to answer this question other than [...] the First Gas arrangement needs to be at least as accurate as D+1
- (d) Other - not sure yet
- (b) Moderate preference for D+1 due to GIC's independence
- Indifferent, assuming the First Gas allocation algorithm should be able to forecast residential consumption with reasonable accuracy.

6. What is your preference for when results are provided on the day after gas flow?

- (c) Prefer earlier D+1 allocation results (requiring earlier validation of gas gate metering) - Please note this must include the earlier publication of gas composition data
- (e) Other - this depends on the fees
- Happy with current timing and accuracy. We would expect some of the benefits of a new First Gas IT system would flow through to improved D+1 time frames
- An earlier BPP would mean we weren't estimating the previous day's cash-out share at 3pm. The accuracy provided there would go a long way to compensating for the reduced accuracy of a faster allocation.

Other comments (I)

- There is potential for the accuracy of D+1 to be improved given that not all AG1 sites are currently reported under D+1 and if the AG2 sites using more than 20TJ could be required to be AG1 sites then there would be an increase in the accuracy of D+1.
- Improvement on nominations over the last 18 months has most probably been as a result of the D+1. That raises two questions:
 - Firstly any assessment of the accuracy of the First Gas arrangement should be against a period prior to D+1. This should provide an apples for apples comparison. We do not think it is fair to make the comparison against a D+1 period as the nominations during that period have improved because of D+1. Any move to the First Gas arrangement would in our opinion see shippers revert to their pre D+1 nominations calculations
 - Secondly these results and the D+1 results should be compared for accuracy against the interim allocation results.

Other comments (II)

- Potential improvements in timing are marginal [but] the potential worsening in accuracy is material. That's why I think accuracy should be focused on – will be disappointing if the DAWG doesn't definitively form a view on accuracy

Daily allocation options & issues

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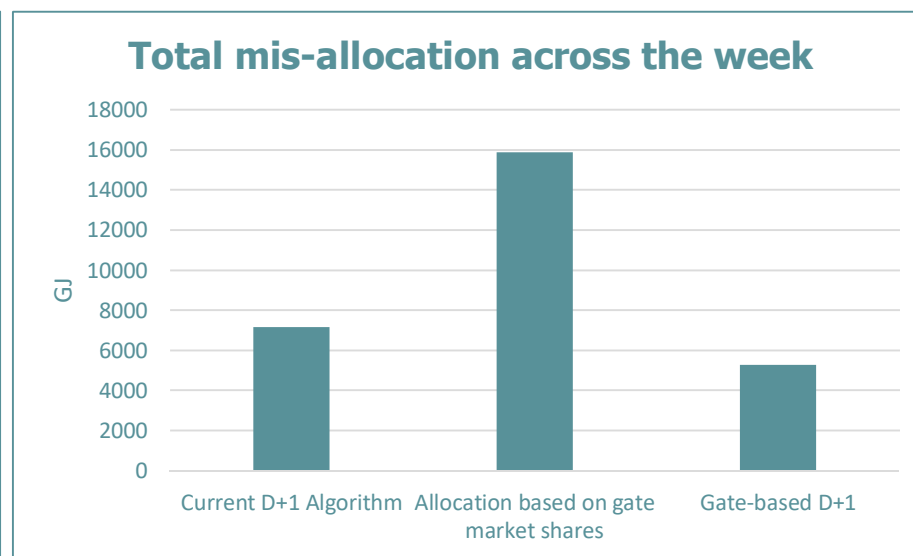
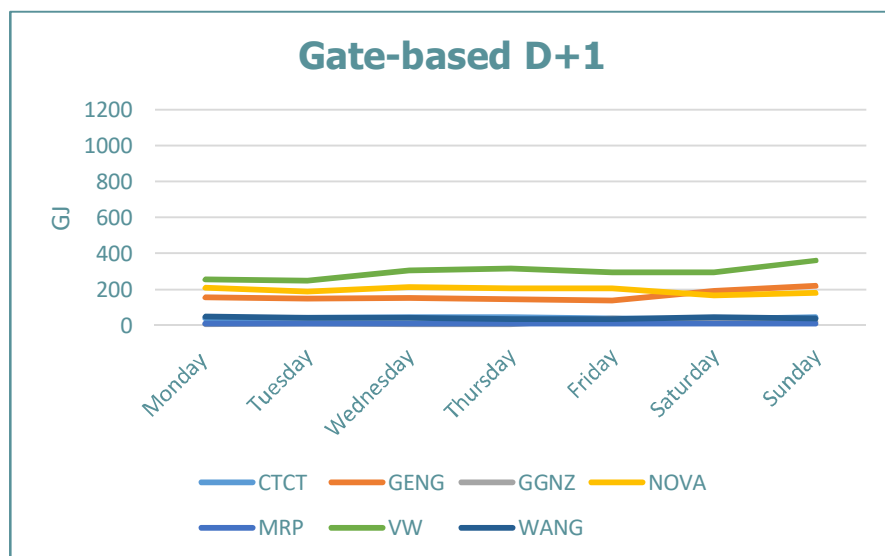
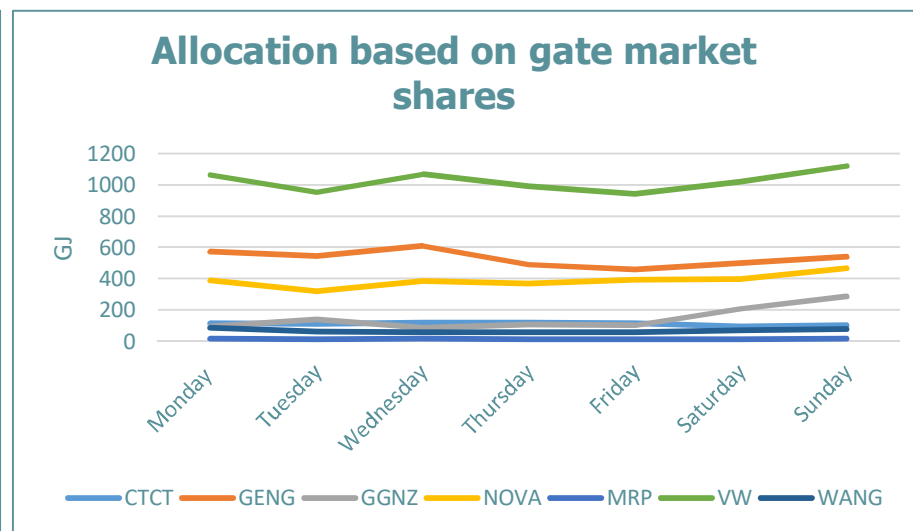
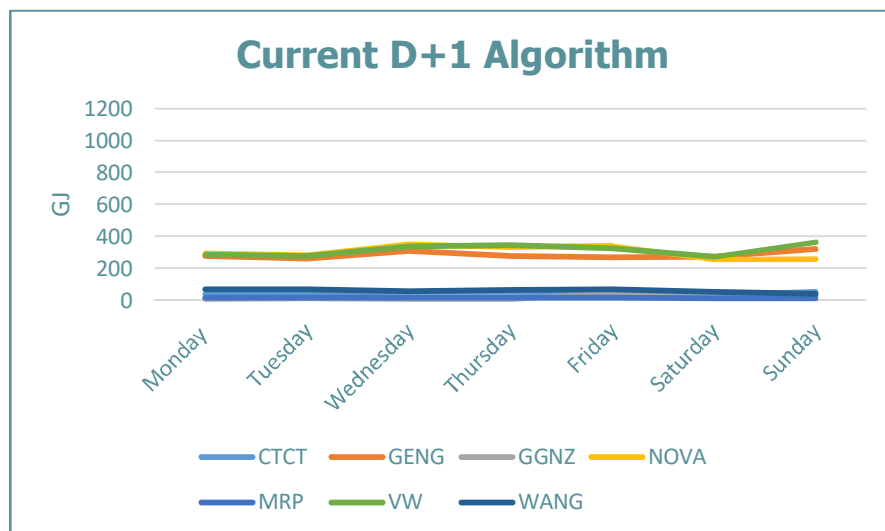
Daily allocation options

<p>Current D+1 algorithm</p> <ul style="list-style-type: none"> • TOU telemetry collected. TOU estimates calculated at gate level, along with residual (= mass market (MM)) volumes • Aggregated to four pools. Pool-level residuals allocated to shippers using regression equations • Pool volumes allocated to shippers/gates, with MM volume allocation based on previous month market shares 	<p>Gate-based D+1</p> <ul style="list-style-type: none"> • TOU telemetry collected. TOU estimates calculated at gate level, along with residual (= mass market (MM)) volumes • MM volumes at each gate allocated to shippers based on previous month market shares • Gate volumes aggregated to provide system-wide allocation for balancing
<p>First Gas allocation proposal</p> <ul style="list-style-type: none"> • Gas gate allocations for each shipper driven off GNC nominations. For a given gate, allocation = gate injection x (shipper nomination / all shipper nominations) • Gate allocations summed for balancing pool allocation 	<p>Allocation based on gate market shares</p> <ul style="list-style-type: none"> • Gas gate allocations for each shipper driven off previous month market shares. For a given gate, allocation = gate injection x market share • Gate allocations summed to for balancing pool allocation

Daily allocation options

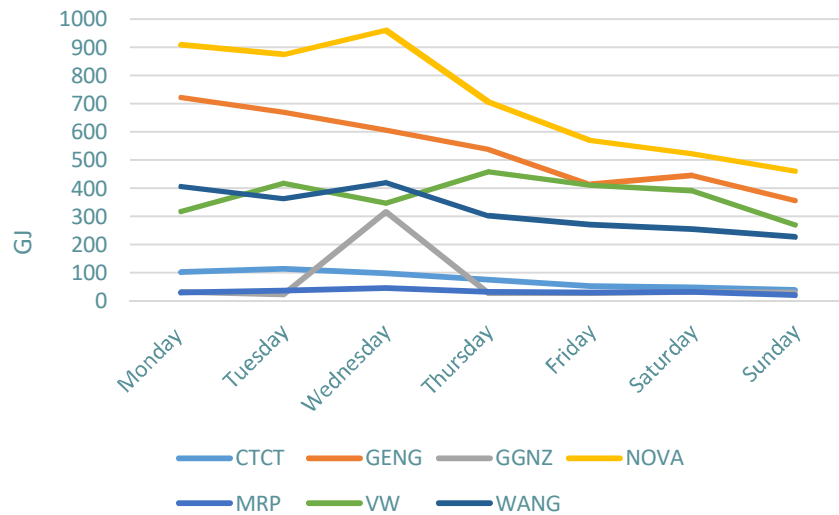
	Option	Accuracy	Cost	'Timeliness'
'Complex' approaches	Current D+1 algorithm – production version	<ul style="list-style-type: none"> • See accompanying slide • Similar to initial allocation 	<ul style="list-style-type: none"> • Dev. cost ~ \$1M? • Ongoing op. cost ~ \$20K? • Cost of daily telemetry feed? • Shipper costs?? 	<ul style="list-style-type: none"> • Timing within the day affected by timing of telemetry meter and gate injection data. • 1130 depending on gate validation timing?
	D+1 algorithm with gate MM allocations based on prior market share	<ul style="list-style-type: none"> • See accompanying slide • Similar accuracy to current D+1 	<ul style="list-style-type: none"> • As above 	<ul style="list-style-type: none"> • As above
'Simple' approaches	Share of gate nominations (FG)	<ul style="list-style-type: none"> • Shippers with sig. mass market shares will have limited info to base noms • Inaccuracies smeared across all shippers • See accompanying side 	<ul style="list-style-type: none"> • Limited costs • Shipper costs for systems to nominate gates? 	<ul style="list-style-type: none"> • Allocations can be published as soon as validated gate data is available
	Prior period market share	<ul style="list-style-type: none"> • See accompanying slide 	<ul style="list-style-type: none"> • As above 	<ul style="list-style-type: none"> • Allocations can be published as soon as validated gate data is available

How three different approaches vary from the interim for shippers at the BOP gas gates (15 – 21 February 2016)

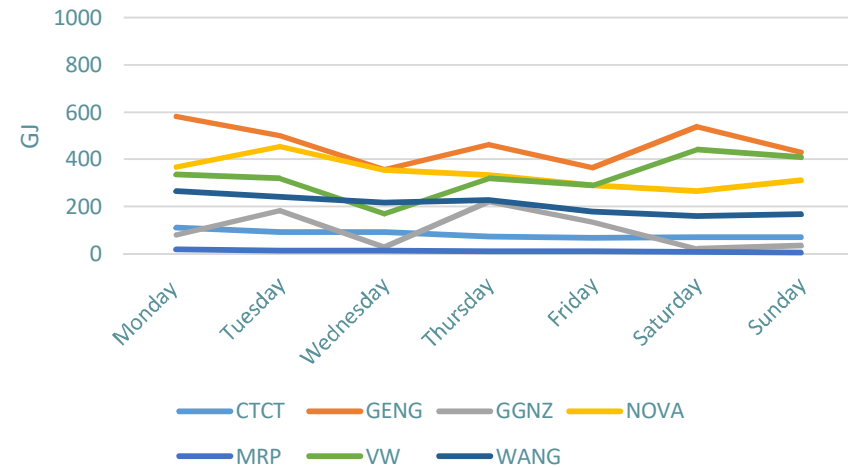


4 – 10 July 2016

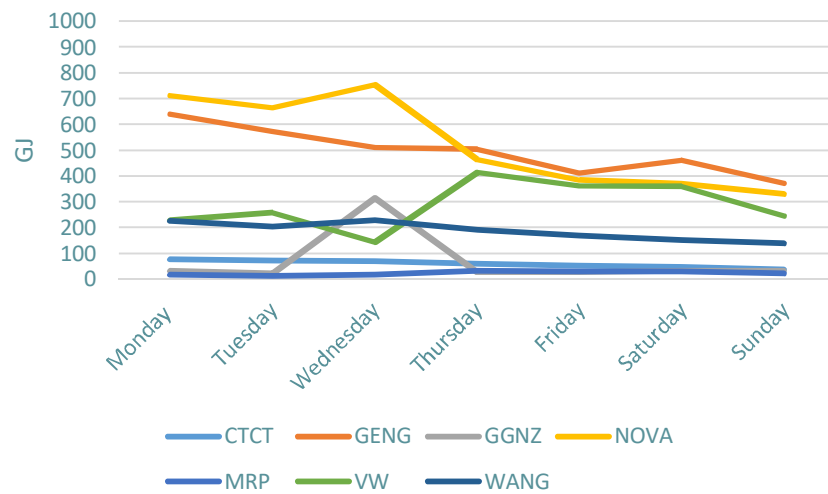
Current D+1 Algorithm



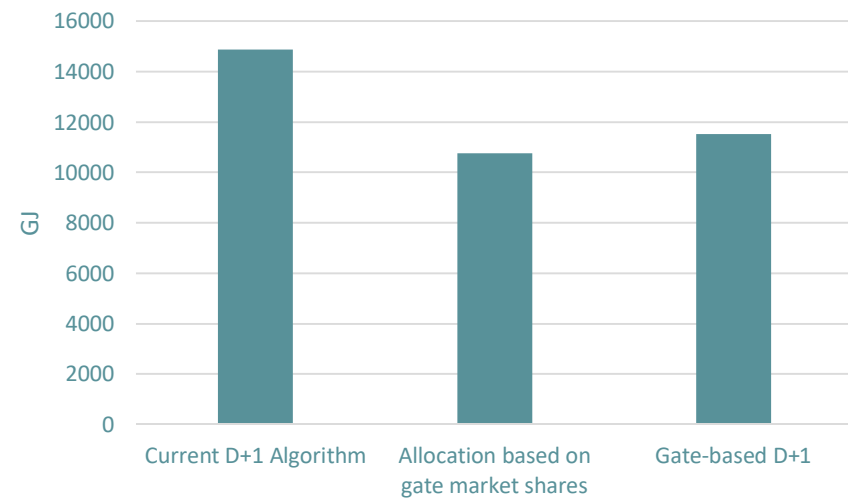
Allocation based on gate market shares



Gate-based D+1

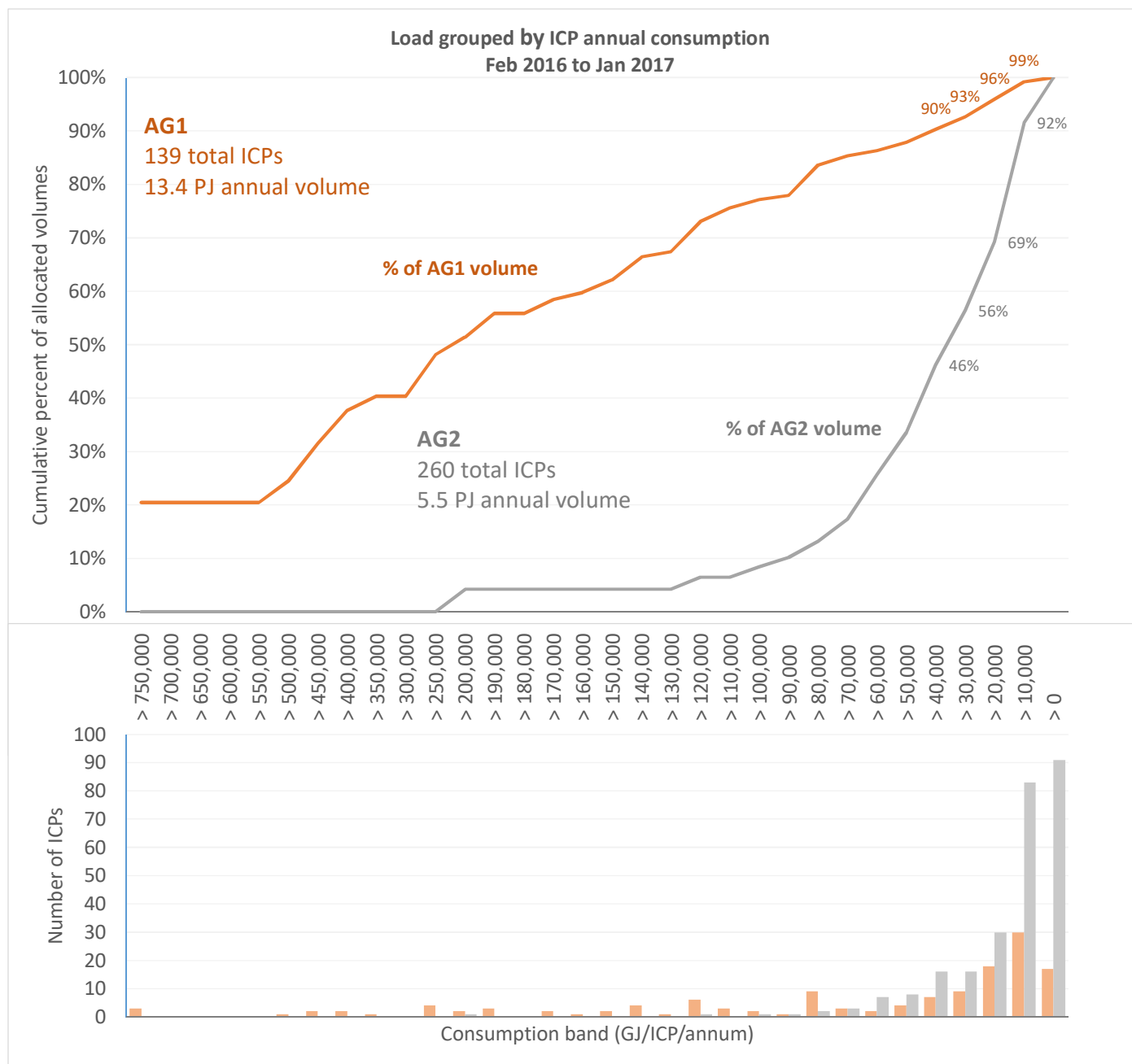


Total mis-allocation across the week



Telemetry threshold for TOU

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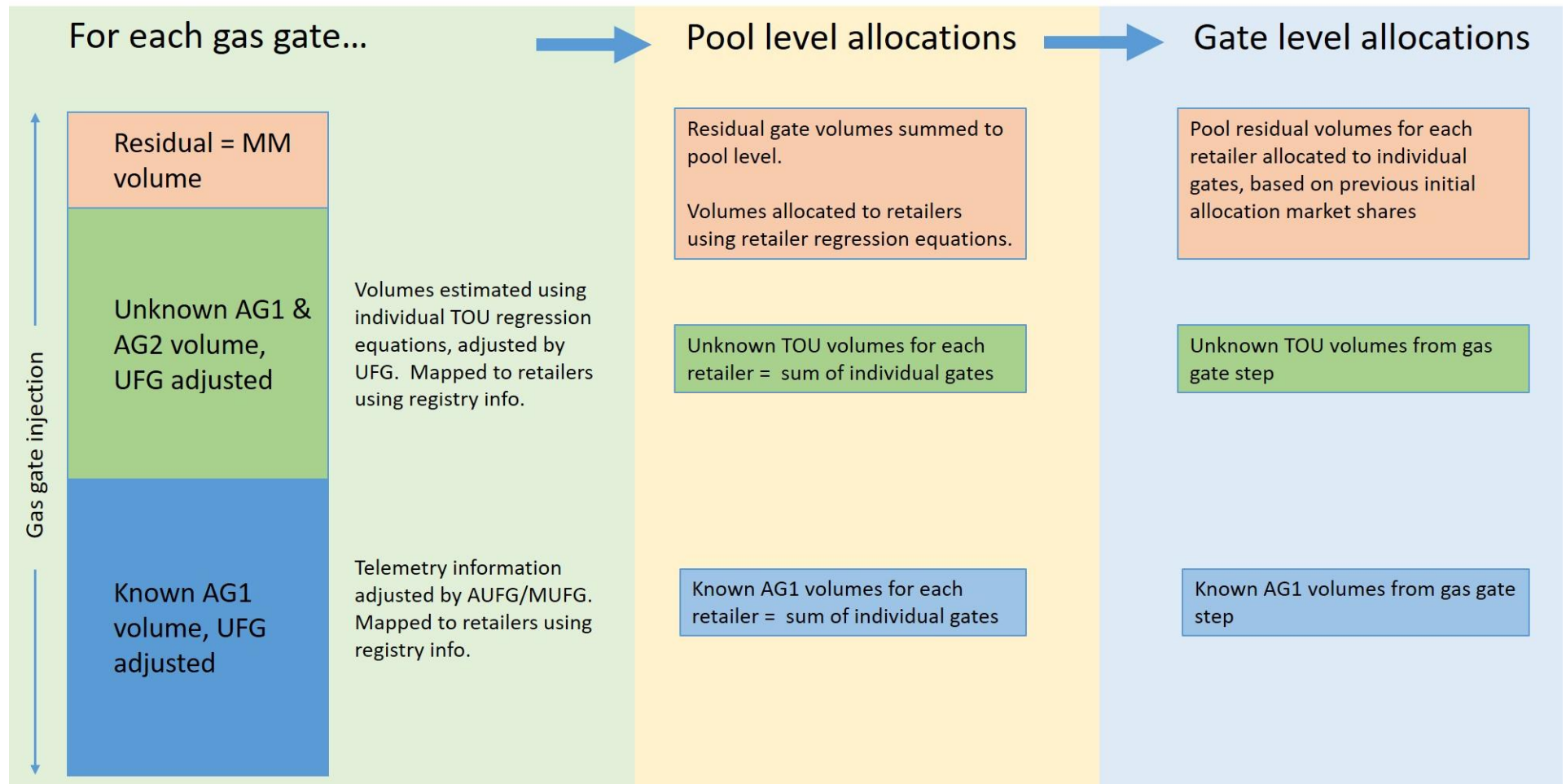
D+1 allocations at Maui gates

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Back-up slides

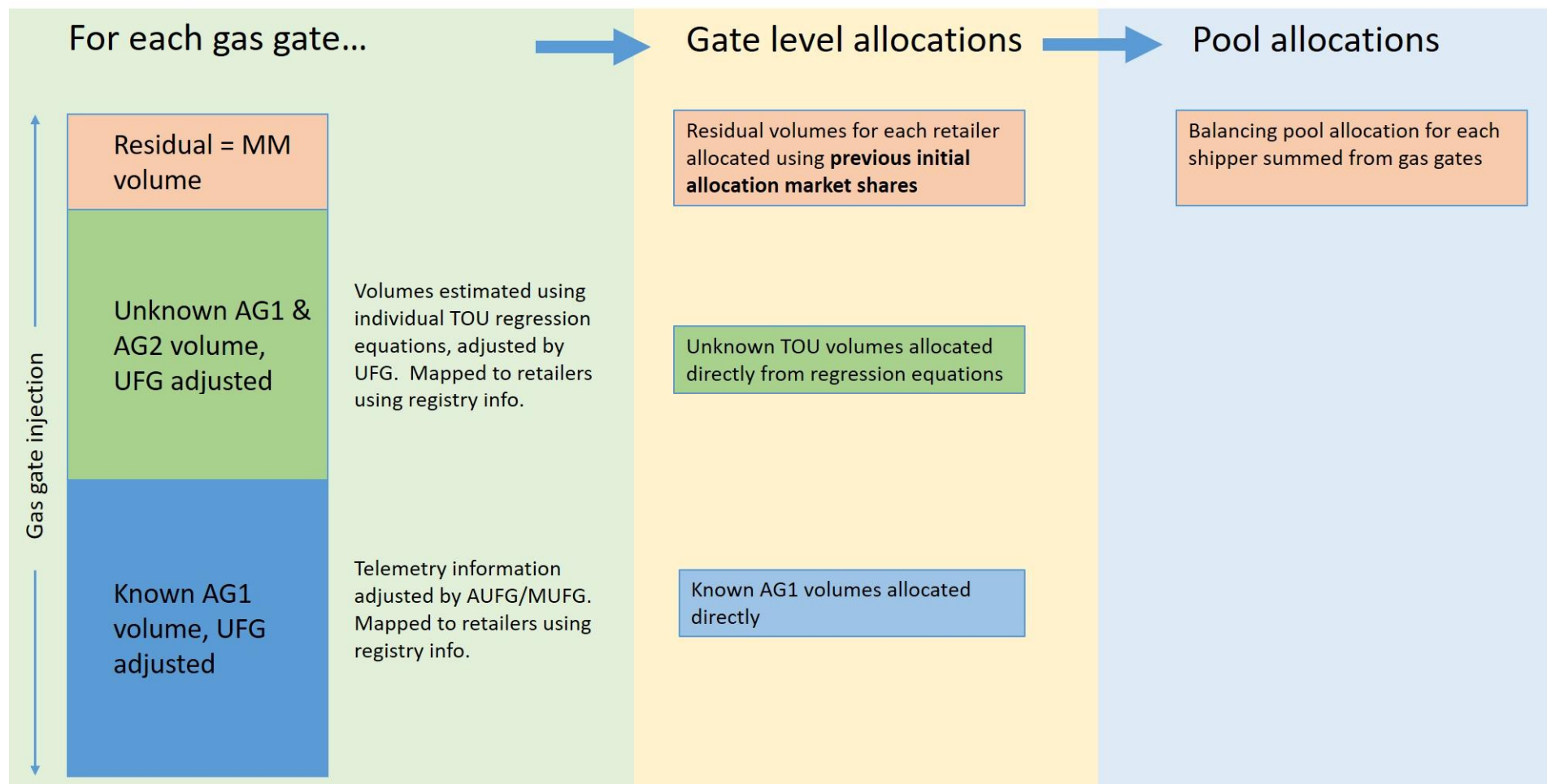
Current D+1 - approach

- TOU estimates calculated at gate level, along with residual (= mass market (MM)) volumes
- Aggregated to four pools. Pool-level residuals allocated to shippers using regression equations
- Pool volumes allocated to shippers/gates, with MM volume allocation based on previous month market shares



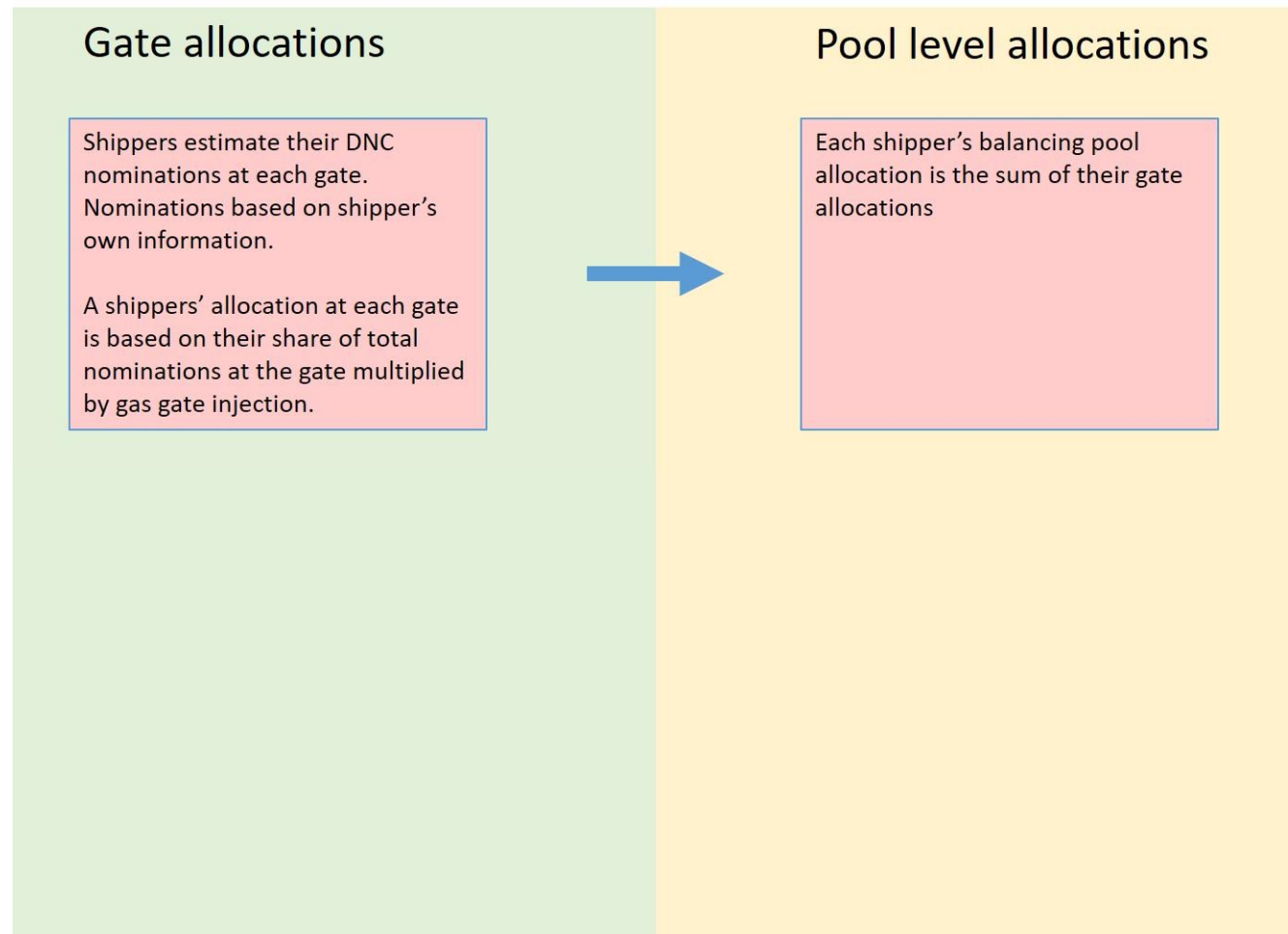
Gate-based D+1 approach

- TOU estimates calculated at gate level, along with residual (= mass market (MM)) volumes
- MM volumes at each gate allocated to shippers based on previous month market shares
- Gate volumes aggregated to provide system-wide allocation for balancing



First Gas allocation proposal

- Gas gate allocations for each shipper driven off GNC nominations. For a given gate, allocation = $\text{gate injection} \times (\text{shipper nomination} / \text{all shipper nominations})$
- Gate allocations summed for balancing pool allocation



Allocation based on gate-level market shares

- Gas gate allocations for each shipper driven off previous month market shares. For a given gate, allocation = gate injection x market share
- Gate allocations summed to for balancing pool allocation

