



Draft Recommendation on 10 October 2014 MPOC Change Request

Date issued: 25 February 2015
Submissions close: 5pm, Monday 30 March 2015



About Gas Industry Co.

Gas Industry Co is the gas industry body and co-regulator under the Gas Act. Its role is to:

- develop arrangements, including regulations where appropriate, which improve:
 - the operation of gas markets;
 - access to infrastructure; and
 - consumer outcomes;
- develop these arrangements with the principal objective to ensure that gas is delivered to existing and new customers in a safe, efficient, reliable, fair and environmentally sustainable manner; and
- oversee compliance with, and review such arrangements.

Gas Industry Co is required to have regard to the Government's policy objectives for the gas sector, and to report on the achievement of those objectives and on the state of the New Zealand gas industry.

Gas Industry Co's corporate strategy is to 'optimise the contribution of gas to New Zealand'.

Executive summary

Maui Development Limited (MDL) has requested a change to the Maui Pipeline Operating Code (MPOC) to introduce a market-based balancing (MBB) regime on the Maui pipeline. The MBB Change Request (MBBCR) application describes the proposed change as incorporating “important building blocks” from the previously submitted and supported October 2011 B2B¹ Change Request (B2BCR) and the February 2014 B2B Fixup Change Request (B2BFCR)².

MDL explains that the MBBCR is in response to stakeholder submissions on those earlier change requests that emphasised the need for a liquid market that would be accessible to both pipeline users and for MDL’s own balancing actions. Accordingly, the MBBCR allows for trading of Balancing Gas on a wholesale trading platform, such as the emsTradepoint market. In addition, the MBBCR involves daily Cash-Out of imbalance positions. MDL notes that the proposed changes are drawn from the European *Network Code on Gas Balancing of Transmission Networks* (EU Code) and that it regards that model as ‘international best practice’³.

On 24 October 2014, Gas Industry Co published and called for submissions on the MBBCR. On 5 November 2014, a workshop was held to discuss possible approaches to a Cost-Benefit Analysis on the proposal. Having had regard to the workshop and having considered both submissions and cross-submissions on the MBBCR we now release this Draft Recommendation for further consultation, including a Summary of Submissions attached as Appendix A and a Cost-Benefit Analysis prepared by independent expert Covec attached as Appendix B. The MBBCR and all related material can be found on Gas Industry Co’s website: <http://gasindustry.co.nz/work-programmes/mpoc-change-requests/mpoc-change-request-october-2014-market-based-balancing/>

Section 29 of the MPOC assigns Gas Industry Co a role in respect of any request to change the MPOC. That role is to consult on the change request with the gas industry and make a recommendation either ‘supporting’ or ‘not supporting’ it. Gas Industry Co evaluates any proposed change having regard to the objectives of Section 43ZN of the Gas Act 1992 (Gas Act) and other relevant considerations. A change request proceeds only where required by law or where Gas Industry Co makes a written recommendation to MDL supporting the change request.

Gas Industry assesses a change request against the status quo. Gas Industry Co cannot reject a change request because it believes it is not ideal, or that there may be a better alternative, or that there are additional things that could be done to improve balancing arrangements. As noted below, Gas Industry Co can use other workstreams to address remaining gaps. If the industry is

¹ B2B is short-hand for back-to-back, a set of arrangements aimed at allocating the costs of balancing actions taken by MDL (to maintain the stock of gas in the pipeline within safe limits) to the Welded Parties responsible for causing the pipeline imbalance.

² MBBCR s 2.7

³ MBBCR s 2.2 and 2.3

unable to resolve these related issues, Gas Industry Co retains its power to recommend gas governance regulations where the associated statutory test is met.

Gas Industry Co's assessment, including having considered submissions and cross-submissions received, is that implementation of the MBBCR will:

- generally improve efficiency of gas transport arrangements;
- allow MDL to procure Balancing Gas on a market that is significantly more liquid than the current BGX, and allow for all pipeline users to participate in that market, thus removing barriers to competition in the supply of Balancing Gas and creating downward pressure on prices;
- signal the cost of pipeline flexibility (over permitted tolerances), that will allow pipeline users to make better investment decisions and potentially increase competition for the supply of other forms of flexibility; and
- result in more stable balancing, thereby reducing security of supply risks.

Implementation of the MBBCR accordingly aligns with the objectives in section 43ZN of the Gas Act.

On the basis of the submissions to date, the Covec Cost-Benefit Analysis, and our own analysis of the likely effects of implementing the MBBCR compared with the status quo, this Gas Industry Co Draft Recommendation accordingly supports the proposal.

Gas Industry Co invites submissions on this Draft Recommendation by 5pm, Monday 30 March 2015. We are particularly interested to receive submissions on the analysis of costs and benefits, and which are specific and evidence-based.

Stakeholders are invited to a workshop to be held at Gas Industry Co's offices from 1:00–3:00 pm on Tuesday, 10 March 2015. This will provide stakeholders with an opportunity to seek clarification of any aspects of the analysis contained within the Draft Recommendation and/or the associated Cost-Benefit Analysis. As well as Gas Industry Co personnel, Dr John Small of Covec will be in attendance.

Following consideration of submissions, Gas Industry Co is targeting issuing its Final Recommendation on 27 April, 2015, but this is subject to any extra steps arising from submissions received.

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1

Introduction

1.1 Purpose

This paper presents Gas Industry Co's Draft Recommendation in respect of the MPOC change request submitted by MDL on 10 October 2014, the MBBCR. The change request proposes new arrangements for managing differences between nominated and actual flows, known as 'imbalance'.

The MBBCR and all submissions and cross submissions are available on Gas Industry Co's website at <http://gasindustry.co.nz/work-programmes/mpoc-change-requests/mpoc-change-request-october-2014-market-based-balancing/>

Unless otherwise noted, capitalised terms used in this Draft Recommendation have the same meaning given to those terms in the MPOC. A glossary of terms is provided at the end of this report

1.2 Gas Industry Co's role under the MPOC

Section 29 of the MPOC assigns Gas Industry Co a role in respect of any MPOC change request, to consult on the change request with the gas industry and determine whether or not to support it. Gas Industry Co's Memorandum of Understanding with MDL (MoU) describes how the Company's role in relation to change requests will be performed. Although the MOU is not legally binding, Clause 2.3 of the MoU requires Gas Industry Co to have regard to the objectives set out in section 43ZN of the Gas Act when it considers the change request. Gas Industry Co otherwise has broad discretion in determining what considerations could be relevant (consistent with its statutory powers and functions).

The MoU also sets out a process under which Gas Industry Co receives change requests; calls for submissions; issues a draft recommendation which includes an analysis of the issues under consideration and a cost-benefit analysis; considers further submissions; and makes a final recommendation to MDL. Gas Industry Co can supplement this process, including by calling for cross-submissions as we have in this case.

A change request proceeds only where required by law or where Gas Industry Co makes a written recommendation supporting the change request. MDL also has sole discretion not to give its written consent to a change request if it considers the change would materially adversely affect its Maui pipeline business or tariffs or a TP Welded Party's transmission pipeline business, the change would require MDL to incur capital expenditure, or to incur operating expenses or costs that cannot be recovered, or materially adversely affect the compatibility of MDL's open access regime with that of a TP Welded Party.

Gas Industry Co's contractual role under the MPOC is different to Gas Industry Co's role under the Gas Act. Understanding this difference is important to understanding this Draft Recommendation. We discuss further in section 2 below the relevant process and associated legal issues.

For further information on Gas Industry Co's role (including a [copy of the MoU](#)) please refer to Gas Industry Co's website at <http://gasindustry.co.nz/dmsdocument/4144>

1.3 Background

Balancing arrangements have been under review since the inception of the Maui Pipeline Operating Code in 2005. Transmission Pipeline Balancing has been the subject of extensive industry discussion since then and some improved arrangements have been introduced, notably:

1. In 2007, Vector introduced the Vector Transmission Code (VTC) containing balancing and peaking pool (BPP) arrangements designed to pass balancing costs through to Vector shippers;
2. In 2008 the transitional "legacy gas" provisions of the MPOC were removed, exposing pipeline users to more cost-reflective balancing charges;
3. In 2009, MDL introduced a Balancing Gas Exchange (BGX) – an online platform to facilitate the trading of balancing gas on the Maui pipeline (several BGX upgrades have occurred since then);
4. In 2013 Transpower Limited concluded arrangements with Vector to enable Transpower's emsTradepoint market to provide gas trading services at Frankley Road. The market has operated since then^[1]; and
5. MDL has continued to evolve its Balancing Gas standard operating procedure, first made public in 2007.

A fuller overview of these matters can be found at <http://gasindustry.co.nz/dmsdocument/4809>

Although the shortcomings of the balancing arrangements have been thoroughly analysed and debated, the basic balancing arrangements have not changed. The most recent efforts to reform the arrangements were:

- In 2009, Gas Industry Co led a comprehensive and concentrated industry initiative known as the Industry Code Development (ICD) process which ultimately failed to agree on how to reform the codes.
- Also in 2009, Gas Industry Co proposed to introduce regulations to achieve a unified balancing regime over both the Maui and Vector pipelines. After consulting with the Ministry

^[1] Efficient arrangements for the short-term trading of gas as part of an efficient wholesale market is an outcome sought by the GPS.

of Economic Development, Gas Industry Co agreed to an industry request to defer that regulatory proposal to give opportunity for the industry to develop a code-based option.

- On 17 December 2009, MDL submitted an MPOC change request which proposed extensive revisions to the MPOC including balancing improvements (December 2009 Change Request). That change request was finally not supported by Gas Industry Co, partly because the broad range of proposed changes and the overall judgment required of us on this issue.
- On 13 October 2011 MDL submitted a more focused MPOC change request intended to introduce a B2B balancing arrangement that would target balancing costs to pipeline users responsible for causing those costs. That change request was supported by Gas Industry Co but implementation was delayed to allow Vector time to change its own pipeline operating code (the VTC) in order to address a 'material adverse effect' that Vector considered was created by the B2BCR.
- Vector subsequently issued a VTC Change Request proposing changes to the VTC that would be needed as a result of the B2BCR. Those changes were not supported by Vector's customers and the Change Request was appealed to Gas Industry Co by Vector in November 2012. That appeal was granted on 3 September 2013, allowing Vector to lift its material adverse effect notice.
- On 14 February 2014 MDL submitted a further MPOC change request, the B2BFCR. That change request mostly related to arrangements for MDL buying and selling gas to manage the inventory of gas in the pipeline. That change request was supported by Gas Industry Co on 2 May 2014 and it was expected that the B2BCR and B2BFCR would both be implemented.

MDL has not moved to implement the B2BCR and the B2BFCR, and Vector has accordingly not implemented its corresponding VTC Change Request. Instead, MDL has now developed an alternative MBBCR (that will incorporate but adapt the B2BCR and B2BFCR), and it is this change request that is evaluated in this Draft Recommendation. MDL's reasons for doing this are set out in s2.3.4 of the MBBCR. Essentially, the difference in prices between the gas traded on the BGX and on the (generally more liquid) emsTradepoint market make the current arrangements increasingly untenable, but the B2B framework does not give MDL sufficient confidence to buy balancing gas on the emsTradepoint market. In contrast, the MBBCR together with other arrangements agreed between MDL and emsTradepoint would allow for the trading of balancing gas on the more liquid market (or a similar trading platform).

MDL has stated^[2] that it will not consent to the B2BCR if Gas Industry Co does not support the MBBCR.

In concluding this background summary, Gas Industry Co believes that, contrary to some comments in submissions, the balancing issues that have been the subject of all this work remain with us. In particular, while residual balancing costs have reduced significantly over recent years, underlying risks and inefficiency remains. Similarly, some submitters have commented that the problem with balancing needs to be defined and clarified. A problem definition is appropriate when Gas Industry Co considers governance arrangements, including

^[2] MDL submission paragraphs 13 and 14

possible regulation. Gas Industry Co developed a problem definition when it was considering regulatory options to solve the balancing gas issues. With an industry-led code change process, though, improvements to existing arrangements are developed, which may be quite specific in many circumstances and do not require a problem definition or comprehensive set of solutions to all related issues.

1.4 Pre-consultation, submissions and cross-submissions

The MBBCR describes^[3] the consultation MDL engaged in prior to submitting the MBBCR to Gas Industry Co. This included:

- discussion at a 4 April 2014 Shippers and Welded Parties workshop;
- a pipeline balancing information paper released on 28 May outlining MDL's concerns with B2B⁴;
- providing stakeholders with a draft of the MBBCR on 13 August 2014;
- meeting with individual stakeholders to discuss the draft proposal;
- a workshop on the draft MBBCR on 27 August 2014; and
- analysis of the 12 written submissions MDL received in response to the draft MBBCR.

Following these industry engagements, MDL finalised the MBBCR and submitted it for Gas Industry Co's consideration on 10 October 2014. We called for submissions on 24 October 2014.

Also, to allow us to begin framing our approach to a Cost-Benefit Analysis of the MBBCR we published a document prepared by Covec entitled *Daily Cash-Outs on Maui Pipeline: Outline of a Cost-Benefit Analysis, 22 October 2014*. This was discussed at an industry workshop held on 5 November 2014, at which John Small of Covec sought feedback on his initial thoughts about the appropriate frame of reference for the analysis and categories of costs and benefits.

Submissions on the MBBCR were received from:

- Carter Holt Harvey Pulp and Paper Limited;
- Contact Energy Limited;
- emsTradepoint (Transpower New Zealand Limited);
- Genesis Energy Limited;
- Greymouth Gas New Zealand Limited;
- Major Gas Users Group (MGUG) ;
- Maui Development Limited;
- Methanex New Zealand Limited;

^[3] MBBCR paragraphs 61 and Appendix 1

⁴ Subsequent submissions on the paper reinforced MDL's belief that implementing B2B would increase the number of balancing disputes.

- Mighty River Power Limited;
- New Zealand Steel Limited;
- Nova Energy Limited;
- OMV New Zealand Limited;
- Shell Exploration NZ Limited;
- Trustpower Limited; and
- Vector Limited.

Following a preliminary review of these submissions, Gas Industry Co considered that cross-submissions were necessary. We invited cross-submissions on any matter raised by other submitters, but in particular asked for further views on:

- Cost increases faced by shippers and end users;
- Significance of market prices;
- The cost of high-pressure situations; and
- The extent to which the change request may reduce high-pressure situations.

All those who made submissions on the MBBCR also made cross-submissions except for Genesis Energy Limited. All submissions and cross-submissions can be accessed at <http://gasindustry.co.nz/work-programmes/mpoc-change-requests/mpoc-change-request-october-2014-market-based-balancing/>

1.5 Appropriate counterfactual for the analysis

The MBBCR includes a mark-up of the MPOC against the existing MPOC modified by the supported but not implemented B2BCR and B2BFCR. The salient features of that mark-up are:

- Introducing daily Cash-Out of excess imbalances at welded points (irrespective of whether MDL takes a balancing action on that day or not);
- Giving MDL flexibility to obtain balancing gas from the most suitable source with preference given to using a standard daily gas product bilaterally traded on a spot market; and
- Revising peaking limits and Running Operational Imbalance (ROIL) limits.

However, because MDL will not implement the previously-supported B2B arrangements on their own without the MBBCR, we must evaluate the totality of the current change, ie including a re-assessment of any elements of the B2BCR and B2BFCR that will survive if the MBBCR was implemented. This approach is illustrated in Figure 1.

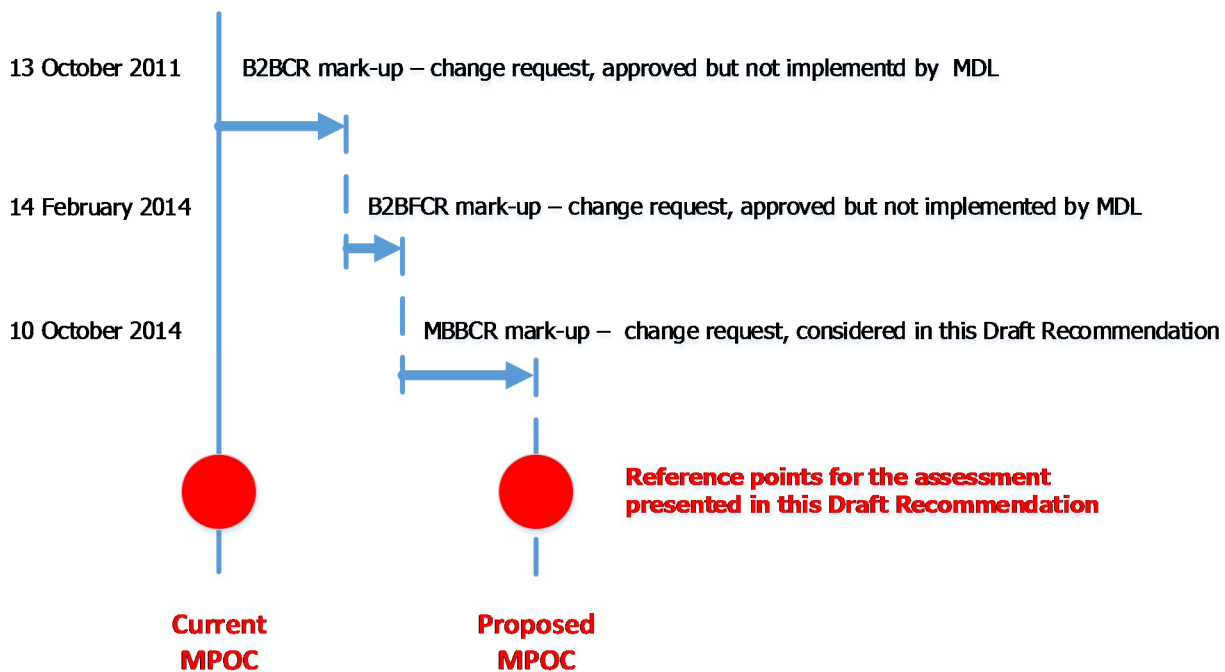


Figure 1 – Reference point for analysis of the MBBCR

The salient features of the B2BCR that will survive if the MBBCR is implemented are:

- Publishing new information on OATIS⁵ and the BGX including real-time metering information at certain locations and Balancing Gas buy and sell prices;
- Removing Transmission Pipeline Welded Parties' (TPWP)^[4] ability to nominate Balancing Gas during the post-Intra-Day cycle;
- Abandoning the current Imbalance Limit Over-run Notice (ILON) process; and
- Removing the Balancing Agent's ability to claim against the Incentives Pool (IP).

The salient features of the B2BFCR which will survive if the MBBCR is implemented are:

- Allowing for there being more than one Trading Hub on the pipeline;
- Giving MDL the ability to agree with a Notional Point Welded Party special terms for dealing with Operational Imbalance (OI) at Notional Welded Points;
- Correcting some provisions that currently apply to Notional Welded Points, but which should only apply to physical Welded Points; and
- Deleting some legacy provisions and tidying up others.

⁵ OATIS – the Open Access Transmission Information System – is the IT system used to manage third party access to transmission pipelines.

^[4] The only current TPWP is Vector.

Although the proper basis for comparing the MBBCR is the status quo, it may help orient readers of this Draft Recommendation to know how the salient features of B2B and MBB compare. The high level comparison is:

Table 1 High level comparison of B2B change request and MBB change request

B2B change request	MBB change request
Promoted by MDL (originally in December 2009 Change Request)	Promoted by MDL (in 2014 MBBCR)
Loosely based on GIC's 2009 Statement of Proposal	Based on European Union arrangements
Cash-Out of pipeline user excess imbalances only when MDL takes balancing actions	Cash-Out of pipeline user excess imbalances every day
Small imbalance tolerances	Imbalance tolerances smaller than at present but initially larger than under B2B
Cash-Outs at average market price	Cash-Out at marginal market price or average price +/- an adjustment

One submitter⁶ submitted that the MBBCR should be struck out because it attached a version of the MPOC that showed changes made to the MPOC as it would have been amended by the B2BCR and B2BFCR.

While, as set out above, it is clear that the status quo is the relevant comparison for MBBCR, the version of the MPOC included with the MBBCR helpfully shows submitters which MPOC amendments included in the B2B proposals would not be retained under the MBBCR.

We discuss process and legal aspects of this matter further in section 2.5 below.

1.6 Cost-Benefit Analysis

Building on feedback received at the 5 November 2014 workshop (discussed in Section 1.4 above) and subsequent submissions and cross-submissions on the MBBCR, Covec has completed a Cost-Benefit Analysis which is presented in Appendix B. Although commissioned and paid for by Gas Industry Co, the Cost-Benefit Analysis is provided by Covec as an independent expert.

The Cost-Benefit Analysis is based on Covec's investigations, analysis of the MBBCR and on submissions received to date. We asked Covec to make it clear what further information would help it to finalise its analysis for the purposes of Gas Industry Co's Final Recommendation. We invite stakeholder to consider Covec's Cost-Benefit Analysis and to include in their submissions on this Draft Recommendation any critiques of the analysis and any additional costs or benefits that they believe are relevant.

⁶ Greymouth submission p2

1.7 Invitation for submissions and next steps

Gas Industry Co invites submissions on this Draft Recommendation, including the Covec Cost-Benefit Analysis. We are particularly interested to receive submissions on the analysis of costs and benefits, and which are specific and evidence-based. Submissions are due by 5pm, Monday 30 March 2015. Please note submissions received after this date may not be considered.

Gas Industry Co will electronically acknowledge receipt of all submissions. If you do not receive electronic acknowledgement of your submission within two business days, please contact Jay Jefferies on 04 494 2469.

Gas Industry Co values openness and transparency, and usually places submissions on our website. If you intend to provide confidential information in your submission, please discuss this first with Ian Wilson at Gas Industry Co (04 494 2462).

Stakeholders are invited to a workshop to be held at Gas Industry Co's offices from 2:00–4:00 pm on Tuesday, 10 March 2015. This will provide stakeholders with an opportunity to seek clarification of any aspects of the analysis contained within the Draft Recommendation and/or the associated Cost-Benefit Analysis. As well as Gas Industry Co personnel, Dr John Small of Covec will be in attendance.

Following consideration of submissions, Gas Industry Co will issue its Final Recommendation. The target date for this is 27 April 2015, but this is subject to any extra steps arising from submissions received.

2

Process and Legal Issues

In this section we address process and legal issues, particularly those that shape our approach or that have been raised in submissions.

2.1 Gas Industry Co Role

A number of submissions suggest alternative or improved options for MPOC balancing arrangements. These include suggestions for additional 'balancing tools', such as D+1⁷ (NZ Steel, MGUG), changing the current nomination cycles (Genesis, MGUG), and the introduction of telemetry meters (Trustpower). But, as Nova notes, suggestions to change the change request 'are not relevant in the context of the decision to be made by GIC.' Whereas our Gas Act role requires the consideration of all practicable options before making a recommendation to the Minister, the MPOC role is more constrained. It does not permit Gas Industry Co to require amendments to a change request, or to impose what it sees as a better alternative, or to require other MPOC changes to be made (for example, downstream balancing tools). Gas Industry Co only considers the change request against the status quo. Our role is limited to supporting or not supporting the change request following appropriate industry consultation and having regard to the objectives in section 43ZN of the Gas Act.

Submissions⁸ also suggest that MDL's process for developing the MBBCR (described in section 1.4 above) has been inadequate or was cut-short without sufficient consideration for stakeholder views. MRP, NZ Steel and MGUG ask Gas Industry Co to put the MBBCR on hold to allow Gas Industry Co and MDL to participate in a 'pipeline management working group'. Gas Industry Co is required to consult on the MBBCR and provide its recommendation having regard to the objectives in the Gas Act. We are aware of other industry discussions about alternatives, but have declined to participate in those while we fulfil our role under the MPOC in relation to this MBBCR.

A number of submissions go further and question whether addressing MPOC balancing issues through a code change process is appropriate, suggesting that Gas Industry Co should instead recommence development of alternative governance arrangements using its co-regulatory powers. Nova refers to a 'failing governance process'. In section 1 above, we reference the lengthy efforts to date to address balancing issues over recent years. For present purposes, the key points are that Gas Industry Co previously developed regulations, but agreed to defer those as a result of an industry request for an opportunity to develop code-based arrangements. Gas Industry Co has then spent several years processing (and to date largely supporting) MPOC and VTC change requests to that end. Submissions opposing the MBBCR particularly reflect:

⁷ D+1 refers to a system for allocating quantities of gas among shippers on the day after gas flow. Gas Industry Co expects to engage with stakeholder on a D+1 proposal within the next few months.

⁸ Eg Greymouth cross-submission p6

- the amount of time taken by successive disputed change requests;
- MDL's decision not to implement the previous B2B change requests; and
- the remaining divergence of views on the MBBCR.

In respect of the several submissions referred to in this section 2.1 above, Gas Industry Co's participation in MPOC change requests needs to remain consistent with its role as industry body under the Gas Act. This is reflected in the MoU requirement that we have regard to the objectives in Part 4A of the Gas Act. And, as noted above, we otherwise have broad discretion in determining what considerations could be relevant in assessing an MPOC change request.

Additionally, before making a recommendation for gas governance regulations, Gas Industry Co must ensure that the objective of the regulation is unlikely to be satisfactorily achieved by any reasonably practicable non-regulatory means (Gas Act section 43N(1)(c)). We do not believe that stage has been reached. Before assessing its merits, Gas Industry Co views the MBBCR as a detailed and serious attempt by MDL to address the principal outstanding balancing issues. MDL has invested considerable time and resource in its development and it is incumbent on the rest of the industry and Gas Industry Co to consider the MBBCR thoroughly.

We have accordingly taken the view that we should process the MBBCR as for the preceding MPOC change requests and (as indicated above) not participate in other industry discussions while we do so.

Submissions reveal one other reason supporting this view—balancing arrangements and issues are interconnected with a range of other transmission matters. Gas Industry Co's experience since its establishment 10 years ago is that much delay and confusion can be caused by attempting to address too many issues simultaneously (or by pursuing the 'perfect solution') while not staying focused on the specific issues that underpin a specific code change proposal.

We acknowledge the latter point is a matter of judgement. We need say no more at this juncture than that the potential for Gas Industry Co to consider alternative governance arrangements remains a backstop provided by the co-regulatory model if the MBBCR does not provide a timely solution to balancing issues for any reason.

Finally, a number of submitters have called on Gas Industry Co to opine on particular issues that are not necessary for us to make this Draft Recommendation. We have focused on the MBBCR, and we are satisfied we have considered and taken into account all relevant matters in making the assessment in this document.

2.2 External considerations

A group of submissions suggests that factors external to the MPOC support Gas Industry Co either deferring or declining to support the MBBCR.

Commerce Act considerations

Submitters suggest that the MBBCR may result in non-compliance with the Commerce Act or that there are issues associated with whether additional costs are recoverable under Part 4 of the Commerce Act (MDL, Vector, Greymouth). While relevant to balancing issues generally, these concerns should not preclude Gas Industry Co from making its recommendation on the MBBCR:

- Clauses 7.1-7.4 of the MoU expressly state that compliance with the Commerce Act and all other law is the responsibility of MDL and the Parties to Interconnection Agreements (ICAs) and Transmission Services Agreements (TSAs).
- Some submissions raise doubt about whether Cash-Outs are a recoverable cost under incentive regulation arrangements. The Commerce Commission will need time to consider the issue, so it will not be resolved before our Final Recommendation on the MBBCR is made. Consistent with many processes requiring approvals under multiple regimes, a proponent needs to start somewhere. In this case, we believe that it is appropriate and reasonable for MDL to ask for the MBBCR to be processed first, and there is nothing in submissions that precludes our process or Recommendation. We discuss aspects relevant to our assessment in section 5 below. Similarly, Covec has been able to undertake its Cost-Benefit Analysis without needing to consider at this stage whether specific costs are recoverable. Gas Industry Co's view, therefore, is that this issue should not significantly alter the outcome of its determination.

Possible Vector material adverse effect notice

Vector's cross-submission says it is preparing a 'material adverse effect notice' under its interconnection agreement with MDL to further challenge the MBBCR. This is a matter between Vector and MDL. However, if Vector believes it is material to Gas Industry Co's consideration of the MBBCR, it may wish to disclose the basis of that notice in a submission on this Draft Recommendation

2.3 Is MDL meeting its MPOC obligations?

Nova⁹ suggests that MDL is conflicted in promoting lower Line Pack because these conditions benefit gas producers. Any such concerns about whether MDL is complying with the MPOC are matters that MPOC Parties are entitled to raise with MDL as a dispute under the MPOC. We do not consider that these issues should preclude us processing the MBBCR. Issues of benefit to producers and other interests are covered below in section 5.5 below and the Appendix A Cost-Benefit Analysis.

Contact suggests that Gas Industry Co should require MDL to implement emsTradepoint market based trading under the existing MPOC. Gas Industry Co has no power to require compliance with the MPOC by any party. A more refined version of the submission might be that Gas Industry Co should not support a change request where implementation of the emsTradepoint

⁹ Nova cross-submission p3

market based trading might theoretically be possible without the change. However, we understand that aspects of the MBBCR are designed to address potential issues for MDL associated with implementing that trading on the Maui pipeline under the current MPOC. If that were not the case, MDL would not have proposed the MBBCR. Our assessment proceeds on that basis.

2.4 Enforceability of the adjustment factor

Some submissions¹⁰ suggest that the MBBCR contains an element of unenforceable penalty, comments which we understand all refer to the proposed adjustment factor of up to 10% (MPOC s12.12(d) as it would be amended by MBBCR). We understand this factor has been designed to provide an incentive, similar to the kind used in other balancing regimes—see section 4.3 below. If MDL were to misuse its discretion when applying this adjustment factor, MPOC Parties could be entitled to raise a dispute under the MPOC. Gas Industry Co does not therefore need to opine on whether the adjustment factor is legally flawed.

However, we agree with Covec¹¹ that by pushing the Cash-Out prices somewhat away from market clearing prices, the adjustment factor would provide an incentive to improve primary balancing. Without the adjustment factor, Cash-Out gas would be priced at the prevailing market price leaving pipeline users indifferent as to whether they were cashed-out or not. And while the adjustment factor is not strongly related to specific costs, it does generally signal that park and loan services are not costless.

2.5 Relationship to B2B

We set out in section 1.3 above how MDL says the MBBCR relates to the B2B change supported previously by Gas Industry Co. Two related issues are raised in submissions.

MDL has confirmed that it will not implement the previously-supported B2B arrangements on their own without the MBBCR. Submitters note that the MPOC provides limited circumstances in which an MPOC code change may not be implemented, and suggest that this should in some way preclude Gas Industry Co processing the MBBCR (Vector, Nova, Contact). Gas Industry Co is not a party to the MPOC. We have no express power under the MoU or otherwise to require MDL to implement changes we may support. Any such issues are accordingly primarily a matter for the MPOC Parties, which they are entitled to raise by way of a dispute under the MPOC. In any case, it appears from submissions that there is no party currently supporting, or seeking to enforce, implementation of the B2B changes on their own.

In its original submission, Contact submitted that the MBBCR should be evaluated against the existing MPOC alone. In its cross-submission, however, Contact submits that the MBBCR must be evaluated against both the existing MPOC and the MPOC as it would be amended by B2B. As

¹⁰ Contact, Greymouth, NZ Steel

¹¹ Appendix B Cost-Benefit Analysis section 3.1.5

noted above, MDL has confirmed that B2B will not be implemented on its own. We consider that the MBBCR validly includes the B2BCR and B2BFCR (as they would be amended by the MBBCR) and evaluation of the MBBCR against the existing MPOC is the appropriate basis for comparison.

3

Approach to analysis

3.1 Overview of changes

The MBBCR proposes to change how MDL will buy and sell Balancing Gas (ie gas to manage Line Pack) and to replace the existing ILON process with automatic daily Cash-Out of excess imbalance. Associated changes relate to the Balancing Agent's role, and Peaking and Incentives Pool arrangements and removal of the TP Welded Party's Balancing Gas scheduling rights.

3.2 Structuring the change request for evaluation

To aid the analysis we consider the MBBCR as several inter-dependent components:

- Balancing Agent role;
- Balancing Actions;
- Cash-Outs;
- Peaking;
- Daily tolerances;
- Incentives Pool; and
- TP Welded Party Balancing Gas scheduling rights.

There are also a number of related issues that submitters believe Gas Industry Co should consider. These are:

- MDL's recovery of balancing costs;
- Absence of balancing tools: nomination cycles and D+1;
- Effect on downstream users;
- Barriers to entry;
- Misalignment of codes;
- International best practice;
- Proportionality; and
- A better solution through a co-operative approach.

Section 4 of this Draft Recommendation compares the proposed changes with the current arrangements.

Section 5 considers other relevant issues.

Section 6 summarises the costs and benefits of the MBBCR.

Section 7 draws the analysis together in an overall evaluation.

Section 8 is Gas Industry Co's Draft Recommendation on the MBBCR.

Appendix A provides a summary of submissions and cross-submissions received to date.

Appendix B attaches Covec's Cost-Benefit Analysis.

3.3 Evaluation criteria

The MoU requires Gas Industry Co in assessing code change requests to have regard to relevant objectives specified in section 43ZN of Part 4A of the Gas Act.

Under section 43ZN of the Gas Act, the principal objective of Gas Industry Co (in recommending gas governance regulations and rules under section 43F) is to:

'...ensure that gas is delivered to existing and new customers in a safe, efficient, and reliable manner.'

In addition, the other Gas Act objectives Gas Industry Co considers are relevant to our evaluation of the MBBCR are:

- the facilitation and promotion of the ongoing supply of gas to meet New Zealand's energy needs, by providing access to essential infrastructure and competitive market arrangements;
- barriers to competition in the gas industry are minimised;
- incentives for investment in gas processing facilities, transmission, and distribution are maintained or enhanced;
- delivered gas costs and prices are subject to sustained downward pressure;
- risks relating to security of supply, including transport arrangements, are properly and efficiently managed by all parties; and
- consistency with the Government's gas safety regime is maintained.

There are also several outcomes in the GPS that we also think are relevant to our evaluation, including:

- accurate, efficient and timely arrangements for the allocation and reconciliation of downstream gas quantities;

- an efficient market structure for the provision of gas metering, pipeline and energy services;
- efficient arrangements for the short-term trading of gas; and
- accurate, efficient and timely arrangements for the allocation and reconciliation of upstream gas quantities.

4

Comparison of proposed changes with current arrangements

In this section we assume the reader has a broad understanding of how the existing pipeline balancing regime works. Readers wishing to recap can refer back to section 2.2 of Gas Industry Co's *Transmission Pipeline Balancing Research Paper*, April 2008, available at <http://gasindustry.co.nz/dmsdocument/3543>. That paper gives a complete overview of the existing MPOC balancing regime and, although the paper is some years old, no significant changes have been made to the balancing arrangements since it was written.

4.1 Balancing Agent Role

Current arrangements

MDL appoints the Balancing Agent from time to time to manage Line Pack (MPOC s1.1).

The Balancing Agent can make an Incentives Pool Claim to meet the costs of buying gas (MPOC s14.4).

A Welded Party's sole liability to the Balancing Agent because MDL or another Welded Party is prevented from taking its full Scheduled Quantity as a result of an Operational Imbalance or exceeding a Peaking Limit is limited to any amount of any Cash-Out (MPOC s14.6).

The commercial operations of the Balancing Agent are ring-fenced.

Proposed arrangements

The MBBCR proposes to delete many MPOC references to the Balancing Agent. In particular:

- references to the Balancing Agent buying or selling gas to manage Line Pack would be deleted (except in MPOC s24.1);
- all references to the Balancing Agent being able to make claims on the Incentives Pool would be deleted; and
- the Balancing Agent would no longer be listed as an entity to whom the sole liabilities of Welded Parties in the event of an Operational Imbalance or exceeding a Peaking Limit is proscribed (MPOC s14.6).

The references that would be retained are:

- the MPOC s1.1 definition of 'Balancing Agent' as the balancing agent appointed by MDL from time to time. However, the previously appended words '... to manage the Line Pack' would be deleted; and
- the MPOC s24.1 ring-fencing provisions that separate the commercial operation of the Balancing Agent and MDL and bind the Balancing Agent to the MPOC Schedule 4 Confidentiality Protocols would be retained. And the provision would specifically refer to Balancing Gas and Fuel Gas: MPOC s24.1(c) states that '...commercial functions for the Maui pipeline, including the formation and management of Balancing Gas and Fuel Gas contracts, are managed by a Commercial Operator and Balancing Agent separate from MDL's businesses (other than MDL's management of the Maui Pipeline) and its shareholders' businesses'.

In addition, the Balancing Agent would be added to the list of 'Open Access Personnel' that currently includes the System Operator, Incentives Pool Trustee, Technical Operator and the Commercial Operator. The proposed new MPOC s3.10 restricts the ability of someone paid as Open Access Personnel, and who has access to someone else's confidential information, to trade gas on a market (except for Balancing Gas or Fuel Gas). Open Access Personnel are also subject to the MPOC section 5 Controls of Schedule 4 that govern the handling of Confidential Information.

Discussion on Balancing Agent Role

The MBBCR explains¹² that making the MPOC less specific about the role of the Balancing Agent is consistent with the MPOC's lack of specificity about the functions performed by the Technical Operator, System Operator and Commercial Operator. We do not think this vagueness should be considered as a benefit. There seems to be little purpose in naming the roles if their functions are unclear. However, the proposed added reference to Balancing Gas and Fuel Gas to the MPOC s24.1 confidentiality provisions implies that these would be responsibilities of the Commercial Operator and Balancing Agent.

The MBBCR explains that the Balancing Agent was removed from the list of parties that a Welded Party may have a liability under MPOC s14.6 because a Welded Party cannot incur direct liability to the Balancing Agent when it is acting as agent for and on behalf of MDL. We agree.

The addition of the Balancing Agent to the list of Open Access Personnel is potentially helpful in subjecting all those Personnel to the same confidentiality and ring-fencing requirements. However, since their roles are not well specified it is not clear what is being ring-fenced or kept confidential.

¹² MBBCR s8

Conclusions on Balancing Agent Role

The Balancing Agent's role in the current MPOC is not well described, and the proposed changes would not add any clarity¹³. It appears that the role only has any contractual significance in relation to ring-fencing.

In regard to the Balancing Agent role, we do not think the proposal would have any significant impact on the Gas Act objectives.

However, as explained in the next section, Gas Industry Co is not concerned as the actual balancing functions that MDL is responsible for would be described in much more detail.

4.2 Balancing Actions

Current arrangements

The Balancing Agent has a responsibility to manage Line Pack by buying and selling gas and making claims on the Incentives Pool to cover the cost.

The quantities of Balancing Gas bought and sold are illustrated in Figure 1.

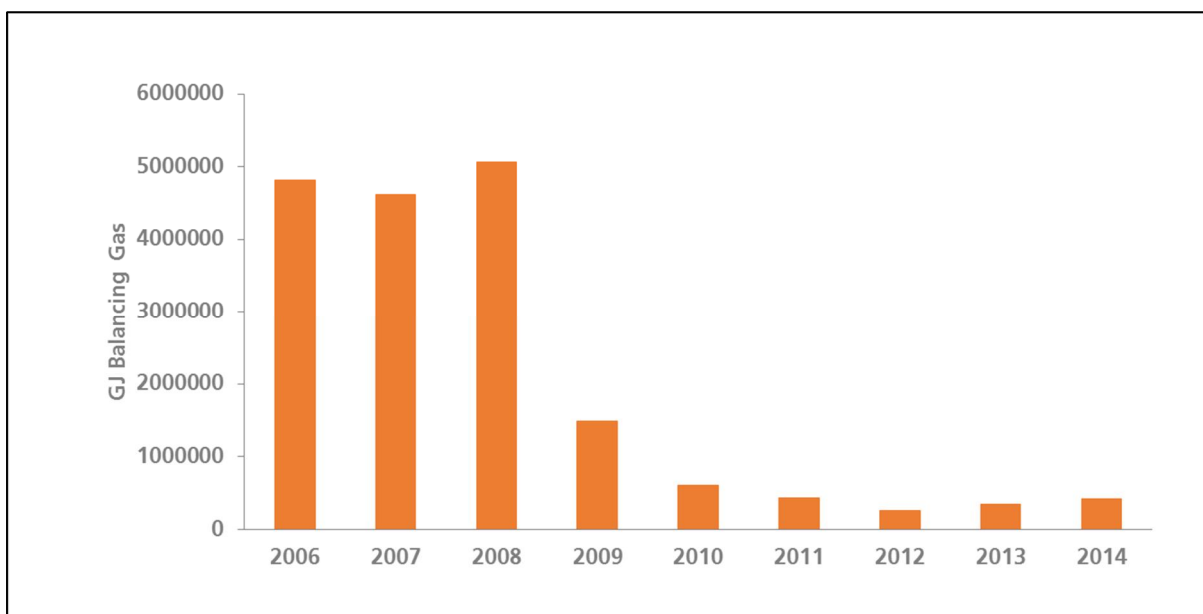


Figure 1 – MDL's Purchases and Sales of Balancing Gas

Proposed arrangements

The proposed arrangements would be much more detailed than the current arrangements and are mostly set out in a new MPOC s3 Balancing Actions, and associated definitions in MPOC s1.1.

¹³ By contrast, although not directly relevant to the MBBCR, the proposed Balancing Principles section of the now defunct B2B Change Request did explain the Balancing Agent's function.

New definitions

The following terms would be defined in MPOC s1.1 and are key to understanding the proposal:

- Line Pack – the total quantity of Gas in the pipeline at any time;
- Balancing Action – a Balancing Gas Call or a Balancing Gas Put;
- Balancing Platform – an electronic trading platform where MDL is counterparty to all trades;
- Balancing Gas Call – a purchase of gas to increase Line Pack (excluding purchases of Cash-Out gas, shipper mismatch gas or fuel gas);
- Balancing Gas Put – a sale of gas to decrease Line Pack (excluding sales of Cash-Out gas or shipper mismatch gas);
- Standard Product – a product for delivery on a specified day traded on a Trading Platform or Balancing Platform that requires Approved Nominations;
- Average Market Price – the energy weighted average price of all trades made on a day, or the day before, on an eligible Trading Platform (MPOC s12.12(a));
- Marginal Buy Price – the highest price of any Balancing Gas Call on a day, bought using a Standard Product or, if higher, the Average Market Price plus an adjustment (MPOC s12.12(c));
- Marginal Sell Price – the lowest price of any Balancing Gas Put on a day or, if lower, the Average Market Price less an adjustment (MPOC s12.12(b)); and
- Trading Platform – an electronic wholesale trading market that is not a Balancing Platform and meets a range eligibility criteria (MPOC s3.4).

Purchase and Sale of Balancing Gas

Proposed MPOC s3 would allow MDL to maintain and manage Line Pack using Standard and non-Standard Products using:

- a Trading Platform;
- a Balancing Platform; or
- a bi-lateral contract.

In essence a Trading Platform would be eligible for use if it offers Shippers an anonymous, non-discriminatory service on publicly available standard terms and conditions that are acceptable to MDL (MPOC s3.4). The market operator would be required to be a Reasonable and Prudent Operator (RPO), to make prudential checks on participants (or allow MDL to select who can trade), identify any participant who disrupts the market, and so on.

For any Balancing Action, MDL would act as an RPO and use the product(s) that achieve the balancing objective in the most cost effective way (MPOC s3.5). Subject to those considerations

MDL's preference would be to use Standard Products ahead of non-Standard Products, Trading Platform products ahead of Balancing Platform products, and Balancing Platform products ahead of bi-lateral contracts.

MDL would also publish Balancing Action related information on the Balancing Gas Information Exchange (MPOC s3.6) including: eligible Trading Platforms, active Balancing Platforms, Marginal Buy and Sell Prices, the price and quantity of all Balancing Actions.

Transparency

MPOC s3.6 would require MDL to publish on the BGIX:

- which Trading Platforms meet the eligibility criteria of MPOC s3.4 (and if they cease to meet those criteria) and which Balancing Platforms are active;
- Marginal Buy and Marginal Sell prices; and
- the price and quantity of all Balancing Actions.

Restrictions on Open Access Personnel trading gas

MPOC s3.10 limits Particular Open Access Personnel¹⁴ to only trade gas for certain reasons.

A Particular Open Access Personnel is someone who:

- receives remuneration from an Open Access Personnel entity; and
- has access in the last two weeks to Confidential Information (unless that information belongs to the entity who pays it).

Particular Open Access Personnel may only trade gas on a Trading Platform or Balancing Platform in order to undertake a Balancing Action (ie to manage Line Pack) or to obtain Fuel Gas.

Discussion on Balancing Actions

Objectives, products and responsibilities

As noted in the MBBCR¹⁵, the proposed new MPOC s3 would set out the objectives for taking Balancing Actions, being:

- to maintain Line Pack and/or pressure (MPOC s3.1(a)), and
- to manage Line Pack, including to support transportation of Approved Nominations (MPOC s3.1(b))¹⁶.

¹⁴ MPOC Schedule 4 Confidentiality Protocols s2.2 defines Open Access Personnel as the System Operator, Incentives Pool Trustee, Balancing Agent, Technical Operator and the Commercial Operator as defined in the MPOC.

¹⁵ MBBCR s4.3

¹⁶ It appears to us that MPOC s3.1(b) is redundant since it is already inherent in MPOC s3.1(a) and MPOC s18.1(a), but this is not material to our analysis.

We believe that MPOC s3.1 is helpful in clarifying the physical objective of a Balancing Action.

Considering how contentious some past balancing actions have been, we also consider that setting out the types of product that MDL can use for a Balancing Action would improve transparency and may reduce the potential for disputes. We also agree with the MBBCR¹⁷ that it would be prudent to make allowance for the use of non-standard products on occasion, and to permit the use of a Trading System, Balancing Platform or bilateral contract¹⁸. Given the thinness of the New Zealand market it would be unwise to rely on only one source of Balancing Gas.

The related MPOC changes proposed (the MPOC s3.4 eligibility criteria for Trading Platforms, the MPOC s1.1 amended definition of RPO to include the Trading Platform operator, the MPOC s1.1 amended definition of Force Majeure Event to exclude failures of Trading Platform or Balancing Platform participants to perform their roles) all seem reasonable and have not been objected to in submissions.

In general, we believe the added transparency about the purpose of Balancing Actions, the products that can be used and associated responsibilities would all be improvements.

Sourcing balancing gas on a more liquid market

Some submitters¹⁹ note that currently all pipeline users have an equal opportunity to correct their positions but not an equal opportunity to mitigate Cash-Out costs through the BGX, because they do not have access to the BGX. If MDL is to source Balancing Gas from the emsTradepoint market, then all Parties would have access to that market and an added tool to aid self-balancing.

Although nothing in the MBBCR specifically requires MDL to use another market in favour of the BGX, the proposed new MPOC s3.5(c) states that MDL will use the product it considers will meet the balancing objective in the most cost effective manner. The MBBCR also states²⁰ that:

Section 3.5 covers one of the core concepts in this application: the selection of products used by MDL for Balancing Actions. Subject to suitability, availability and cost effectiveness considerations, MDL will give preference to use of Standard Products and to use of products listed on an eligible Trading Platform.

The benefit of sourcing Balancing Gas on a more liquid market is expected to be significant. emsTradepoint²¹ presents an analysis to demonstrate that since the inception of its market in 2013, MDL has foregone benefits of over \$1m through using the BGX rather than the emsTradepoint market. This analysis was not challenged in cross-submissions. In fact submitters generally recognise that there will be a benefit from sourcing gas on a more liquid market, but many consider that that benefit is achievable with or without the MBBCR. We discuss this next.

¹⁷ MBBCR s4.4(b)

¹⁸ MBBCR s4.5

¹⁹ Eg Contact cross-submission p2, Vector submission paragraph 19, Nova submission p1

²⁰ MBBCR s4.8

²¹ emsTradepoint submission p5

The MBBCR offers the quickest, but not the only, route to improved Balancing Gas trading

Some submitters²² suggest that while MDL has linked use of the emsTradepoint market with implementation of the MBBCR, this is not a consideration that should be relevant to Gas Industry Co's analysis. They argue that if the MBBCR did not progress, MDL could still choose to allow the emsTradepoint market to operate on the Maui pipeline and use that market in favour of the BGX. We agree that this is possible, perhaps even likely. The current inefficiency of sourcing gas from a market that few users have access to is not sustainable. But the inefficiencies of the ILON system are not sustainable either, yet they have been in place for a decade. We believe that the MBBCR offers the quickest route to ensuring that Balancing Gas is traded on a liquid market, but we acknowledge that it is not the only way of achieving that outcome.

Conclusion on Balancing Actions

From the above, we consider that the proposed addition of a Balancing Actions section to the MPOC does provide more transparency of:

- the functions of Balancing Actions;
- the sources of Balancing Gas; and
- the factors relevant to MDL's choice of where to source Balancing Gas.

We also believe that all pipeline users will benefit from MDL obtaining balancing gas from a more liquid market (except for the few who currently have privileged access to the BGX and benefit from its wide price spreads). However, while MDL presents these benefits as only being available if the MBBCR is implemented, we do not agree. If the MBBCR is not implemented then we believe that the inefficiencies inherent in the ILON system and Balancing Gas procurement would eventually be addressed, by regulation or otherwise, but this would take time to achieve.

In regard to Balancing Actions, we think the proposal would have significant positive impact on the Gas Act objectives. The greater prescription and transparency around how MDL will manage Balancing Actions builds confidence the risks relating to security of supply are being properly and efficiently managed. Also, while the MBBCR is not the only route to obtaining Balancing Gas on a more liquid market, it is likely to be the quickest. So improvements to competitive market arrangements, sustained downward pressure on prices and removing barriers to competition (for Balancing Gas supply) will come sooner.

²² Eg Contact cross-submission p2, Vector submission paragraph 21, MGUG submission paragraph 9

4.3 Cash-Outs

Current arrangements

The current arrangements require each Welded Party to use reasonable endeavours to manage gas flow so that Running Operational Imbalance (ROI) tends towards zero over a reasonable period of time (MPOC s12.9).

MDL acts as an RPO to maintain total Line Pack sufficient to deliver Approved Nominations and to provide flexibility up to the amount of posted Daily Operational Imbalance Limits (DOIL) and Peaking and Contingency Volumes (MPOC s18.1).

Where a Welded Party's ROI exceeds its ROIL at a Welded Point, MDL may, at its sole discretion, give an ILON to that Welded Party (MPOC s12.10).

After the ILON notice period MDL may, at its sole discretion, cash-out some or all of any remaining excess ROI (MPOC s12.11(a)), regardless of whether or not it has taken any balancing actions. The Cash-Out price is the Mismatch Price which is set at least one-day ahead, and is derived using a methodology set by MDL. Current policy is to base prices on week-day prices for which 10 TJ of Put/Call gas is available.

ILONs do not apply to Notional Welded Points which already effectively have a daily Cash-Out arrangement (at MDL's discretion) (MPOC s12.11(b)).

A Welded Party may be unable to take its Scheduled Quantity or may be curtailed because of another Welded Party being outside tolerance. In this case, the Welded Party may make a claim on the Incentives Pool at the daily incentive price (MPOC s12.16).

The Balancing Agent may make a claim on the Incentives Pool, within limits, to meet the costs of buying Balancing Gas (MPOC s14.4).

Welded Parties indemnify MDL for direct costs incurred by the Balancing Agent obtaining gas supplies outside of its usual supply arrangements to replace Welded Party Accumulated Excess Operating Imbalance (AEOI) (MPOC s12.13(c)).

Where a Welded Party is interrupted because, for example, MDL is performing maintenance, or a Force Majeure Event occurs (MPOC s15.1 and s15.2), and Contingency Volume is used, the user is responsible for correcting any resulting imbalance or mismatch 'as soon as reasonably practicable' (MPOC s15.9).

Gas Industry Co has previously reported²³ on the monthly balancing costs that have been allocated between Parties with Incentives Pool Debits and socialised through the tariff. For convenience we reproduce that chart as Figure 2. We also provide an update of the data for the last 3 years in Figure 3. Notable differences are:

²³ Gas Industry Co's February 2012 Draft Recommendation on the 13 October 2011 MPOC Change Request (B2B)

- the residual balancing cost recovered through the Incentives Pool has significantly reduced;
and
- the proportion of cost being socialised has significantly increased.

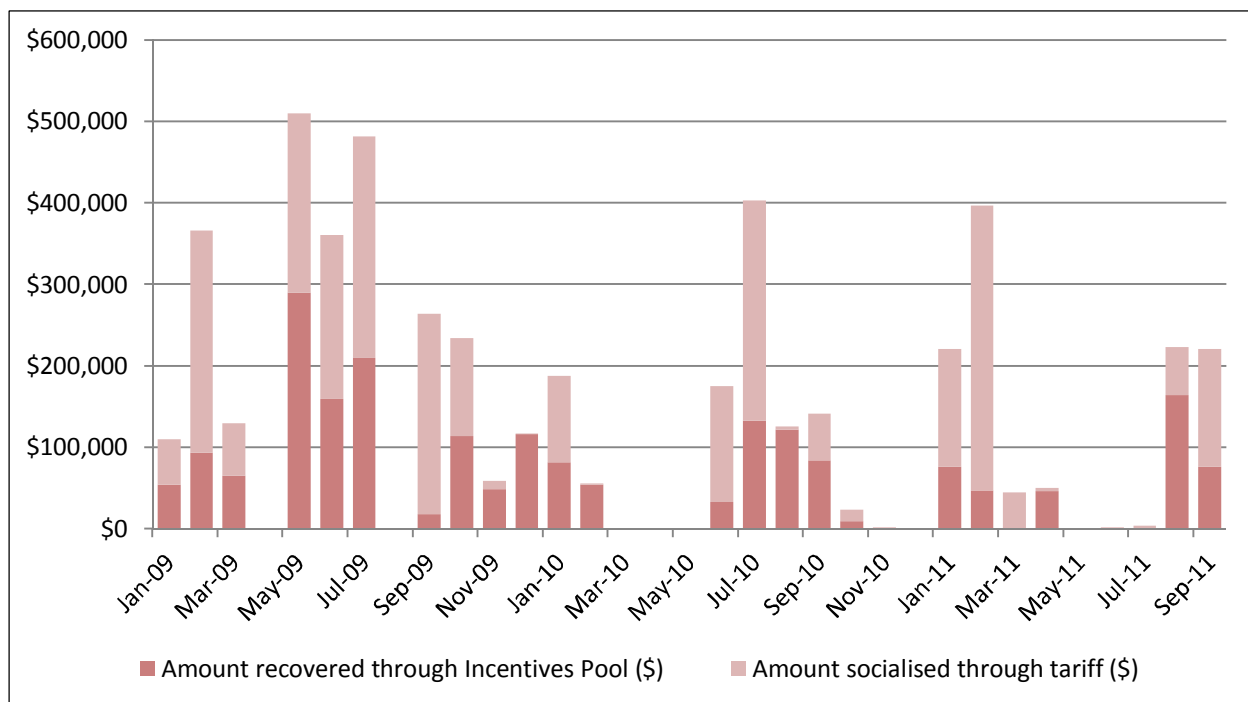


Figure 2 – Allocation of ILON Cash-Outs – previously reported

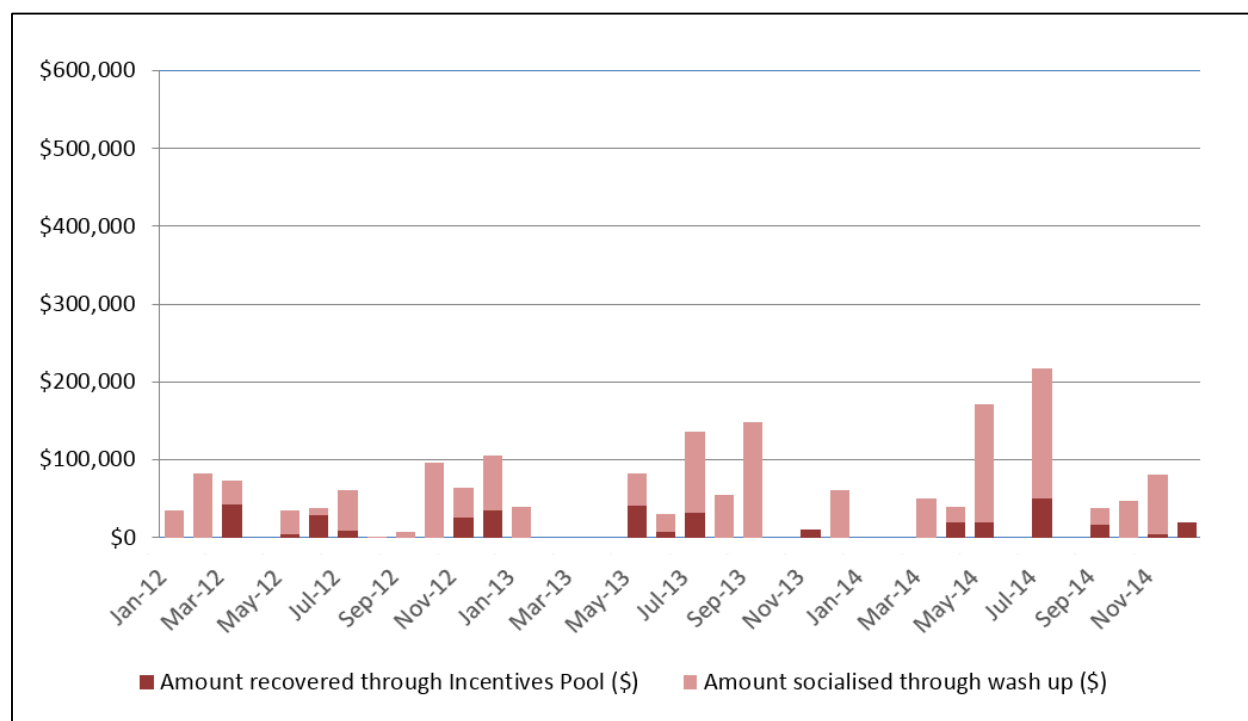


Figure 3 - Allocation of ILON cash-outs - last 3 years

Figure 4 illustrates the total value of ILONs issued in 2014 (top line), the AEOI a day later (second line), two days later (third line), and the quantities finally cashed-out (fourth line). Points to note are:

- most ILON's issued and cashed-out relate to Transmission Pipeline Welded Points (TPWPs); and
- only a small fraction (<10%) of ILON volumes are cashed-out, ie there is a strong market response to the issuing of ILONs.

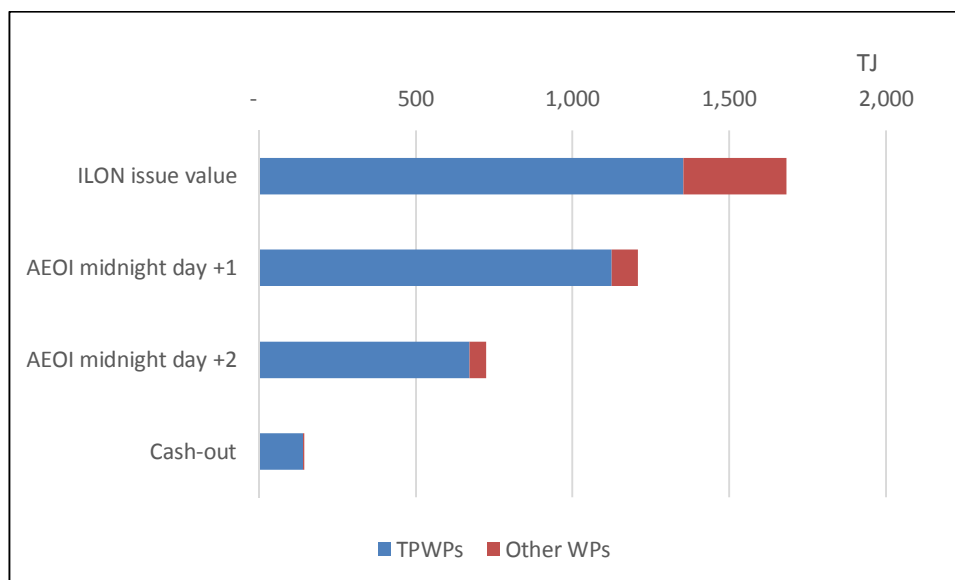


Figure 4 - ILONs and Cash-Outs for 2014 calendar year

We conclude that the ILON process involves weak price signals (since a large proportion of balancing costs are socialised), and that a high proportion of imbalance can be managed by pipeline users (since only a small proportion of ILON quantities are cashed-out).

Proposed arrangements

The central proposal of the MBBCR is the replacement of the current arrangements for dealing with the Accumulated Excess Operational Imbalance (AEOI) of Welded Parties (the so-called ILON process) with a new daily Cash-Out regime. In particular, ILONs would no longer be issued, and Parties with AEOI would be automatically cashed-out at the end of each day (regardless of whether the Balancing Agent has taken a Balancing Action or not)²⁴.

Cash-Out Quantity and Cash-Out Price definitions would be amended accordingly (MPOC s1.1).

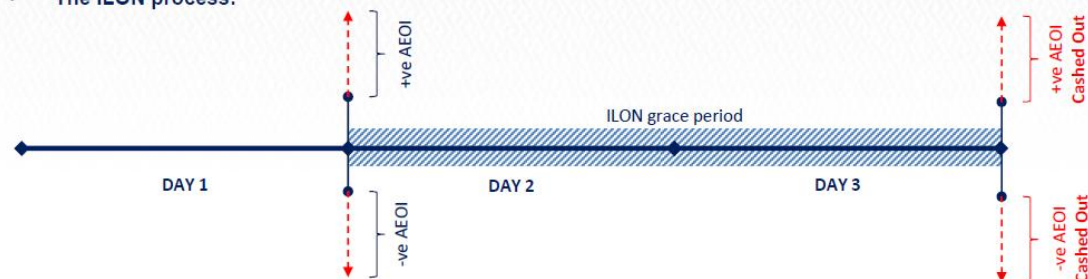
Cash-Out Quantities

Positive/negative AEOI at Physical Welded Points located at a Large Station and at Notional Welded Points would be deemed to be cashed-out at the end of each day (MPOC s12.10 and s12.11). Cash-Outs reduce imbalances down to a tolerance level. We find the illustration of the proposed change provided by emsTradepoint in its November 2014 submission useful and have reproduced it as Figure 5.

²⁴ For completeness we note that there would also be a Cash-Out where if an Interconnection Agreement (ICA) is terminated with an outstanding imbalance (after its AEOI is cashed-out). This would be at the Average Market Price on the termination date.

Moving from ILONs to Daily Cash-Outs

- The ILON process:



- The Daily Cash-Out process:



- The ILON process will be replaced by a 24 hour delivery service
- All Accumulated Excess Operational Imbalance ("AEOL") (Operational Imbalance above tolerance) will be automatically cashed out at the end of each day

www.emstradepoint.co.nz

Figure 5 - Extract from emsTradePoint description of proposed Cash-Out arrangement

Cash-Out Prices

Cash-Outs would be at a Cash-Out Sell Price (MPOC s12.12(h)) or a Cash-Out Buy Price (MPOC s12.12(i)).

Cash-Out Sell Price = Marginal Sell Price
 – Cash-Out Transmission Price
 – Cash-Out Trading Fee Price

 But cannot be less than \$0.01/GJ

Cash-Out Buy Price = Marginal Buy Price
 + Cash-Out Transmission Price
 + Cash-Out Trading Fee Price

Where:

The Marginal Sell Price would be the lower of the lowest Balancing Gas Put on a day or the Average Market Price less an adjustment (MPOC s12.12(b)).

The Marginal Buy Price would be the higher of the highest Balancing Gas Call on a day or the Average Market Price plus an adjustment (MPOC s12.12(c)).

The Average Market Price would be an energy-weighted price of all Standard Product trades for delivery on the relevant Day (made on the Day or on the previous Day) (MPOC s12.12(a)). If trading is "... not sufficiently available or reliable for that Day" (eg below some volume determined by MDL) then a default rule for calculating the Average Market Price will apply. (MPOC s12.12(f)). The default rule would be posted on the BGIX from time to time (MPOC s4.4).

The adjustment would be a percentage of the Sell or Buy Price (and could be different for each) (MPOC s12.12(d)), would be posted on the BGIX at least a Day before the Cash-Out (MPOC s4.4), and would not exceed 10% (MPOC s12.12(e)).

The Cash-Out Transmission Price represents payment for the avoided costs of gas transmission.

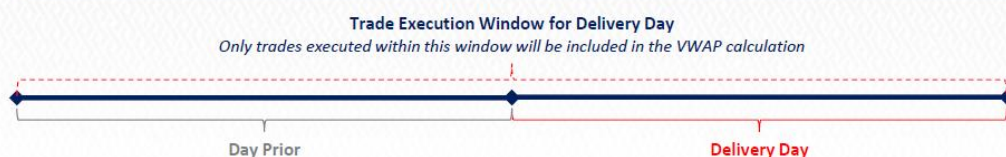
The Cash-Out Trading Fee Price is the average of all trading fees on eligible Trading Platforms on the Day prior to the Cash-Out (MPOC s1.1). The adjustment is to cover fees that could be incurred by MDL or avoided by Welded Parties (because they were cashed-out rather than correcting their imbalance).

In describing these two prices, the MBBCR²⁵ says that '[j]ust as the Cash-Out Transmission Price represents an "avoided cost of transmission" for Welded Points that are cashed-out, so too does the Cash-Out Trading Fee Price represent an "avoided trading fee".'

Again, we find the illustration of the proposed change provided by emsTradepoint in its November 2014 submission useful and have reproduced it as Figure 6.

²⁵ MBBCR s5 paragraph 182

The Daily Cash-Out Mechanism: Prices



Cash-Out Prices:

- **+ve Cash-Outs, the lower of:**
 - Volume Weighted Average Price of trades on the Trading Platform[^] for delivery on the relevant day and executed on that day or the day before (see above) **minus A**; OR
 - The lowest price paid for Put balancing gas (if sold) **minus B**.
- **-ve Cash-Outs, the higher of:**
 - Volume Weighted Average Price of trades on the Trading Platform[^] for delivery on the relevant day and executed on that day or the day before (see above) **plus A**; OR
 - The highest price paid for Call balancing gas (if purchased) **plus B**.

$$A = [0-10\%]^* \text{ of VWAP} + \text{Cash-Out Transmission Price} + \text{Cash-Out Trading Fee Price}$$

$$B = \text{Cash-Out Transmission Price} + \text{Cash-Out Trading Fee Price}$$

[^]emsTradepoint will be considered a 'Trading Platform' under the MPOC, so will set this price

*The percentage is set unilaterally by MDL

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Figure 6 - Extract from emsTradepoint description of proposed daily Cash-Out price

Cash-out transparency

The proposed MPOC s4.4 provides for publication on the BGX of Cash-Out related information, including:

- the default rule for determining Average Market Price;
- the value of the adjustment percentage (A in Figure 6 above) for calculating marginal prices;
- the Cash-Out Trading Fee Price; and
- the Cash-Out Transactions.

Cash-Out related definitions

The proposed additions to the MPOC s1.1 would include new definitions for:

- Average Market Price;
- Marginal Buy Price;
- Marginal Sell Price;
- Cash-Out Buy Price; and

- Cash-Out Sell Price.

The definition for AEOI would be modified to improve readability and to make it explicit that it can be zero.

Discussion of Cash-Out arrangements

Many elements are unchanged

Many elements of the pipeline balancing arrangements would remain unchanged under the MBBCR. A Welded Party would still be required to use reasonable endeavours to tend ROI towards zero over a reasonable period of time (MPOC s12.9). Also, if it fails to do so, it would be able to park or borrow gas within its ROIL at no cost²⁶.

MDL's obligation to act as a RPO to maintain total Line Pack sufficient to deliver Approved Nominations (MPOC s18.1a) and provide flexibility for DOILs, Peaking Limits, and Contingency volume (MPOC s18.1b) would also be unchanged.

The proposed change would also not affect the arrangements for Small Stations. These would still be required to trade all ROI to Large Station Welded Point each month (MPOC s12.5).

The frequency, volume and price of Cash-Outs would change

The main differences are in the trigger for Cash-Outs and the price of Cash-Outs. The proposal is for daily Cash-Outs to occur automatically at both Notional Welded Points and Physical Welded Points at Large Stations. (The current MPOC already provides for the daily cash-out of Notional Welded Points, but at other points cash-outs can only occur on the expiry of an ILON, and all cash-outs are at MDL's discretion.)

Cash-Out prices would also change, moving from the current practice of looking back to a week-day when significant volumes were offered on the BGX to a regime based on the prices of Standard Products traded on a Trading Platform (such as the emsTradepoint) or a Balancing Platform (the BGX).

As a number of submitters have pointed out, the proposed move from infrequent ILON Cash-Outs to daily Cash-Outs would mean that (unless pipeline users improve their primary balancing significantly) the volume of Cash-Out transactions will increase dramatically.

However, since the arrangements provide an incentive for primary balancing that is more constant and predictable than the current incentive, we believe that primary balancing will improve. CHH²⁷ considers that the MBBCR will disconnect pipeline balancing charges from balancing gas costs. We agree that under the proposed arrangements there would be no one-for-one correspondence between Cash-Outs and Balancing Actions (as there would have been under the B2BCR), but that is also true of current arrangements. However, Cash-Outs under the

²⁶ In the MBBCR, MDL notes that Cash-Out to zero is prescribed in the EU arrangements. MDL suggests that experience should first be gained by only cashing-out to tolerance.

²⁷ CHH submission p2

proposed arrangements would be at prices referenced to a more liquid market, so pipeline users will have better price signals on which to base their balancing decisions.

Over-reaction to Cash-Outs

A few submitters²⁸ think that implementation of the MBBCR would cause Parties to over-react to avoid Cash-Outs, thereby increasing the need for balancing actions. But we are not persuaded. Cash-Outs occur for positive and negative imbalance so the incentive should be to stay within tolerance and not to over-correct. Even Vector, which does not believe that the proposal will improve efficiency unless introduced in a collaborative and co-ordinated way, considers that the swings in pressure as Shippers try to over-compensate to avoid ILON cash-outs would likely reduce²⁹.

The distribution of balancing related costs between users would likely change

As with current arrangements, we expect that MDL's costs will be recovered from pipeline users. In general, cost savings that MDL might achieve as a result of implementing the MBBCR would, over time, be passed to pipeline users because MDL's pipeline business is subject to economic regulation. For 'recoverable costs', this occurs through an annual wash-up as illustrated in Figure 7. For other cost savings the benefit will only be passed to pipeline users in the next regulatory period after prices have been re-set³⁰.

²⁸ Eg NZ Steel p3

²⁹ Vector cross-submission paragraph 4(d)

³⁰ So MLD may make a short term profit from cost savings, as is intended under the 'incentive regulation' paradigm.

End of Year Wash-Up

- On an annual basis, the TSO calculates the overall recovery of balancing gas costs/incomes and cash-out costs/incomes:

+ Monies received from Welded Parties for -ve AEOI
+ Monies received from consumers of Put Balancing Gas
+ Monies received from Peaking Charge
- Monies paid to Welded Parties for +ve AEOI
- Monies paid to suppliers of Call Balancing Gas

Net = Overall Recovery

If:

- Overall Recovery > 0:** The TSO redistributes this to users by lowering the tariff in the following year.
- Overall Recovery < 0:** The TSO shares the cost evenly with all users by increasing the tariff in the following year.

www.emstradepoint.co.nz

Figure 7 - Extract from emsTradepoint description of proposed end-of-year wash-up

Under the current balancing arrangements a pipeline user can cause (wholly or in part) a balancing action to be taken, but avoid the cost of that action. Where a Welded Party's ROI exceeds tolerance levels, MDL may issue an ILON to notify the Welded Party to return, or take away, the excess gas within a certain time. ILONs are issued on the day following an excess imbalance and generally allow a further day to correct the position (as illustrated in Figure 5). Before this notice period expires, the Welded Party can correct its imbalance and avoid paying MDL the cost of any balancing action it may have caused.

The misallocation of costs in the above situation can be made worse if, in correcting its imbalance on a pipeline that the Balancing Agent has already balanced, the Welded Party causes the Balancing Agent to take a further balancing action in the opposite direction³¹. Clearly these arrangements are inefficient since they allow a Welded Party to capture private benefits by using flexibility provided by the ILON process that create costs which are substantially carried by other system users.

If the MBBCR was implemented, we would expect that users who may previously have been able to use the ILON process as a source of cheap flexibility (at the expense of others), would no longer be able to do so. Users who are not willing or able to manage their balance positions within tolerance would be forced to sell any surplus gas they 'leave in the pipeline' or buy any shortfall of gas they 'draw from the pipeline'. These trades would reference a market price.

³¹ An example of this is provided in the OMV submission p3

That price would be referenced to the price of balancing gas traded on the market or, if no balancing gas was traded, it would reference the average market price including an 'adjustment factor' of up to 10%. The MBBCR³² says that the '...purpose of the adjustment is to incentivise primary balancing.' We believe that it should be an effective incentive.

Trustpower captures the sentiment of a number of submissions when it says that '...it is not reasonable to impose a large cost onto a retailer, when there is no evidence that they have caused a cost to the industry through negligent behaviour'³³. We do not think that the MBBCR would impose large costs. It would provide Cash-Outs at market-related prices for Parties with excess imbalance. We think that this would be reasonable (regardless of whether the imbalance is caused by negligent behaviour or not). We also think that it is unreasonable to expect that other pipeline users should meet the cost of providing flexibility to users with excess imbalance, as they do at present.

As Nova observes³⁴:

MBB in effect results in an increase in balancing associated cost with some users and a reduction in transmission related charges through the wash-up process. The question then is; is this efficient or distortionary? Is there a net public benefit from this reweighting of balancing costs/transmission costs?

Our preliminary conclusion is that MBB would result in a more efficient distribution of costs, directing them towards users who make more use of pipeline flexibility. And from the Covec Cost-Benefit analysis it appears that there would be a net public benefit.

Reasonableness of the 10% adjustment factor

Some submitters³⁵ consider that the incentives inherent in the MBBCR are not particularly strong. Others³⁶ consider the adjustment factor is a penalty and therefore not allowed. Some also suggest the adjustment factor places upward pressure on prices and does not signal the full costs of transport.

We agree with Covec³⁷ that by signalling that there is a cost in providing a park and loan service, the adjustment factor would provide an incentive to improve primary balancing. We consider that 10% (upper limit) is a reasonable adjustment to average market prices and is sufficient to encourage good balancing behaviour without being needlessly punitive. MDL has pointed out that it is the same limit adopted in the European Code (even though there is a wide variation of the percentages currently applied in each State). Also in the US it is not uncommon to have scheduling penalties that ramp up to 50% of the delivered gas price for daily imbalances of over 20%.

³² MDL submission s5 paragraph 182

³³ Trustpower cross-submission s4.2

³⁴ Nova cross-submission p2

³⁵ Vector submission paragraph 28

³⁶ Contact cross-submission p3, Methanex submission p1

³⁷ Appendix B Cost-Benefit Analysis section 3.1.5

However, as discussed in section 2 above, if Parties consider that the adjustment factor as implemented in particular cases amounts to an inappropriate penalty, they could raise a dispute under the MPOC, on the basis of unreasonableness or MDL's failure to act as an RPO.

Whether the MBBCR would increase prices to some users is hard to gauge. We agree with Covec³⁸ that MDL's total balancing costs should decrease, but there will be a redistribution of those costs, so it is possible that those who rely on Line Pack flexibility may experience an increase in cost, as many submitters expect³⁹. However that cost will be a better reflection of the total cost of service to those users, including Line Pack flexibility (which could be considered as a 'park and loan' service).

We expect primary balancing would become more efficient

Many submitters⁴⁰ suggest that pipeline users have limited tools available to improve their balancing, so even when they are incentivised to do so, the claimed benefits from improved balancing will not materialise.

The incentives to improve balancing performance come from two sources:

- the loss of the ILON 'grace period' that allows pipeline users to operate with excess imbalance for several days with impunity; and
- the difference between Cash-Out prices⁴¹ and the price at which a user could balance its own position.

We believe users respond to incentives. It is true that we can't be sure of the strength of that response until it is tested in practice, but a significant proportion of demand downstream of TPWPs already has telemetered time-of-use metering and a significant proportion of the rest is time-of-use but without telemetry. Figure 8 shows that over 70% of demand downstream of TPWPs is available for interrogation via telemetry. If it is worth their while to do so, users could pay more attention to their telemetered time-of-use sites and possibly install telemetry on time-of-use sites that do not have it. Of course there is cost involved in these options and it will only be worth making improvements where the anticipated benefit exceeds the cost, but some improvements will be justified (and a few submitters⁴² acknowledge that improvements are possible).

³⁸ Appendix B Cost-Benefit Analysis section 3.1.2

³⁹ Eg Vector cross-submission s4

⁴⁰ Eg Vector submission paragraph 28, NZ Steel submission p4

⁴¹ Remembering that Cash-Out Prices would be determined by s12.12. Generally they would be the marginal price of any balancing action, or the average price plus the Price Adjustment.

⁴² Eg Vector submission paragraph 31

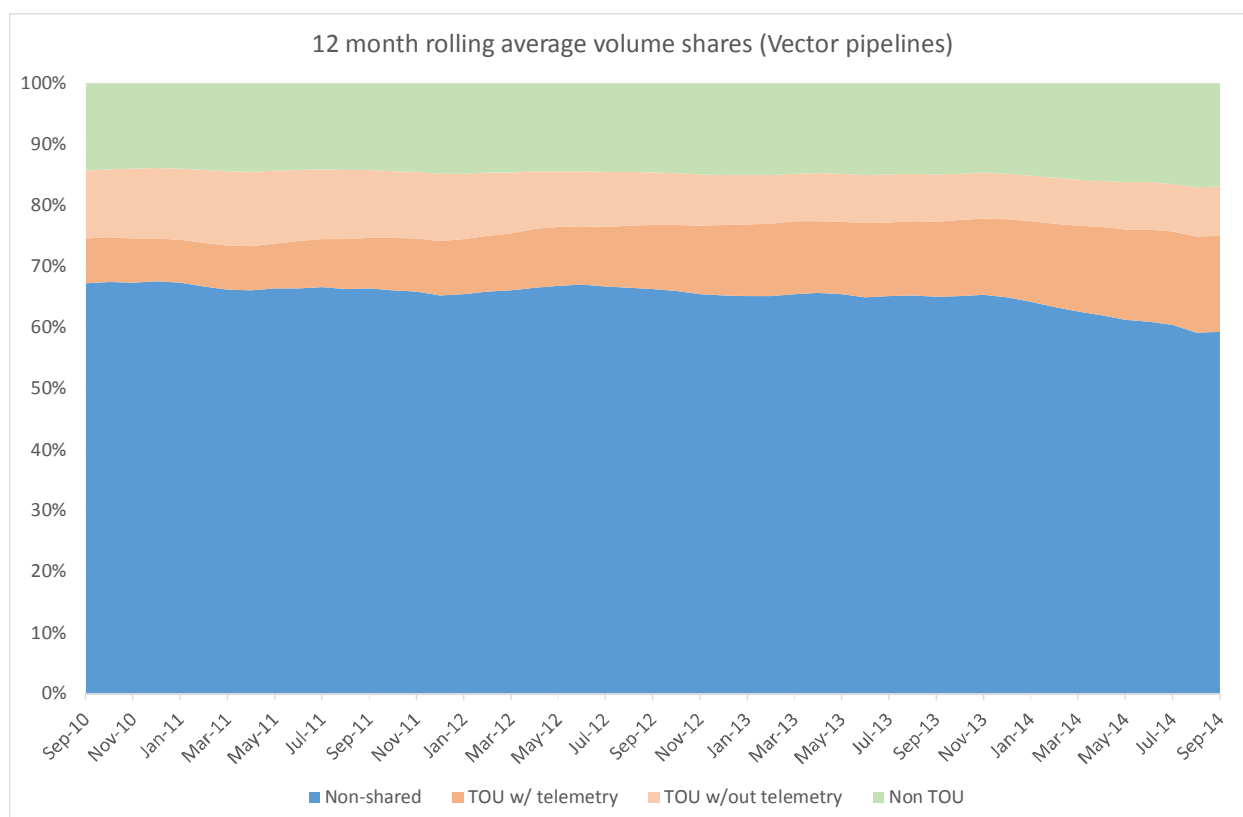


Figure 8 - Categories of downstream demand

The Covec Cost-Benefit Analysis attached as Appendix B discusses these matters further and we agree with Covec⁴³ that primary balancing performance will only improve materially where shippers have both the incentive and ability to better manage their positions. Covec notes that while it seems generally agreed that MBB will strengthen incentives, a number of parties have argued that shippers have limited ability to adjust their positions on a daily basis. However, it notes that of the 525 ILONs issued in 2014 only 38 (7.2%) were cashed-out and most were corrected on the first day. This suggests a reasonably strong ability to correct positions.

Improvements are also possible in the speed of reconciliation, and the introduction of D+1 allocations. It is beyond MDL's power to provide these improvements, but MDL and other submitters are right to expect that the incentives provided by the MBBCR should facilitate the development of these options. Of course, they would only be pursued if it was cost effective to do so, but the MBBCR will clarify that the alternative (using pipeline flexibility) is not costless.

High-pressure (and low-pressure) situations can still occur

We would not expect that implementing the MBBCR would improve primary balancing at all times. There will be times when market changes cannot be reflected in nominations quickly enough or when the incentives are not strong enough. For example, Vector notes⁴⁴ that market conditions can change because of sudden cold snaps, generators not being dispatched when expected, or production issues. And MDL notes⁴⁵ that extraneous factors such as take-or-pay obligations can influence outcomes.

⁴³ Appendix B Cost-Benefit Analysis section 2.2.1

⁴⁴ Vector cross-submission paragraph 19

⁴⁵ MDL submission paragraph 52

We agree with submitters⁴⁶ who are not convinced that the proposal would necessarily improve all high-pressure situations. The MBBCR would not be a panacea for all balancing issues, but our over-riding view is that, as emsTradepoint argues⁴⁷, daily Cash-Out would not permit pipeline users to accumulate imbalance in the pipeline. So in general we expect that there would be fewer excursions from the Target Taranaki Pressure envelope of 42 to 48 bar.

We acknowledge concerns about MDL discretion

A Cash-Out should ideally occur at an efficient market price. However, the market may not always be efficient, for example when there is not sufficient liquidity. One approach to dealing with such circumstances is to use the market price regardless, accepting that it will be inefficient on occasion. Another approach is to look for indicators of inefficiency and when they occur to replace the market price with a proxy. The MBBCR proposes to take the latter approach⁴⁸. It does so by giving MDL discretion to set a default rule for calculating the Average Market Price where:

- there is no eligible Trading Platform available; or
- traded volumes are less than MDL specifies.

Submitters⁴⁹ express concern that there are no parameters around this discretion (other than MDL's RPO obligation) and no overriding requirement for prices to reflect those on a liquid market⁵⁰. However, while submissions may dispute whether the remaining discretion for MDL is the best arrangement, we believe that in a small market thin trading conditions will arise on occasion, so it is prudent to allow some discretion over when to trade Balancing Gas and by what means. We consider that the exercise of that discretion would be the exception, and the norm would be trading on a Trading Platform with acceptable liquidity. There is general recognition that increased access to a Trading Platform such as emsTradepoint, and use of such a platform for Balancing Gas transactions, would be more efficient.

In addition, MPOC Parties also have the ability to raise MDL's failure to act as an RPO as a dispute under the MPOC, which should also provide some assurance in relation to MDL's discretion.

There are also aspects of the MBBCR that would tend to reduce MDL's discretion. We think that OMV makes a valid point when it argues⁵¹ that the MBBCR would allow MDL to exercise significantly less discretion than it currently exercises when taking balancing actions, thereby ensuring more transparency and predictability.

We acknowledge concerns that Cash-Outs do not only occur when there is a balancing action

As explained in section 1.3 above, MDL no longer intends to implement B2B arrangements (without the MBBCR) so those arrangements on their own are not relevant to this analysis.

⁴⁶ Eg Vector submission paragraph 36 and 38, Genesis submission p1, OMV cross-submission p3

⁴⁷ emsTradepoint cross-submission p19

⁴⁸ MBB MPOC s12.12(f)

⁴⁹ Eg Vector submission paragraph 26, Nova submission p2

⁵⁰ Eg Vector submission paragraph 27

⁵¹ OMV cross-submission p3

However, the complaint that Cash-Outs would occur under the MBBCR proposal when there is no underlying balancing action is a common feature of submissions and calls for comment.

The concept of B2B was that pipeline users should be responsible for the consequences of their behaviour. Where a balancing action is taken, users with contributing imbalance outside of the permitted tolerance would be cashed-out up to the amount of the balancing action. This gave users the free use of all pipeline flexibility, both the flexibility inherent in Line Pack and the flexibility arising from user diversity (ie some users having positive imbalance while others have offsetting negative imbalance).

Under a the proposed daily Cash-Out regime users only access 'free' flexibility when they have imbalance less than tolerance. The tolerances (ROILs) are reduced to 1% of Scheduled Quantity (SQ) or 1TJ (whichever is higher). These are relatively small and unlikely to significantly blunt the price signals created by the proposed daily Cash-Out arrangements.

We consider that Line Pack flexibility has economic value and economic cost. The cost arises from managing the pipeline to accommodate flexibility, thereby dedicating pipeline capacity to flexibility that could otherwise be used to transport gas. This cost should be signalled to pipeline users. This would allow users to make more economically rational decisions, including deciding when to invest in better information systems, and whether alternative sources of flexibility should be used. Pricing Cash-Out at marginal cost (or average cost plus an adjustment factor), including transport and trading fees, goes some way to signalling these flexibility costs.

Conclusion on Cash-Out arrangements

From the above, we would expect the pipeline users that may face a higher proportion of balancing costs if MBBCR were implemented would be:

- pipeline users who could manage their balance positions better, but instead choose to benefit from cheap flexibility enabled by the ILON regime (that permits them to avoid responsibility for costs they have caused, and allows those costs to be socialised among other pipeline users); and
- pipeline users who cannot manage their balance positions any better, and would be faced with increased flexibility costs⁵².

From Figure 4 it is clear that Vector, as TPWP, currently accounts for the lion's share of ILONs and Cash-Outs (more detail can be seen in the duration curves reproduced in Section 2.1.2 of the Appendix B Cost-Benefit Analysis). We therefore expect that Vector will be most affected by the Cash-Out element of the proposal, as a number of submitters⁵³ note.

The poor targeting of cost inherent in the ILON process has been a key concern to Gas Industry Co throughout its review of balancing arrangements (culminating in the October 2009, Statement of Proposal - Transmission Pipeline Balancing). It leads to inefficient behaviour

⁵² By 'flexibility costs' we mean the costs that arise from not flowing gas within tolerance. These costs are the difference in price between automatic Cash-Outs, and whatever alternatives for buying and selling the quantity of gas that would have been available if the Cash-Out could have been avoided.

⁵³ Eg Vector cross-submission p3, OMV submission p3, Contact cross-submission p2

affecting not only balancing but the other aspects of the industry including gas procurement arrangements, gas sale arrangements, pipeline management practices, and investments in equipment and systems (section 2.1.3 of the Appendix B Cost-Benefit Analysis discusses the inefficiency inherent in the current arrangements in more detail).

The proposal would result in a Welded Party who parks or borrows gas beyond the ROIL limit having to sell or buy the gas through automatic Cash-Out. The sell or buy prices would include transport and trading fees and would be expected to provide an incentive for pipeline users to balance their own positions rather than being cashed-out. However, where Cash-Outs occur they should be closer to a market price than the current Cash-Out prices, because the prices would be referenced to a market offering greater user participation than the BGX.

There is very little opportunity for MDL to profit from balancing activities⁵⁴, so pipeline users should mostly be concerned that balancing costs are efficient and that cross-subsidies are minimised. We consider that both these conditions would be met since the proposal involves:

- obtaining Balancing Gas from a more liquid market, considerably reducing the economic rents currently captured by the small group of users with access to the BGX (as discussed in section 3.2 above); and
- directing balancing costs towards Parties who have excess imbalance (ie who use pipeline flexibility).

In regard to Cash-Outs, we think the proposal would have significant positive impacts on the Gas Act objectives. The better directing of costs towards pipeline users who make more use of pipeline flexibility should provide an incentive for investment (in equipment, processes and information systems) and generally improve the efficiency of the market structure. Also, the removal of the ILON 'grace' period should allow for more accurate, efficient and timely reconciliation of upstream gas quantities.

4.4 Peaking

Current arrangements

The current arrangements require each Welded Party to act as an RPO to flow gas within its Peaking Limits (Table 1), unless it has MDL consent to exceed these for operational reasons (MPOC s13.2). Exceeding the Peaking Limit creates an exposure to an Incentives Pool Claim (MPOC s13.3). There is relief for Force Majeure Events, contingent events, and maintenance (MPOC s13.4).

⁵⁴ As illustrated in Figure 9, the costs of Balancing Actions and Cash-Outs are balanced by a tariff adjustment in the subsequent year, however benefits from the reduced operation of compressors will be captured by MDL until the next price control review.

Table 1 – Current Schedule 7 Peaking Limits

Welded Point (Large Stations only)	Peaking Tolerance (% of Hourly Scheduled Quantity (HSQ))	Peaking Limit (GJ)
Oaonui Meter Station	150%	0
Tikorangi Mixing Station	150%	0
Bertrand Road	125%	3,500
Frankley Road	125%	3,500
New Plymouth Power Station	125%	3,000
Huntly Power Station	125%	4,000
Rotowaro Pokuru Pirongia (combined)	125%	10,000

Proposed arrangements

The proposed arrangements extend the MPOC Schedule 7 Peaking Limits coverage from Large Stations to all stations (Table 2). In addition it is proposed to reduce the absolute GJ peaking limits at some of the Large Stations (for example the Frankley Road peaking limit reduces from 3,500GJ/hour to 3,000GJ/hour). Also the previous bundling of Rotowaro Pokuru, and Pirongia TPWPs would be discontinued and individual Peaking Tolerances would apply for these stations.

Table 2 – Proposed Schedule 7 Peaking Limits

Welded Point (Large Stations only)	Peaking Tolerance (% of HSQ)	Peaking Limit (GJ)	Change
Oaonui Meter Station	150%	0	Same
Frankley Road	125%	3,000	Same Peaking tolerance, Peaking Limit reduced by 500GJ
Bertrand Road (Waitara Valley)	125%	1,500	Same Peaking tolerance, Peaking Limit reduced by 2,000GJ
Faull Road	125%	1,500	New
Tikorangi Mixing Station	150%	0	Same
Tikornagi #2	150%	0	New
Kowhai Mixing Station	150%	0	New
Ngatimaru Road (Receipt)	150%	0	New
Ngatimaru Road (Delivery)	125%	3,500	New
Tikorangi #3 (Receipt)	150%	0	New
Tikorangi #3 (Delivery)	125%	3,500	New
Turangi Mixing Station	150%	0	New

Welded Point (Large Stations only)	Peaking Tolerance (% of HSQ)	Peaking Limit (GJ)	Change
Mokau Compressor Station	125%	500	New
Poluru	125%	1,000	Split out, same %, combined total reduced by 2,000GJ
Pirongia	125%	500	Split out, same %, combined total reduced by 2,000GJ
Rotowaro	125%	6,500	Split out, same %, combined total reduced by 2,000GJ
Huntly Power Station	125%	3,500	Same Peaking tolerance, Peaking Limit reduced by 500GJ

Peaking change

The proposed arrangements introduce a Peaking Charge. The charge would only apply on a Day when:

1. There has been Incentives Pool Claims under MPOC s14.1(a) and the Welded Party with Incentive Pool Debits has been invoiced under MPOC s14.1(c) (Basically another pipeline user would have been unable to take its Scheduled Quantity);
2. Line Pack fell below the Low Line Pack Threshold; and
3. A Balancing Gas Call was made.

In these very restricted circumstances the Welded Party outside the relevant Peaking Limit would be invoiced for a Peaking Charge calculated as the amount over the Peaking Limit⁵⁵ times the difference between the Marginal Buy Price and Marginal Sell Price.

Discussion on Peaking arrangements

Under the proposed arrangement Parties who peak beyond the (revised) limits would be exposed to Incentives Pool Claims, as currently. This exposure would be marginally increased because of the extended, unbundled and tightened Peaking Limits (as set out in MPOC Schedule 7).

However, the major new effect of the proposed change would be to expose Welded Parties operations outside the relevant Peaking Limit to a Peaking Charge. This exposure is very limited but does recognise the potential for peaky users to affect deliveries to other users and to cause balancing actions.

One submitter⁵⁶ argues that during a day producers prefer to operate on flat hourly profiles while downstream users follow a demand profile. It suggests Line Pack is likely to be the most

⁵⁵ The amount over the limit is calculated by taking the average for the hourly flow at peak, an hour before and an hour after and deducting the Peaking Limit (or an amount agreed for particular operational reasons as described in s13.2).

⁵⁶ Contact cross-submission p3

efficient way to manage these intra-day variations. This may be so, but there is a cost associated with this and it seems reasonable that a Peaking Charge should apply to discourage overuse.

The MBBCR proposal assumes that the difference between the Marginal Buy Price and Marginal Sell Price is sufficient to discourage peaking. This does relate the price to market conditions, seems reasonable, and no submitters have objected to it.

Conclusion on peaking arrangements

We think these proposed changes can be viewed as a moderate and reasonable incentive.

In regard to peaking, we think the introduction of a Peaking Charge would discourage overuse of intraday flexibility. This should provide an incentive for investment (in equipment, processes and information systems) and generally improve the efficiency of the market structure. Also, it should encourage risks relating to security of supply to be more efficiently managed.

4.5 Daily tolerances

Current arrangements

As explained in section 4.3 above, under the current balancing arrangements where a Welded Party's ROI exceeds tolerance levels (currently set at the DOIL), MDL may issue an ILON to notify the Welded Party to return or take away the excess gas within a certain time. The tolerances are set out in MPOC Table 7 (Table 3).

Definitions

DOIL is the greater of a GJ amount and a percentage of SQ, as listed in MPOC Table 7. The relevant section of MPOC Table 7 is reproduced in Table 3 below.

ROI is the cumulative imbalance calculated at the end of each day, including any Cash-Outs and OI trades.

ROIL is ROI tolerance outside of which MDL may issue an ILON to notify the Welded Party to take away or return the excess imbalance (MPOC s12.10). It is essentially the greater of a GJ amount (from MPOC Schedule 7), a percentage (from MPOC Schedule 7) of average SQ for the previous 30 days, or the DOIL.

AEOI is the amount by which the ROI exceeds the ROIL at a Welded Point, and can be positive or negative.

Peaking Limits apply to hourly deliveries. Currently the limits must be the maximum that is reasonably practical (MPOC s13.1), and no less than the limits set out in MPOC Schedule 7.

A Peaking Limit is the greater of a GJ amount (from MPOC Schedule 7), a percentage (from MPOC Schedule 7) of the Hourly SQ.

Table 3 – Current Schedule 7 Daily Operational Imbalance Limits

Welded Point (Large Stations at physical offtake points only)	DOIL (% of Scheduled Quantity)	DOIL (GJ)
Oaonui Meter Station	3%	3,000
Tikorangi Mixing Station	3%	3,000
Bertrand Road	3%	3,000
Frankley Road	3%	3,000
New Plymouth Power Station	7.5%	5,000
Huntly Power Station	3%	3,000
Rotowaro	3%	10,000 combined
Pokuru	10%	
Pirongia	6.5%	

Proposed arrangements

As explained in section 4.3 above, the MBBCR proposes to replace the ILON arrangement with automatic daily Cash-Out of any AEOI. To do this, the definition of some terms would be modified, and the tolerances set out in MPOC Schedule 7 (Table 4) extended and modified. One significant new term is introduced: the ROIL Multiplier.

Table 4 – Proposed Schedule 7 Daily Operational Imbalance Limits

Welded Point (Large Stations at physical offtake points only)	DOIL (% of Scheduled Quantity)	DOIL (GJ)	Change	ROIL (% of SQ)	ROIL (GJ)	Change
Oaonui Meter Station	3%	3,000	Same	1%	1,000	Less than DOIL
Frankley Road	7.5%	5,000	Same	1%	1,000	Less than DOIL
Bertrand Road (Waitara Valley)	3%	3,000	Same	1%	1,000	Less than DOIL
Faull Road	3%	3,000	New	1%	1,000	Less than DOIL
Tikorangi Mixing Station	3%	3,000	Same	1%	1,000	Less than DOIL
Tikornagi #2	3%	3,000	New	1%	1,000	Less than DOIL
Kowhai Mixing Station	3%	3,000	New	1%	1,000	Less than DOIL
Ngatimaru Road (Receipt)	3%	3,000	New	1%	1,000	Less than DOIL
Ngatimaru Road (Delivery)	3%	3,000	New	1%	1,000	Less than DOIL
Tikorangi #3 (Receipt)	3%	3,000	New	1%	1,000	Less than DOIL
Tikorangi #3 (Delivery)	3%	3,000	New	1%	1,000	Less than DOIL
Turangi Mixing Station	3%	3,000	New	1%	1,000	Less than DOIL
Mokau Compressor Station	10%	1,000	New	1%	1,000	Less than DOIL
Poluru	10%	10,000 combined	Same	1%	1,000	Less than DOIL
Pirongia	3%			1%	1,000	Less than DOIL

Welded Point (Large Stations at physical offtake points only)	DOIL (% of Scheduled Quantity)	DOIL (GJ)	Change	ROIL (% of SQ)	ROIL (GJ)	Change
Rotowaro	6.5%			1%	1,000	Less than DOIL
Huntly Power Station	3%	3,000	Same	1%	1,000	Less than DOIL

Definitions

The definitions of:

- DOIL would be unchanged except for minor drafting clarification;
- ROI would be amended be 'for and as at' the end of a Day, and apply to adjustments for Cash-Outs to the opening balance on the following Day. So adjustments for Cash-Outs on a Day are made to the opening balance of the next Day (This fixes a circularity problem in the current MPOC where ROI includes adjustments for Cash-Outs made on the same Day yet Cash-Out Quantity calculations depend on AEOI which depends on ROI.)⁵⁷;
- ROIL would essentially be unchanged except that the drafting is tightened up and it is made explicit that the ROI at Small Stations and Notional Welded points is zero;
- ROIL multiplier would be a factor applied to the ROIL to allow a temporary increase (ie an added buffer before Cash-Outs) for events such as contingencies and maintenance (MPOC s12.18(c)). It also provides a 'soft landing' for the introduction of daily Cash-Out: the ROIL Multiplier would be set at 2 up to 1 March 2016, and 1.5 for six months beyond that;⁵⁸
- AEOI would also essentially be unchanged except that the drafting is tightened up and it is made explicit that the AEOI may be zero; and
- Peaking Limits would be unchanged except for minor drafting clarification.

These changes are practical and technical, with the significant changes being to the tolerance prescribed in MPOC Schedule 7. These tolerances would now cover more Welded Points and, in some cases, the Peaking and DIOL tolerances would be tightened. The proposed tolerances and a note on what would be changed is provided in Table 2 and Table 4.

Discussion on tolerances

ROILs are currently set to equal the DOILs. The MBBCR proposes to break that relationship. ROILs would be separately specified in MPOC Table 7 (Table 4 above). They are mostly about one third of the DOILs.

It may seem odd that the proposed ROILs should be less than the DOILs. In part this reflects their different functions in the MPOC. DOILs are relevant to Welded Party incentives pool claims. A Welded Party will incur liability to the Incentives Pool when the DOIL is exceeded

⁵⁷ This is explained in more detail in section 4.2 of Gas Industry Co's *Draft Recommendation on the 14 February 2014 MPOC Change Request*, a change that was supported at that time but not implemented.

⁵⁸ These dates anticipate a 1 March 2015 implementation of the MBBCR, and could be pushed out at MDL's option.

(MPOC s12.7). This arrangement would not be changed by the proposal. ROILs, on the other hand, basically set aside a portion of Line Pack to allow some operational flexibility before automatic daily Cash-Out of Welded Party imbalance.

But the DOIL has other relevance in the MPOC. MDL must act as an RPO to maintain total Line Pack sufficient to deliver Approved Nominations and to provide flexibility up to the amount of posted DOIL and Peaking and Contingency Volumes (MPOC s18.1). From this viewpoint it seems inconsistent that MDL should be required to maintain pipeline flexibility that is about three times higher than the flexibility it provides to users (through the ROILs). While this is a curious anomaly, we do not think it is relevant to our analysis.

Of more significance to our analysis is the fact that the flexibility provided through the ROILs is effectively a free good, which would be expected to create some inefficiency. However, the proposed ROILs of 1% of SQ or 1TJ (whichever is higher) are small and unlikely to significantly blunt the price signals created by the proposed daily Cash-Out arrangements.

We note that the 'soft landing' provided by the ROIL multiplier should be useful in allowing time for pipeline users to adapt to the new arrangements.

Conclusion on tolerances

In regard to tolerances, we consider that the proposed reduction of tolerances would reduce the quantity of free Line Pack flexibility provided. This would have a minor impact on the Gas Act objectives by somewhat improving the efficiency of the market structure.

4.6 TP Welded Party Balancing Gas scheduling rights

Current arrangements

Under the current arrangements a TP Welded Party (currently Vector) may use the Maui pipeline for transmitting Balancing Gas. The transmission of such Balancing Gas has priority use of Maui pipeline capacity over other gas. Furthermore, once Balancing Gas nominations are approved, they cannot be displaced by other Intra-Day Nominations, or by holders of Authorised Quantities (AQ). Nominations for Balancing Gas can also be made retrospectively.

Proposed arrangements

The proposed arrangements remove all TP Welded Party rights in relation to Balancing Gas, including the ability to schedule Balancing Gas outside the standard nominations cycle, and for that gas to have priority transportation over all other gas.

Discussion on TPWP Balancing Gas scheduling rights

Under the proposal, any transmission of Balancing Gas through the Maui pipeline to or from a TP Welded Point needs to be under the terms of a standard transmission services agreement with MDL. Vector would no longer have special rights as a TP Welded Party to schedule Balancing Gas. If Vector wished to secure priority treatment for the transport of Balancing Gas

on the Maui pipeline it would need to do so by securing AQ rights. However, this would not allow Vector to make nominations outside the Maui pipeline Intra-Day Cycles, as it can under current arrangements. The implications are that Vector's ability to operate an independent balancing market is reduced.

Vector has never used the Post Intra-Day Cycle functionality since the beginning of the open access arrangements on the Maui pipeline. Effectively, other than occasionally buying gas to cover its compressor fuel needs and unaccounted-for-gas (UFG), Vector does not engage in active buying and selling of Balancing Gas to balance its pipelines. Rather, it relies on the use of compressors at pipeline receipt points to maintain Line Pack; effectively 'following the demand'. It is logical for Vector to do this because attempting to actively manage the balance when there is relatively little Line Pack in its pipelines would likely lead to operational problems and user interruptions. The best strategy for Vector is likely to be to rely on there being sufficient Line Pack in the Maui pipeline to balance Vector pipeline demand, without actively intervening to manage the Vector pipeline Line Pack. In short, to devote all the Line Pack to transportation service and not to set aside a portion for flexibility (ie 'park and loan') services.

Because Vector has never made a nomination for Balancing Gas, it is difficult to assess what value the ability to make a nomination might have, or how that value might change as a consequence of the MBBCR. However, as discussed above, it seems unlikely that Vector will begin to actively trade Balancing Gas, so we assess the loss of Balancing Gas scheduling rights as being minor.

Conclusion on TPWP Balancing Gas scheduling rights

In regard to TPWP Balancing Gas scheduling rights, we do not think this should disadvantage Vector or have any significant effect on the Gas Act objectives.

4.7 Incentives pool

Current arrangements

The Incentives Pool provides a system of liquidated damages (MPOC s14.1), which is the sole and exclusive remedy for any inability of a Welded Party to take full Scheduled Quantity on a day (14.5). Welded Parties incur liability to the Incentives Pool to the extent flow exceeds Peaking Limits (13.3) or daily imbalance depletes Line Pack in excess of the DOIL (MPOC s12.7). However, such Welded Parties are only required to make payments into the Incentives Pool when a claim is made against the Incentives Pool⁵⁹.

In addition to Welded Parties, the Balancing Agent can also claim against the Incentives Pool to meet the costs of buying Balancing Gas (MPOC s14.4).

⁵⁹ This is achieved by defining the Incentives Pool Debit Price as zero if there are no Incentives Pool Claims in respect of the Day.

Proposed arrangements

Under the proposed amendments, the Balancing Agent will no longer be able to claim against the Incentives Pool. In other respects the Incentives Pool arrangement remains essentially intact. The Pool would continue to provide a liquidated damages arrangement for Welded Parties who suffer damage when other Welded Parties have exceeded their Peaking Limits or their DOIL.

Discussion on Incentives Pool

The Incentives Pool is no longer needed under the daily Cash-Out regime proposed by the MBBCR, and it appears that Welded Parties would not lose any rights as a result of the proposal.

Conclusion on Incentives Pool

In regard to the Incentives Pool, we think a logical consequence of the proposed move to daily Cash-Out is that the Balancing Agent should no longer be able to claim against the Incentives Pool. We do not think the proposal would have any significant impact on the Gas Act objectives.

5

Related issues

In addition to the elements of the MBBCR considered in Section 4 above, submitters have raised a number of related issues. We discuss these here.

5.1 MDL's recovery of balancing costs

Some submitters⁶⁰ are concerned that under the proposed arrangements MDL would be able to over-recover balancing costs with no requirement to return that over-recovery.

MDL discusses balancing costs in its submission⁶¹, but the most concise description is provided in its cross-submission⁶² where it notes that:

Our initial submission identified bFG costs [ie balancing related compressor fuel costs] and their role in the TCB [total cost of balancing] picture, but the summary could have been more coherent in pulling the elements together. Thus, to be clear, TCB has two cost components: net BG costs and bFG costs; or, algebraically, $TCB = \text{cost BG} + \text{cost bFG}$

A key difference between the two components is the time horizon between when they are incurred and when they fall on end users:

- BG costs and revenues are part of the annual balancing wash-up, which results in Tariff 2 adjustment in the following year. MDL does the wash-up calculations every April (based on the prior calendar year, January to December) and applies any adjustments to the tariff – after a compulsory 60 day notice period – from 1 July. This means that the window between a BG transaction occurring and tariff adjustment is six to eighteen months.
- bFG costs are not part of the balancing wash-up. bFG costs are OPEX for MDL and are factored into the revenue cap the Commission sets for MDL for the next period. Costs incurred in one regulatory period therefore can have a trickle-down effect (to pipeline users) over a five-year period that begins at least a year after the bFG costs were incurred.

Balancing gas costs

The two elements (BG costs and bFG costs) are treated differently under incentive regulation. BG costs have been treated as recoverable costs. Recoverable costs are defined in section 3.1.3 of *Commerce Commission Decision No. 712 Input methodologies determination applicable to gas transmission services pursuant to Part 4 of the Commerce Act 1986*. The definition is rather involved, but Commerce Commission Decision No. NZCC 24, *Gas Transmission Information Disclosure Determination 2012*, provides disclosure templates that list one of the recoverable

⁶⁰ Contact cross-submission p3, Vector submission paragraph 45 and 48,

⁶¹ Notably MDL submission s4.2.1 paragraphs 67, 68, 104 and 117

⁶² MDL cross-submission paragraphs 69 & 70

costs as 'balancing gas costs'. MDL's annual disclosures of balancing gas costs ('BG costs' as MDL refers to them) for the first two full years of NZCC 24 disclosures are:

3(ii): Pass-through and Recoverable Costs		y/e 31 Dec 13	y/e 31 Dec 12
	Recoverable costs: Balancing gas costs	(699)	(296)

In relation to balancing gas costs for year ending 31 December 2013, an explanatory note to the disclosure comments:

In schedule 3, the Balancing gas costs included under Recoverable Costs are the net sum of purchases and sales of balancing gas by MDL minus the charges made to persons with an interconnection agreement with MDL for: a) settlement of positive and negative Accumulated Excess Operational Imbalance after expiry of an Imbalance Limit Overrun Notice; and b) Incentives Pool Debits incurred for an Excess Daily Imbalance or for exceeding a Peaking Limit.

In its cross-submission, emsTradepoint illustrates how this approach would be applied in the future if the MBBCR was to be implemented. Basically the Cash-Outs, Puts and Calls are washed up once a year and the net position funds a tariff rebate in the next year. We reproduce this example here:

Notes Revenue			
	Negative Cash-Outs	GJ	100,000
1	Negative Cash-Outs	\$	\$577,500.00
	Balancing Gas Sales (Put)	GJ	50,000
2	Balancing Gas Sales (Put)	\$	\$275,000.00
	A - Total Revenue	\$	\$852,500.00
Expenditure			
	Positive Cash-Outs	GJ	100,000
3	Positive Cash-Outs	\$	(\$522,500.00)
	Balancing Gas Purchases (Call)	GJ	50,000
2	Balancing Gas Purchases (Call)	\$	(\$275,000.00)
	B - Total Revenue	\$	(\$797,500.00)
	C - Net Expenditure [A+B]	\$	\$55,000.00
4	D - Tariff (Rebate) / subsidy [Cx-1]	\$	(\$55,000.00)
	Net cost to industry [C+D]	\$	\$0.00
Notes			
1	Negative Cash-Outs are assumed to be priced at a baseline Cash-Out Sell Price calculation. In this example, we have used \$5.78 (\$5.50 + 5%).		
2	Balancing gas sales and purchases are assumed to be priced at a baseline spot price. In this example we have used \$5.50.		
3	Positive Cash-Outs are assumed to be priced at a baseline Cash-Out Buy Price calculation. In this example, we have used \$5.23 (\$5.50 - 5%).		
4	Tariff will be adjusted to rebate any positive net expenditure and recover any negative net expenditure.		

Figure 9 - Extract from emsTradepoint of the netting-out of balancing costs

This example shows that the net cost to pipeline users is zero. However, the cost allocated to each Welded Point will be different. A Welded Point that operates within tolerance throughout the year will have no Cash-Outs. A Welded Point that operates outside tolerance on any day will be cashed-out. Or, more generally, as emsTradepoint notes⁶³:

Parties that use less flexibility than the average (an NQ vs. AEOI ratio < 1:1) will see a net benefit against status quo (as they will be paying less flexibility subsidy), and any party that uses more flexibility than the average (an NQ vs. AEOI ratio > 1:1) will see a net cost against status quo.

Those who pay Cash-Outs would fund a tariff rebate that would benefit all Maui pipeline shippers in the next year.

Compressor fuel costs

In contrast, compressor fuel is not a recoverable cost, it is an operating expenditure. MDL's annual disclosures of compressor fuel expenditure for the first two full years of NZCC 24 disclosures are:

6b(i): Operational Expenditure		y/e 31 Dec 13	y/e 31 Dec 12
	Compressor fuel	358	110

Some explanation is required to reconcile the above compressor fuel disclosure with MDL's submission where it says⁶⁴

... at least 90% of Fuel Gas use since 2010 (664 TJ) can be attributed to 'balancing'. At the emsTradepoint VWAP [Volume Weighted Average Price], this equates to about \$3.68 million of cost. Divided by four (years), this comes out at about \$950,000 per annum – although as we have noted, the annual figure is gradually increasing (to about \$1.2 million). If MDL revised its compressor policy and only ran Mokau when demand north exceeded 250 TJ, this notional figure would be saved – and can thus be characterised as a cost that is partially a function of user behaviour that is made possible by the other partial cause: MDL policy – but equally, the costs of managing pressure would manifest elsewhere, through a substantial increase in balancing transactions. Under the status quo, i.e. with MDL using the BGX and based on BGX prices, that cost on a conservative estimate would be about \$3 million per annum. The net increase, once the 'saved fuel costs' are removed, would be around \$2 million per annum.

We understand that MDL has been using UFG as a source of compressor fuel, so the disclosed numbers do not show the full cost. MDL does this because it is the most cost effective method for industry (since the alternative would be for MDL to buy compressor fuel and sell UFG).

Nova notes⁶⁵ that this arrangement involves the socialisation of balancing costs since (to the extent that compressors are used to support balancing) compressor costs are recovered through the tariff. It considers that this situation would be exacerbated by MBB. While we agree that compressor costs are socialised (whether the compressors are used for balancing or not),

⁶³ emsTradepoint cross-submission p2

⁶⁴ MDL submission paragraph 117

⁶⁵ Nova cross-submission p7

this would be the case both with and without the MBBCR. But the MBBCR would tend to direct balancing costs towards pipeline users with excess imbalance to a greater extent than current arrangements. So we believe the extent of cost socialisation would be reduced, and the price signal would be more reliable than at present. Alternative views on the treatment of Cash-Out costs

Several submitters⁶⁶ argue that the Commerce Commission should treat Cash-Outs as operational expenditure rather than as a recoverable cost. Vector is concerned that a Commerce Commission ruling to that effect could lead MDL not to implement MBB even if it was supported by Gas Industry Co because the resulting volatility of transmission costs would be unacceptable to MDL. Vector says that it needs to resolve this issue before it can confidently pass Cash-Outs through to its shippers.

As discussed in section 2 above, any process for determining whether costs are recoverable will not be concluded before our Final Recommendation on the MBBCR. Consistent with many processes requiring approvals under multiple regimes, a proponent needs to start somewhere. In this case, we believe that it is appropriate and reasonable for MDL to ask for the MBBCR to be processed first, and there is nothing in submissions that precludes our process from continuing to making a recommendation.

In summary:

- MDL is treating Cash-Out costs as recoverable revenue;
- Recoverable revenue is washed-up in the next year;
- MDL is not treating compressor fuel costs as recoverable revenue;
- like most other transmission business costs, compressor costs are not washed-up⁶⁷. However, discrepancies between budgeted and actual costs would be factored into the allowable revenue calculation in future control periods;
- issues around what are 'recoverable costs' will not be concluded before our Final Recommendation, but should not preclude us assessing the MBBCR; and
- this issue does not prevent Gas Industry Co deciding whether or not to support the MBBCR in the meantime.

5.2 Balancing tools

Genesis and MRP⁶⁸ consider that an important distinction between the proposed arrangement and the arrangements in other jurisdictions where daily cash-outs are applied (such as in

⁶⁶ Vector submission paragraphs 51-53

⁶⁷ By washed-up we mean that any differences between budgeted cost and actual cost is specifically reconciled in some way, such as by means of a tariff adjustment.

⁶⁸ Genesis submission p2, MRP submission p1

Europe) is that elsewhere balancing tools, such as frequent nominations cycles and daily allocations, apply.

Nomination cycles

A number of submitters⁶⁹ note that more nomination cycles are needed, and/or the current cycle times need to be altered to permit good balancing.

More nomination cycles would allow pipeline users to update their nominations as new information becomes available, both in the normal course of business and in unusual circumstances. An example of the latter is when force majeure (FM) or emergency situations occur and stop gas flow downstream of a TPWP. In that situation, shippers on that downstream pipeline have no mechanism other than waiting for the next nomination cycle to modify nominations on the Maui pipeline.

At face value it might be expected that Vector, as a TP Welded Party, could reduce a Scheduled Quantity at any time in accordance with MPOC s15.2⁷⁰ if one of its shippers experienced a force majeure or emergency situation. This would seem like a useful tool in the absence of the ILON 'grace period'. However, there appear to be some practical difficulties:

- OATIS can only curtail nominations to a Welded Point on a pro rata basis, not by individual shipper. So all shipper nominations at the Welded Point would be proportionately reduced, not just the shipper who experienced the FM or emergency;
- MDL would require a report of the circumstances that led to the failure, and Vector may not be prepared to take on that 'intermediary' responsibility; and
- MDL would require to verify that the reduction in SQ matched a reduction in scheduled and actual flows at the Vector shipper's delivery point. Since Vector may not have nominations and MDL does not see downstream flow information these matters would require attention.

We accept that nomination cycle times become more significant when the ILON 'grace period' is removed⁷¹. This could be ameliorated by broader use of MPOC s15.2 and, ideally, more cycle times. However, both would require changes to MDL's information system that seem unlikely to be commercially viable until OATIS is replaced. Replacement of the OATIS system will more easily and cheaply be achieved if a more standard balancing regime (involving daily Cash-Out) is introduced.

In addition to the limiting functionality of the nomination cycles, Nova notes⁷² that MBB would also make other balancing tools such as WP transfers ineffective. We agree that automatic daily Cash-Out will mean that balancing tools that could completely eliminate ILON Cash-Outs would not be so effective against MBB Cash-Outs. However, this does not mean that they are not still valuable. Balancing positions are managed continuously, so while a WP transfer may not be

⁶⁹ Eg Contact cross-submission p3, NZ Steel submission p3, MGUG submission paragraph 10, Genesis submission p2

⁷⁰ MPOC s15.2 allows a Welded Party to immediately notify MDL of a reduction in its SQ where: (1) it will avoid non-specification gas flowing; (2) non-scheduled maintenance is required; (3) an FM event has occurred; or (4) a contingency event has occurred.

⁷¹ For example, the NZ Steel submission spells out the difficulties that the lack of a unified balancing/nominations regime across both transmission systems causes. While this is already an issue, it would be made more acute if the MBBCR is introduced.

⁷² Nova cross-submission p3

effective to correct an excess imbalance on the day of gas flow (D), it may still be useful to avoid one occurring on the following day (D+1).

Daily allocations

A number of submitters⁷³ note that a 'D+1' or similar regime would significantly improve the ability of mass market retailers to manage their balance positions. Gas Industry Co is continuing work on this regime, with a trial scheduled during 2015. This will be of benefit particularly to mass market retailers, but of only partial benefit in the overall scheme of balancing tools and arrangements.

Assessment

Gas Industry Co acknowledges that frequent cycle times and more timely reconciliation are generally features of markets with daily Cash-Outs. Like other investments, the development of such tools should be judged on their merits. We do not consider that the availability of those tools is a pre-requisite to daily cash-out. In fact, until price signals are available on the value of improving primary balancing (rather than being Cashed-Out) it would be difficult to assess the economics of investing in more frequent nominations cycles and more timely reconciliation. Also, Gas Industry Co remains free to recommend gas governance regulations to solve issues, providing that the statutory test for such regulations is met.

5.3 Effect on downstream users

Some submitters⁷⁴ have observed that it is difficult to estimate the cost of the proposal on end users. This is because the behavioural response to changed incentives is difficult to estimate, and retailers have not yet decided how the MBBCR would affect the terms of their end user contracts.

MGUG⁷⁵ expects that its members' costs would increase. However, although there is uncertainty, and while some of the devil is in the detail, we find it difficult to understand why the costs to major users would rise. If primary balancing improves, there will be less balancing actions, and those that do occur will be transacted on a more liquid market. So there is good reason to suppose that MDL's balancing costs will decrease. Although there would very likely be more Cash-Outs, these would be washed up with the balancing costs to give a transport rebate in the next year. The transport rebates apply to all gas transported on the Maui pipeline. And, in addition, those users who have not been using the ILON system to avoid responsibility for the costs they cause will benefit from avoiding the socialised cost others have created. So we expect that for users who can operate within tolerance (or within their allocation of the tolerance at their receipt point), costs will fall. And where they consume gas outside that tolerance, that gas will be priced at a market-related price.

⁷³ Eg Genesis submission p2

⁷⁴ Eg MRP submission p3, MGUG submission paragraph 8

⁷⁵ MGUG submission paragraph 8

Mass market retailers⁷⁶ also expect costs to their customers would increase. Mass market retailers note that because they lack the tools to manage their balance positions (discussed above), they will likely face more cost than other users. It seems to us that if mass market end users impose more cost on the system than other users then it is efficient for them to meet those costs. The alternative is a cross-subsidy of the kind that is currently occurring. We believe that until the costs are signalled, it is unlikely that improvements will occur. Also, we agree with emsTradePoint⁷⁷ when it notes that the case for investment in better balancing has been distorted by the subsidy effect of the current ILON arrangements.

In summary, we agree with submitters that the effect of the MBBCR on an end user would depend on a number of factors. The MBBCR would not require pipeline users to invest in equipment, processes, or information systems to improve their balancing. However, pipeline users would no longer be able to rely on the grace period of the ILON process as a means of avoiding Cash-Outs. So they might choose to invest in improved balancing and/or modify arrangements with end-users they supply.

5.4 Barriers to entry

Some submitters⁷⁸ believe that the MBBCR will increase the risk for new entrant retailers. In particular, as a new participant in the industry, Trustpower considers that the proposal will add significant complexity and cost to new entrants. However, we note that in some respects the situation for new entrants would become more certain. Where they contribute to an imbalance over tolerance they would automatically be cashed-out, but that Cash-Out would occur at a price referenced to a more liquid market than at present. Also, if the new entrant has experience of gas markets in other jurisdictions where daily Cash-Out is likely to be the norm, they would find the proposed arrangements much easier to understand and adapt to than the existing ILON arrangements.

5.5 Upstream benefits

The Shell submission claims⁷⁹ that there will be a 'NZ Inc' benefit from better balancing because of expected reservoir benefits. In particular, it is claimed that hydrocarbon recovery and condensate production would be enhanced by low and stable pipeline pressures. We met with Shell to discuss these claims and we are persuaded that there is some possible benefit here. However, we have not tested or verified this claim independently. We consider that because of the difficulty and cost of obtaining a reliable assessment of the possible benefit it should only be accounted for if it looks like becoming a significant factor in the final assessment of the MBBCR. At this stage we are not convinced that this will be necessary and note that Covec's Cost-Benefit analysis also does not quantify these claimed benefits.

⁷⁶ Eg MRP submission p2, Trustpower submission p2

⁷⁷ emsTradePoint submission p3

⁷⁸ Eg Trustpower submission p3, Nova cross-submission p6

⁷⁹ Shell submission p2

5.6 Misalignment of codes

MDL has tried to design the MBBCR so that no changes other than those that have already been approved are necessary to the VTC. Some submitters⁸⁰ believe that the 'misalignment' of the codes is a more fundamental issue than balancing incentives. We acknowledge that having the two transmission codes creates complexity, and other work sponsored by Gas Industry Co promotes 'evolutionary convergence'. However, our role in assessing the MBBCR is not to propose better or best alternatives, and we do not believe that any of the alignment issues make the MBBCR unworkable or undesirable on their own. We recognise that if we prove to be wrong, and misalignment issues do undermine industry improvements, we would have to address that issue in our regulatory capacity.

Some submitters⁸¹ also comment that implementing the MBBCR would make downstream arrangements for allocating imbalance untenable. In particular, the VTC currently explicitly prevents the wash-up of balancing costs. We acknowledge that implementing MBB would result in pressure to change various industry arrangements. While the cost of such changes should be weighed in the balance, we think that some changes would be necessary to maximise the benefits of the MBBCR.

5.7 International best practice

MDL says that the MBBCR was inspired by the European Code⁸². Gas Industry Co welcomes references to international comparators. We acknowledge the extensive experience and work that went into development of the European Code, and MDL's intent in developing arrangements that are broadly consistent with it. However, it is rarely the case that other countries' gas governance arrangements can be adopted without careful assessment in other jurisdictions. Submitters⁸³ point out that the MBBCR adopts only parts of the European Code model and that, in any case, some New Zealand market conditions are markedly different to those in Europe, so we need to be cautious in assessing the merits of this approach.

Although New Zealand is different to other jurisdictions, we believe that it is a good idea to keep abreast of overseas developments and benefit from their experience where we can. Other jurisdictions are generally larger than New Zealand and have a broader base of expertise to draw on. Other submitters acknowledge this⁸⁴.

One area where we think that MDL's alignment with common overseas industry practice would bring a benefit is in relation to the OATIS replacement. The ILON arrangements are, to our knowledge, unique and would require customisation of any new IT system. Gas Industry Co assumes that, if amore standard industry approach of daily Cash-Out (as proposed by the

⁸⁰ Eg NZ Steel submission p2

⁸¹ Eg Trustpower submission p2, Nova cross-submission p5

⁸² See Commission Regulation (EU) No 312/2014 of 26 March 2014 establishing a Network Code on Gas Balancing of Transmission Networks: http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv:OJ.L_.2014.091.01.0015.01.ENG

⁸³ Eg Trustpower submission p1, MRP p1

⁸⁴ Eg Vector cross-submission paragraph 6 recognises the benefit of drawing on the experience of comparable foreign jurisdictions

MBBCR) were adopted, the chance of finding an 'off-the-shelf' replacement for OATIS would be increased. We assume that this would avoid significant customisation costs.

5.8 Proportionality

A number of submitters⁸⁵ have referenced a graph showing Balancing Gas Purchases and Sales, such as the one in Gas Industry Co's *The New Zealand Gas Story* copied in Figure 10. They argue it illustrates that pipeline balancing is no longer a significant issue and that the MBBCR is out of proportion to the scale of the problem.

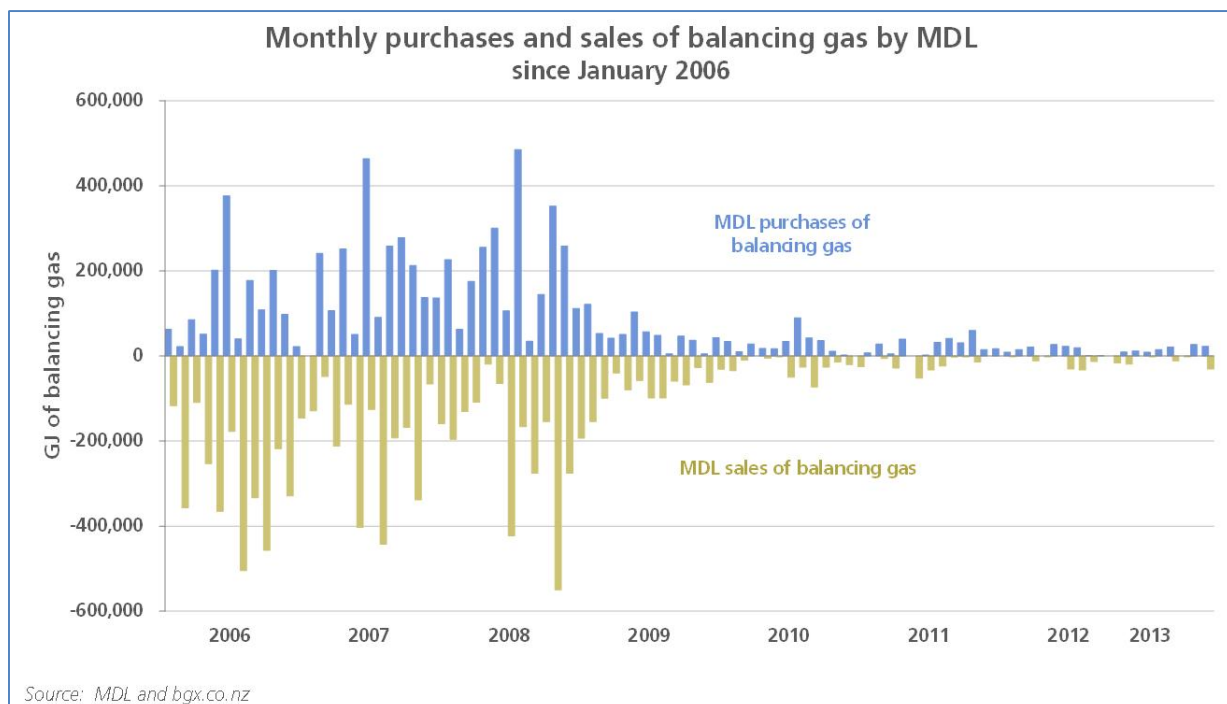


Figure 10 – Copy of Figure 29 from *The New Zealand Gas Story - The State and Performance of the New Zealand Gas Industry - 2nd Edition – April 2014*

However, we agree with submitters who say that the graph does not tell the full story. Since the graph illustrates the balancing actions taken by MDL, the reduction in balancing gas volumes could be partly accounted for by a changes to its Line Pack management strategy, such as the increasing use of the Mokau compressor to support pipeline balancing⁸⁶. In any case, there is no doubt that the volatility of pipeline pressures remains high. MDL notes⁸⁷ that on about half of the days in 2013 and 2014 the Target Taranaki Pressure envelope of 42 to 48 bar was breached. Evidence that excess imbalances have not materially reduced since 2007/2008 was provided by another submitter⁸⁸.

⁸⁵ Genesis submission p3

⁸⁶ See MDL submission Table 2 p23

⁸⁷ MDL submission paragraph 73

⁸⁸ OMV submission p2

In addition, much of the economic cost consequences of the ILON system are hidden, as MDL⁸⁹ notes:

... A decline in net BG costs since 2008/2009 masks the fact that primary balancing performance has not improved – and that longstanding concerns about cross-subsidies, socialisation and negative externalities remain valid. End users as a whole suffer, particularly those cross-subsidising other users.

In Paragraphs 17 to 27 of its cross-submission MDL draws together the strands of why it considers that pipeline balancing remains a problem. We agree with MDL's summary.

We recognise that Line Pack flexibility is small (Nova estimates⁹⁰ daily flexibility of +/- 30-40TJ compared to gas field swing of 200-250TJ and Contact Energy's storage facility of 40TJ) and that its availability (outside tolerance) is uncertain. However, these are not arguments that a 'free' (more accurately 'cross-subsidised') pipeline storage is superior. Also, at this stage of the analysis (ie before receiving submissions on this Draft Recommendation), it appears from the Covec Cost-Benefit analysis that the economic benefit of the MBBCR will exceed its cost.

5.9 A better solution through a collaborative approach

Many submitters⁹¹ would prefer that the MBBCR is rejected to allow time for an alternative solution to be developed collaboratively among stakeholders. The rationale is possibly most comprehensively set out by Vector. In its paragraph 4 of its submission it notes:

The gas industry is currently undergoing significant change, including to transmission access arrangements and improvements to downstream allocation, both of which might be expected to improve primary balancing. Further, the current OATIS system is due to be replaced and residential gas time-of-use metering is entering trial stages. Although these improvements are expected in the medium rather than immediate future, they are expected to improve information and other tools (such as increased nominations cycles) to enable better primary balancing. Vector believes that any significant measures intended to address primary balancing should be progressed in the context of these other changes. Otherwise, there is a risk of inefficient investment which could be rendered redundant in the short to medium term as system-wide improvements begin to be implemented.

And, in paragraph 7 of its cross-submission under the heading 'Significant industry changes should be made collaboratively', Vector adds:

MBB represents a significant change to the NZ gas market landscape. Although Vector acknowledges that changes to the MPOC do not need to have regard to matters which are extraneous to the MPOC – such as Downstream Reconciliation and Shipper information access – we believe that those matters are relevant to the assessment of an MPOC change where they will result in the change being detrimental to the Gas Act objectives.

⁸⁹ MDL cross-submission paragraph 129

⁹⁰ Nova cross-submission p8

⁹¹ Eg CHH submission p2, Genesis submission p4, MRP submission p1, Trustpower cross-submission p4

And, in paragraph 8 of its cross-submission Vector asserts its willingness to work co-operatively:

We note that MDL did not adopt some of the changes contained in the EU regulations on which MBB was based because of the risk of a material adverse effect notice, and that MDL states it is willing to pursue those changes after MBB is implemented if Vector is willing to take a collaborative approach. As advised to MDL on previous occasions, we were and are prepared to engage and collaborate on industry changes, including MBB.

We do not know why a collaborative approach was not possible before the MBB proposal was finalised. But we observe that MDL and Vector have a history of not seeing eye-to-eye on balancing arrangements. And if Vector and MDL cannot progress collaboratively we don't think it matters greatly whether other stakeholders are willing to collaborate – a collaborative approach is unlikely to succeed.

We agree with Vector and other submitters that it is important to take this wider perspective when considering the MBBCR. We are also open to the opinion that '... a collaborative market development approach is best positioned to ensure that the most efficient outcome for customers is reached'⁹², but we are not persuaded that a collaborative approach is a credible alternative.

Uncertainty about the future of pipeline balancing arrangements has dogged the industry for the best part of a decade. And since balancing is central to pipeline operations and accounting, this uncertainty has affected other developments and decisions and resulted in many thousands of hours of executive time being spent on investigations, working groups, change requests, proposed regulatory interventions etc. Past experience suggests that a collaborative approach will not bring the matter to a conclusion, even if all Parties agree to 'be in the room'⁹³.

⁹² Trustpower cross-submission s6.1

⁹³ For example, the previous effort to resolve balancing through an industry process – the 2009 Industry Code Development (ICD) process – failed, despite being well resourced, having a structured work plan, good governance and full participation. See: <http://gasindustry.co.nz/work-programmes/transmission-pipeline-balancing/transmission-pipeline-balancing/#icd-process/>. The matter is also discussed in the MDL submission paragraphs 56-59.

6

Conclusion on Draft Recommendation

In concluding our Draft Recommendation as required under the MoU, we believe that implementation of the MBBCR would promote the relevant objectives in Part 4A of the Gas Act 1992 and GPS (set out section 3.3 above), and generally improve the efficiency of gas transport arrangements relative to the status quo. We reach this conclusion after appropriate consultation on the MBBCR, as required by MPOC s29.4, and carefully considering submissions. The Covec Cost-Benefit Analysis attached as Appendix B has informed our analysis, and its finding that the benefits of the proposal would outweigh its costs, is consistent with our assessment.

Improved Balancing Gas procurement

The MBBCR would allow MDL to procure Balancing Gas on a Balancing Platform that all Parties have access to. We believe that market will be significantly more liquid than the current BGX. This would significantly reduce barriers to competition in the supply of Balancing Gas and create downward pressure on prices.

These market benefits could in time be achieved by other means (such as regulation or industry agreement or other MPOC changes). However, such alternatives are uncertain, and would likely delay improvements by several years.

Improved price signals

- Daily Cash-Outs would significantly reduce the opportunities for pipeline users to avoid the costs they impose on the system (as permitted by the current ILON arrangements);
- Cash-Out prices would be referenced to a more liquid market;
- costs would be directed towards pipeline users who make more use of pipeline flexibility since the availability of free flexibility is reduced;
 - in amount, since the ROIL tolerances would be significantly reduced; and
 - in time, since the 'grace' period of several days before Cash-Out prices apply would be removed.

We believe that the improved price signals will allow pipeline users to make better investment decisions (in systems to better manage their individual imbalance positions) and potentially increase competition for the supply of other forms of flexibility.

We also consider that the incentives created by improved price signals would result in more stable balancing, thereby reducing security of supply risks.

Specific objections raised in submissions

A number of objections to the MBBCR have been raised in submissions (summarised in Appendix A). We have addressed these in the body of this Draft Recommendation. Many objections pointed to the benefits of B2B over MBB. While we agree with many of these, MDL does not propose to implement B2B and no other party has sought to pursue that, so we have not discussed them in detail.

Concerns have been raised about whether the treatment of Cash-Out costs under economic regulation administered by the Commerce Commission might prevent implementation of the changes. We acknowledge that risk, but do not consider that it should prevent us from making a recommendation on the MBBCR.

Broad concerns raised in submissions

Broader concerns related to the additional administrative costs of the proposal and the possible existence of better alternatives that might be achieved through a collaborative approach.

Although not directly relevant to our analysis of the MBBCR, stakeholders are aware that in 2009 Gas Industry Co proposed to introduce Balancing Rules, but these were generally opposed by industry participants who successfully lobbied for time to develop an alternative solution based on code changes. Initially a B2B proposal was developed by MDL, but was generally opposed by stakeholders. Now MDL proposes the MBBCR. It offers some of the benefits of Gas Industry Co's 2009 proposal – more competitive procurement arrangements and better price signalling – but not all. In particular Gas Industry Co's proposal was for a single unified balancing arrangement across both pipelines. However, we do see MBBCR as a step in the right direction and a move towards common practice.

Many industry participants are now lobbying either to do nothing or to allow for more time to develop another alternative solution based on a consensus. We do not consider 'do nothing' to be a strong option because current inefficiencies would persist while the proposal offers immediate benefits. Neither do we consider that there is good reason to expect that consensus could be achieved since industry participants have demonstrated strongly opposing views over many years, and continue to do so – a number of parties objecting to this MBBCR also objected to the preceding B2B changes and to the earlier regulatory proposals by Gas Industry Co.

In our view, MBBCR will not address all balancing related issues. Indeed, pipeline users may choose to continue their current practices. But automatic daily Cash-Out of excess imbalance should be an incentive for pipeline users to consider investments in better flow management information, and alternative flexibility arrangements.

7

Draft recommendation

On the basis of the submissions to date, the Covec Cost-Benefit Analysis, and our own analysis of the likely effects of implementing the MBBCR compared to the status quo, Gas Industry Co supports the proposal.

8

Next steps

Gas Industry Co now wishes to test its analysis and the Covec Cost-Benefit Analysis before making a final assessment of the proposal. The next steps are outlined in **Table 5** below.

Table 5 **Next steps**

Item	Target Date
Publication of Draft Recommendation	Wednesday, 25 February 2015
Submissions due	Monday, 30 March 2015
Final Recommendation (target date - subject to any extra steps arising from submissions received)	Monday, 27 April 2015

Glossary

Note: Definitions obtained from the MPOC are shown in *italics*.

AEOI	'Accumulated Excess Operational Imbalance'. A defined term in the MPOC for amount of OI in excess of tolerance.
Balancing	The management of Line Pack to ensure that it remains within acceptable operational limits.
Balancing Agent	Defined by the MPOC as ' <i>...the balancing agent appointed by MDL from time to time to manage the Line Pack.</i> ' The October 2011 Change Request does not propose changing this definition.
Balancing Gas	Defined in the current version of the MPOC as ' <i>...Gas used to manage line pack on a Transmission Pipeline.</i> ' The October 2011 Change Request proposes changing this to ' <i>... Gas purchased as part of a Balancing Gas Call, or sold as part of a Balancing Gas Put, by MDL.</i> '
B2B balancing	'Back to back balancing' refers to arrangements that allocate gas transactions taken by the Balancing Agent among Welded Parties with imbalance positions outside tolerance.
BGX	'Balancing Gas Exchange', an online platform that facilitates the trade of Balancing Gas on the Maui Pipeline.
BPP	'Balancing and Peaking Pool'. A mechanism in the Vector transmission regime to ring-fence and allocate balancing costs via a trust account.
Cash-Out	A forcible sale or purchase of gas by the TSO to resolve an outstanding imbalance position.
Contingency Volume	Defined in the current version of the MPOC as ' <i>... the quantity of Gas which is maintained by MDL in the Maui Pipeline as part of the Line Pack and is designated for use in a Contingency Event, Maintenance, or a Force Majeure Event in accordance with this Operating Code.</i> ' The October 2011 Change Request does not propose changing this definition.
D+1	D+1 commonly refers to a system for allocating quantities of gas at a shared station among the parties flowing gas through that station, on the day after gas flow.
Damages	The loss to a user's business caused by another user breaching its obligations. A damages claim is a claim for compensation for costs incurred.

Delivery Point	Defined by the MPOC as ' <i>...a Welded Point to which a Shipper nominates to have Gas transported.</i> ' The October 2011 Change Request does not propose changing this definition.
DOIL	'Daily Operational Imbalance Limit' is a defined tolerance in the MPOC for acceptable DOI.
GPS	'Government Policy Statement' on Gas Governance (April 2008)
ILON	Defined in the current version of the MPOC as ' <i>...a notice given by MDL to a Welded Party under section 12.10 requiring that Welded Party to reduce its Accumulated Excess Operational Imbalance to zero, and which states the quantity of, and a time period for reducing, that excess.</i> ' The October 2011 Change Request proposes to delete this definition and all references to ILONs in the MPOC.
Imbalance	Generically this means the flows into the pipeline do not match the flows out of the pipeline. This can be 'operational imbalance' in the MPOC which is the difference in scheduled flows and actual flows at an interconnection point. This can also be the difference between shipper receipt and delivery quantities in both the MPOC and VTC (where it is called 'mismatch'). A positive imbalance is one that increases Line Pack and a negative imbalance is one that decreases Line Pack.
Incentives Pool	<p>Defined by the MPOC as '<i>...the pool of money held on trust and administered by the Incentives Pool Trustee, into which all Incentives Pool Debits are to be paid and out of which Incentives Pool Claims are to be paid.</i>' The October 2011 Change Request does not propose changing this definition.</p> <p>The Incentives Pool is essentially a liquidated damages arrangement that permits a Welded Party, who suffers damage as a result of another Welded Party being out of balance, to claim liquidated damages.</p>
Line Pack flexibility	Flexibility in the level of Line Pack over and above that needed to transmit scheduled gas and set aside for security of supply, which is Line Pack flexibility potentially available for balancing.
Line Pack	Defined by the MPOC as ' <i>...the total quantity of Gas in the Maui Pipeline at any time.</i> ' The October 2011 Change Request does not propose changing this definition.
MDL	Defined by the MPOC as ' <i>Maui Development Limited.</i> ' The October 2011 Change Request does not propose changing this definition.

MPOC	'Maui Pipeline Operating Code', the current version of which is dated 1 September 2011.
OATIS	'Open Access Transmission Information System' is the IT system used to manage third party access to the transmission pipelines, including providing operational pipeline information, information exchange between pipeline users and operators, and public information. The single system has segmented functionality for the Maui pipeline and Vector pipelines.
OI	'Operational Imbalance'. The MPOC defines OI as being the difference between the actual quantity of gas that flowed through a welded point on a day and the scheduled quantity for that day.
Peaking Charge	An incentive/penalty charge proposed to apply to Welded Parties whose demand peaks outside proposed Schedule 7 limits, and calculated in accordance with a proposed Section 13.4.
Receipt Point	Defined by the MPOC as ' <i>...a Welded Point from which a Shipper nominates to have Gas transported.</i> ' The October 2011 Change Request does not propose changing this definition.
ROI	'Running Operational Imbalance'. A defined term in the MPOC for the aggregate of imbalance at a welded point over time and therefore represents the total gas parked or loaned from the pipeline at that point. The October 2011 Change Request does not propose changing the definition.
ROIL	'Running Operational Imbalance Limit'. A defined term in the MPOC for tolerance of ROI, outside of which MDL may notify the welded party to take away or return the excess imbalance (see ILON). The October 2011 Change Request does not propose changing the definition.
RPO	'Reasonable and Prudent Operator'. A defined term in the MPOC referring to a standard for performance equal to or better than good industry operating practice relative to recognised international practice. The October 2011 Change Request does not propose changing the definition.
Shipper	A pipeline user that has contracted for the TSO to transport gas (see TSA).
tolerance	An amount of the peak daily flow, DOIL or ROIL (depending on the context) as set in Schedule 7 of the MPOC, below which Welded Parties can operate without consequences.

TSA	'Transmission Service Agreement'. The contract between a shipper and the TSO to transport gas.
UFG	'Unaccounted-for-Gas'. This is a change in Line Pack that cannot be identified to a user, and represents the inherent errors in metering gas.
VTC	'Vector Transmission Code'.
Welded Party	Defined by the MPOC as ' <i>...the person named as a welded party in a valid and subsisting ICA.</i> ' The October 2011 Change Request does not propose changing this definition.

Appendix A Summary of submissions on the October 2014 Change Request

Gas Industry Co's contractual role under the MPOC is limited to making a recommendation to supporting a change request (or not). It does not provide for conditional support. All Gas Industry Co's comments below should be read with this in mind. This brief summary identifies the salient points of industry submissions and cross-submissions, to provide context. However, it does not purport to cover all points made, or to represent any submission in a particular way, or to be the authoritative reference point on all submissions. All submissions and cross-submissions are available for full reference at www.gasindustry.co.nz. The summary also does not capture all of the matters that Gas Industry Co has taken into account in its determination.

Topic	Submitter	Submission	Cross-submitter	Cross-submission
General	CHH	Causers of pipeline balancing should pay those costs		
General	CHH	Support the industry working group		
General	CHH	Support MGUG submission		
General	CHH	Fact that there are significantly differing views amongst submitters about costs indicates the CR may not change behaviour because signals are too difficult to understand		
General	Genesis	Best practice for any regulatory solution to be proportional to the corresponding market problem or need. Given decline in balancing since 2006, no justification for the costs imposed by implementing daily Cash-Outs.	MDL	Contradicts 2009 Genesis statement where it supported daily Cash-Outs of excessive operational imbalances.

Topic	Submitter	Submission	Cross-submitter	Cross-submission
General	Genesis	MDL has commercial interest in changing MPOC to favour Maui field. Role of GIC as independent decision maker is critically important. Market participants need to be sure that GIC is not bound to accept MPOC change request and that its discretion is unfettered.	Nova	We note that there is a trade-off in how Line Pack is managed. On the one hand high Line Pack may result in higher costs for some producers but high line-pack also supports more robust and resilient security of supply as Line Pack can be used to buffer short term supply/demand imbalance events. Lower Line Ppack results in less room for management of contingent events and may affect the ability of some direct connect users (power stations for example) to access gas due to minimum pressure requirements.
General	MDL	Improvements in flexibility in GSAs, downstream reconciliation, and availability of data are not pre-conditions for MBB		
General	MDL	Difficulties in improving balancing through the years indicates that collaborative approach may not work.		
General	MDL	MBB is an evolution from B2B, which was always an interim step		
General	MDL	If MBB not implemented, emsTradepoint market could be prejudiced		
General	MDL	Users are best placed to balance the system		
General	MDL	MDL has sought to avoid triggering a material adverse effect by designing the CR to be compatible with the VTC. Other changes, such as a monthly wash-up of balancing-related funds or revising the peaking regime, could be pursued after MBB is implemented	Vector	Vector has been and continues to be willing to engage and collaborate. Coordination is important to evolutionary convergence. Vector expects to finalise a material adverse effect notice shortly. In addition to the matters set out previously, MBB will adversely affect Vector's interruptible contract arrangements, an important tool in managing capacity congestion on the Vector pipeline. Also, congestion management arrangements being developed by GITAWG are unlikely to proceed if MBB is implemented.
General	MDL	B2B framework is not a valid counterfactual		

Topic	Submitter	Submission	Cross-submitter	Cross-submission
General	Methanex	Supports objective of MBB regime on Maui pipeline. Support in general terms the introduction of daily balancing, provided certain changes are made that enable pipeline users to self-balance (which could include moving the start of the gas day, altering the timing of ID cycles and providing more nomination cycles during a day)		
General	Methanex	Supports development of a working group		
General	MGUG	Support Pipeline Management Working Group		
General	MGUG	Support development of more liquid wholesale market but not convinced this should be an argument supporting the CR		
General	MGUG	Would be helpful to have GIC in Pipeline Management work stream		
General	MGUG	Not clear why EU code is relevant for New Zealand; also, EU code includes greater regulator oversight on balancing		
General	MRP	Support collaborative approach by industry. Would prefer the CR to be held in abeyance until industry workgroup reports back on its investigations		
General	MRP	Supports adoption of an arrangement similar to EU code -- but design has to be based on NZ requirements, be comprehensive, and have input from all interested industry participants	MRP	Under EU Code, there is daily allocation and TSO cashes out shippers on a daily basis. MBBCR does not include daily allocation and would cash out welded parties, leaving welded parties and in particular Vector Transmission to undertake this function
General	Nova	Any code change must ultimately benefit consumers through improvements in pipeline operations, rather than be a redistribution of shippers' costs		
General	NZS	Demand volatility caused by electricity spot market and hydrology needs to be considered		

Topic	Submitter	Submission	Cross-submitter	Cross-submission
General	NZS	If CR is supported, nomination cycles need to be reviewed: intraday 4 should be no earlier than 2000 hours		
General	Shell	Support MBB providing that it is implemented with daily Cash-Outs and in accord with good international practice, as MDL has proposed		
General	Trustpower	Need wash-ups of balancing and peaking pool charges		
General	Trustpower	If CR supported, participants should be given at least 6 months' lead time		
General	Vector	Supports collaborative approach by industry; does not support CR	MDL	Sceptical of claims that satisfactory balancing solution can be found by consensus--have attempted on and off for years. Notes that Vector expressed similar concerns in 2008.
General	Vector	May be grounds to issue a material adverse effect notice: - material increase to Vector's liability for Cash-Outs - increased operational expenditure on billing and associated administration due to increased Cash-Out transactions; - cost of potential changes to VTC to ensure compatibility; - potential Commerce Commission issues around passing on of daily Cash-Outs; - increased pressure for capex to improve tools for shippers to manage their imbalance	MDL	Vector has had ample time to make its assessment and offer evidence in support of these claims but has not done so. Disagree that MBBCR would have a material adverse effect.
General	Vector	Concerned about impact of daily Cash-Outs on MDL's regulated revenue. Believes there is a risk that MDL will not implement this CR if the Commerce Commission views Cash-Outs as a transmission charge rather than a balance cost, as this would increase volatility in MDL's allowable revenue calculations and the risk of price path breach.		
General	Vector	Unclear what MDL's "true costs" of balancing are		

Topic	Submitter	Submission	Cross-submitter	Cross-submission
Process	CHH GGNZ	Change request should be compared with both status quo and supported B2B change request		
Process	Contact EMS	Change request should be compared against current operation of MPOC as B2B is unlikely to be implemented		
Process	MGUG	Status of B2B is not clear - creates ambiguity and uncertainty	MDL	B2B changes will not be implemented without MBBCR.
Process	MRP	Unless B2B CR is cancelled, CBA should compare both B2B and MBB with status quo		
Process	Nova	CR should be compared against B2B		
Process	OMV Shell	CR should be compared against status quo, as MDL has indicated it will not implement B2B		
Process	Vector	Should be certainty about status of B2B; GIC should seek from MDL a statement about whether it consents to B2B as supported and if not, on which grounds it relies to withhold consent	Vector	MDL has not provided grounds for withholding consent to B2B. Vector is concerned about the implications for future governance and the uncertainty it brings.
Balancing actions	MDL	90.6% of fuel gas costs (\$1-\$1.2 million) spent on pressure management		
Balancing actions	MDL	Fuel gas expenditure is not recoverable; if compressor not operated, projected increase in net balancing gas costs would be apprx \$3 million	Nova	MDL states that the estimated cost of fuel gas for compressor operation (which they state is primarily to support pipeline imbalance – which is difficult to verify) is circa \$1m p.a. Nova does not believe that MDL is incurring this cost as we understand most of MDL's compressor fuel gas is sourced from UFG, which costs MDL nothing. UFG is the net result of metering imperfections and is akin to free issue gas. (We note that MDL could have used the actual historical cost of fuel gas but instead have used the emsTradepoint gas price in their cost estimates.) In addition to UFG being used as compressor fuel gas, we note that MDL also sold 223TJ UFG gas during 2014 through the BGX to

Topic	Submitter	Submission	Cross-submitter	Cross-submission
				third parties, receiving revenue of \$374,000. This does not appear to be taken into account.
Balancing actions	MDL	Cash-Out charges are part of balancing wash-up; surplus returned to shippers in following year		
Balancing actions	MDL	Efficient flexibility market cannot emerge until inter-day Line Pack flexibility is priced, which will occur under MBB		
Balancing actions	MDL	Little improvement in primary balancing performance at TP welded points since 2007		
Balancing actions	MDL	Increasing the number of spot transactions would also increase the spot market liquidity, resulting in wider benefits		
Balancing actions	MDL	Unlikely to be demand for Line Pack flexibility services until a daily delivery incentive is in place		
Balancing actions	MDL	MBB would introduce spot market price-related benefits that the draft CBA does not recognise		
Balancing actions	MDL	Current primary balancing incentives make it difficult for MDL to satisfy its MPOC obligations	Nova	It has always been understood by all parties to the MPOC that achieving a perfect match of metered injection or offtake vs scheduled quantity was an unrealistic expectation. The code therefore provides

Topic	Submitter	Submission	Cross-submitter	Cross-submission
				for imbalance and its management in a number of ways.
Balancing actions	Nova	Implementation of B2B would resolve issue of socialisation of balancing costs and improve incentives for primary balancing, since parties would be likely to incur peaking charges in resolving imbalance within a day.	Nova	<p>Nova agrees that there is socialisation under the status quo but in the opposite direction to that advanced by OMV and MDL.</p> <p>Mokau compressors are primarily operated using positive UFG gas that has no cost to MDL. The estimated cost of compressor gas is only an estimate if MDL actually had to purchase gas for compressor usage which we understand is not the case. MDL simply utilise free positive UFG gas.</p> <p>MDL over-recovers actual balancing costs from Vector transmission welded parties through Cash-Outs and Incentives Pool costs. For the 2014 calendar year Nova estimates that MDL over recovered balancing costs by \$105,713. This is comprised of:</p> <ul style="list-style-type: none"> • actual costs of buying and selling balancing gas (puts and calls \$464,495) • UFG sales revenue of \$374,050 • Cash-Out recoveries from Vector transmission welded parties \$196,158 (excluding Dec 2014) <p>Nova has sourced these values from data from BGX and OATIS. Incentive pool costs and non-</p>

Topic	Submitter	Submission	Cross-submitter	Cross-submission
				Vector welded point Cash-Out cost are not available but have been assumed to have no material impact. Consequentially, the over recovery of balancing charges is returned to all gas consumers through reduced transmission charges, including those who do not make use of the common Line Pack flex. The MBB proposal will only exacerbate the current cross subsidy; although as it stands, that cross subsidy is not significant under the status quo.
Balancing actions	OMV	Balancing performance of pipeline users has not improved since 2007/08.	GGNZ	Chart simply shows Line Pack change distribution, does not factor in MPOC nominations so does not represent users' ROI positions
Balancing actions	OMV	Balancing period being shortened to 24 hours, in line with current MPOC	GGNZ Nova	Shippers have real time obligation to trend balancing positions to zero, and Balancing Agent manages real-time Line Pack Shortening of balancing period to less than 24 hours (i.e., end of same day) is not in alignment with current obligations of MPOC
Balancing actions	Vector	CR does not properly signal true balancing costs, as daily Cash-Outs not related to whether any balancing action was needed -- contrary to GPS principle that full costs of producing and transporting gas are signalled to consumers		

Topic	Submitter	Submission	Cross-submitter	Cross-submission
Balancing actions	Vector	CR increased financial responsibility, but daily Cash-Outs on their own will not incentivise better primary balancing. Significant transaction costs would provide strong incentive, but prices linked to open market prices will create weak incentives; if Cash-Outs are returned through reduced transmission fees the following year, incentives will be weakened further	MDL	It does not follow from the proposition that, on an aggregate basis, Cash-Outs should not be considered as a cost that, at the individual pipeline user level, it is rational to accept being cashed-out. This is because that cost will be neutralised the following year. Inconsistent with what Vector said in 2008, where Vector identified weak primary balancing incentives as 'the key problem with the current arrangements' and supported daily balancing approach.
Balancing Gas purchase	Contact	Concern about using BGX for balancing gas	Contact	If, as per section 11.10 of MPOC, MDL sourced Balancing Gas from emsTradepoint, then all parties would have an added tool to self-balance. As the same outcome could be achieved through the B2B CR, there is no need for the MBB CR's daily Cash-Outs.
Balancing Gas purchase	Genesis	MDL is already obligated by clause 11.10 of MPOC to use a spot market for balancing but has refused to follow this requirement	MDL	Daily settlement of imbalances necessary before MDL can have the confidence to use a spot market for balancing. Only daily imbalance settlement would provide required confidence that those trading a spot product will deliver or offtake the gas in a timely fashion.
Balancing Gas purchase	MDL	Spot market liquidity should increase		
Balancing Gas purchase	Methanex	Should use standard product, with obligation to use a trading system to source Balancing Gas		
Balancing Gas purchase	Methanex	Want principles for determining average market price set out in Code.	Methanex	There are elements of discretion in the CR that allow MDL to transact at price not reflective of the market price, which we consider detrimental. But on balance, consider CR preferable to status quo in this regard.

Topic	Submitter	Submission	Cross-submitter	Cross-submission
Balancing Gas purchase	Nova	Unclear how daily Cash-Out will work in practice with the emsTradepoint market. Should be incumbent on MDL to structure its charges so they reflect the true cost of Balancing Gas requirements. Important that trading platform remains under competitive pressure to meet market's needs		
Balancing Gas purchase	Nova	Daily Cash-Outs should only be implemented once there is a gas trading market operating with sufficient liquidity to ensure all balancing trades can be completed on-market without undue impact on market prices	MDL	Disagree. Do not see how liquidity will develop without a daily delivery incentive.
Balancing Gas purchase	Nova	Proposed Cash-Out price calculation is subject to MDL discretion about minimum trading volume. This creates significant uncertainty and risk for shippers.	Nova	The calculation therefore sets up a market price that is always at a discount to the traded price on a day. If the market is relatively illiquid (which is the case currently) then the Cash-Out prices could well end up being not materially different to the current BGX prices. The adjustment to the Cash-Out prices while limited to 10% is at MDLs discretion; and given their preference for the Cash-Out prices to act as an incentive for users to self-balance (as opposed to be cost reflective – see para's 127 and 128, MDL is likely to set the adjustment at the 10% maximum. As such, any estimates of cost associated with balancing costs should be performed using the 10% discount/premium.
Balancing Gas purchase	Nova	If the charges to users of balancing are cost-reflective, it may potentially drive pipeline users to use that market and create imbalance to buy and sell gas.	MDL	It does not follow from the proposition that the overall cost to pipeline users would not increase that costs will not increase for individual or a subset of pipeline users. Expect cost redistribution.

Topic	Submitter	Submission	Cross-submitter	Cross-submission
Balancing Gas purchase	Trustpower	CR should be deferred until participants can have confidence that there is sufficient liquidity in the market for them to manage their imbalances and discover an efficient market price. Also need confidence that MDL will use the market in preference to the BGX.	EMS	Markets will be as liquid as they are required to be, provided no barriers to entry. Markets do not provide liquidity; its participants do.
Balancing Gas purchase	Trustpower	Concerned that participants will be cashed-out at the most extreme price countering their position, not the actual cost to the pipeline operator		
Balancing Gas purchase	Vector	Concerned about calculation of market price -- can be skewed by small purchases and are subject to an adjustment. Will essentially be imbalance charge, as not related to balancing actions. Concerned MDL can avoid spot market to set balancing prices in certain circumstances at its discretion. Further CR removes requirement of section 11.10 for balancing prices to reflect prices in any liquid market	<p>Nova</p> <p>Shell</p> <p>MDL</p>	<p>Nova agrees with Vector's submission that the calculation of benefits of utilising emsTradepoint pricing in estimating balancing costs does not take into account the fact that the MPOC provisions as drafted only utilise emsTradepoint pricing in certain circumstances, and that MDL will use other prices instead which reduce the claimed benefits. Nova agrees with Vector that the retention of discretion over the discount/premium factor (up to 10%) together with the utilisation of lowest/highest prices makes estimation of actual balancing costs difficult and OMV's calculations are overstated in terms of the benefits and understated in terms of the costs.</p> <p>MDL is already setting market reflective prices for <u>balancing gas</u>. MDL is referencing the BGX which is a <u>balancing market</u> -- with stringent obligations for delivery.</p> <p>Mismatch prices only relevant for peaking charges and mismatch Cash-Outs. Balancing powers Vector refers to are Cash-Out Sell and Buy Prices, which will reflect</p>

Topic	Submitter	Submission	Cross-submitter	Cross-submission
				liquid market prices in all but extraordinary circumstances.
Balancing Gas purchase	Vector	Balancing costs should already be based on liquid spot market prices by virtue of section 11.10 of the MPOC. Efficient pricing is not conditional on CR, nor should MDL's participation in a liquid spot market for balancing.	EMS	MDL is not setting mismatch prices using spot market prices, and no party has successfully disputed Cash-Out charges on the grounds that the prices are incorrect. GIC must consider that conditionality exists and the benefits of spot market prices can only be attributed to the MBB CR.
Cash-Outs	Contact	Cash-Out price formula affected by small market trades at extreme prices => not reflective of actual costs.		
Cash-Outs	MDL	MDL will not consent to B2B CRs separately from this proposal		

Topic	Submitter	Submission	Cross-submitter	Cross-submission
Cash-Outs	MDL	Cash-Outs have no impact on the total cost of balancing to end users as a whole	Nova	MDL and other proponents of the MBB change request (OMV and emsTradepoint) point to the use of market based pricing as a benefit compared to the use of the BGX pricing current. MDL expect that actual balancing gas actions will remain the same or improve, (which we agree with). Given then that the quantities are relatively small and the quantity of time where trades are performed is less than 8%, then any improvement in liquidity or depth in that market is likely to be immaterial. As such, the fact that MDL procures balancing services from a spot market rather than the BGX cannot be expected to have any material benefit for that spot market. In addition, MDL can already purchase balancing services from that market under the status quo as much as it can under MBB.
Cash-Outs	MDL	If balancing gas transaction costs remain static, an increase in Cash-Out activity will only effect cost distribution.	MDL	Cash-Outs are not a cost in and of themselves--they are financial transfers within the pipeline user community.
Cash-Outs	MDL	MBB Cash-Out prices would reflect spot market prices, preserving incentive on users to take balancing actions		
Cash-Outs	MDL	Setting of percentage adjustment factor would have an important role in determining the net cost to downstream users		
Cash-Outs	MDL	MDL makes no commercial gain from balancing		
Cash-Outs	MDL	Cash-Out charges are part of balancing wash-up		
Cash-Outs	MDL	Lower MDL operating costs will likely lead to lower transmission tariffs over time		
Cash-Outs	MDL	Delivery points tend to have a higher average ROI than receipt points when pressure is outside of TTP envelope		

Topic	Submitter	Submission	Cross-submitter	Cross-submission
Cash-Outs	MDL	TPWPs historically have largest imbalances, followed by receipt points and Maui Direct Connects		
Cash-Outs	MDL	The percentage adjustment to the average market price represents pure incentive		
Cash-Outs	Methanex	Do not support an adjustment fee to Cash-Out prices, and in any case, 10% is excessive. Any adjustment fee needs to be revenue neutral and to cover any legitimately incurred costs. Consider GIC should be responsible for determining whether fee is necessary, setting level, and determining distribution of any surplus.	Methanex MDL	Only one European TSO has adopted 10% adjustment rate. Others cited by MDL have nominated more modest, in some cases nominal, price adjustments. 10% is too large in this situation. Adjustment will initially be set at a level predicted to result in net annual Cash-Outs that are similar to current levels. Adjustment component will feed into the balancing wash-up and will be recovered the following year.
Cash-Outs	Methanex	Marginal price is incentive enough for users to attempt to self-balance -- no adjustment needed. Also, it is inequitable to impose a fee on users who seek to self-balance but are prevented from doing so by shortcomings under the current regime.		
Cash-Outs	MGUG	Using energy-weighted average price should be subject to minimal requirements on volume; thin trading could be price distorting		
Cash-Outs	MRP	Estimate that if proposed arrangement had applied last year there would have been Cash-Outs on the North pipeline on 54 out of 61 days in June and July -- whereas there were no ROI Cash-Outs during that time. Therefore difficult to see how industry costs will not increase and be passed on to gas customers		
Cash-Outs	NZS	Disagrees with Cash-Outs where no balancing action occurs		

Topic	Submitter	Submission	Cross-submitter	Cross-submission
Costs and Benefits	CHH	Change request appears to disconnect pipeline balancing charged from actual pipeline balancing costs - seems inefficient as likely to increase charges to users in excess of actual costs		
Costs and Benefits	CHH	Question whether strong incentive for primary balancing is a benefit: seems likely that consumers will respond by curtailing economic activity, the cost of which would be greater than the actual cost of balancing. This would be inefficient and so a net cost of the change request.		
Costs and Benefits	Contact	Concerned CR will lead to shippers incurring additional costs without additional benefits. Current balancing costs (~\$670k) are not significant, provide equal benefit to all shippers, and are an acceptable amount to be socialised. CR will lead to an increase in Cash-Outs because less time to self balance and smaller imbalance tolerances.	Contact	Intraday nominations can only correct small on-the-day demand changes, so downstream users would bear most of the imbalance effect of daily demand swings should Line Pack flexibility not be available for balancing. Therefore, where other balancing gas is not available on a more cost effective or operationally efficient basis, using Line Pack to balance daily fluctuations is the most efficient option.
Costs and Benefits	Contact	MDL has not quantified costs of balancing. Fuel gas costs are not significant compared to quantum of gas shipped on Maui and should be socialised. Running costs of compressors should be included in MDL's allowable income.	Contact	if compressors are required to manage daily Line Pack swings, this action is in interests of all pipeline users and if it minimises costs to users then it should be continued (satisfies Gas Act 43ZN(b)(iv)).
Costs and Benefits	Contact	Contact will require IT changes estimated at at least \$100k, as well as additional personnel time at \$50-100k/annum.		
Costs and Benefits	Contact	CR will increase frequency and cost of balancing, which will increase costs passed on to consumers		

Topic	Submitter	Submission	Cross-submitter	Cross-submission
Costs and Benefits	EMS	CR unbundles transportation of gas and flexibility, which removes the cross-subsidisation of costs caused by users who have variable demand profiles onto those users that have predictable and flat profiles. CR places cost of flexibility in the hands of those who use it rather than those who do not. At moment, TPWPs Rotowaro and Frankley Road are largest users of pipeline flexibility, the cost of which is subsidised by the remaining delivery WPs and all receipt WPs		
Costs and Benefits	EMS	Cash-Out price benchmarked against volume weighted average prices of the short term market for gas delivered in the same period. This price can result in both gains and losses to shippers in equal measure, depending on their own contract prices and the direction of their imbalance. Therefore, Cash-Outs must be considered as neutral.	EMS NZS	Net expenditure incurred by MDL will be rebated/supplemented via transmission tariffs the following year. Prices may create ability and incentive for shippers to over- or under-nominate deliberately, to take advantage of arbitrage opportunities
Costs and Benefits	EMS	Nothing in the CR that requires investment in additional operations by shippers		
Costs and Benefits	EMS	Returning the imbalance positions to within tolerances on a daily basis will greatly reduce the frequency of true balancing actions. Also, where balancing is required, it will be executed at a much tighter spread than that currently seen on the BGX. Since balancing costs are recovered in the tariff, these factors will lead to a lower and more stable transmission tariff.		

Topic	Submitter	Submission	Cross-submitter	Cross-submission
Costs and Benefits	EMS	Price signals will inform investments in swing management, which will provide benefits including: - lower wholesale gas prices - competitive flexibility services being attracted to the market - increased security of supply as supply diversity increases		
Costs and Benefits	EMS	CBA should not consider industry-wide costs; appropriate test is whether the affected parties (those who currently pay the subsidy) would bear more or less cost against the counterfactual	EMS	Parties that have an average amount of imbalance will be cost-neutral against the counterfactual; those who have less imbalance will see a net benefit; those who use more flexibility than average will see a net cost.
Costs and Benefits	Genesis	CR will result in 3x increase in balancing costs for customers and gas users, which will heavily outweigh any perceived benefits	MDL	The MBBCR does not impose any additional transactions costs on users, so Genesis' assertion of a 3x increase should be ignored.
Costs and Benefits	GGNZ	CBA needs to be quantitative and needs to consider both productive and allocative efficiency. Difficult to see how CR can appropriately balance ST and LT concerns, given it has not had regard for problem definition, there are no material productive and allocative balancing problems, and there is a counterfactual industry pipeline management process already underway.		
Costs and Benefits	GGNZ	MDL should be cost neutral under CR. Not clear how the additional charges under CR would be treated by MDL		
Costs and benefits	MDL	Net costs to end users downstream of TP welded points would be similar to current levels if 2.5%-4% adjustment factor applied		
Costs and benefits	MDL	Some costs due to Line Pack flexibility overuse wouldn't be incurred if Line Pack flexibility was only drawn on intra-day	Nova	In para 100 and 118, MDL notes that overuse of flexibility that gives rise to the need for MDL to give curtailment notices to producers and this causes negative externality costs on them. They say that the proposed changes will reduce the need for curtailments. Nova disagrees with this assertion as all MBB will do is result in voluntary curtailment by users through the nominations process instead. As such,

Topic	Submitter	Submission	Cross-submitter	Cross-submission
				producers (in the aggregate) will be neither better nor worse off than under the status quo.
Costs and benefits	MDL	Lack of a transparent price for using Line Pack flexibility on the Maui Pipeline, which makes line Pack flexibility use inefficient	Nova	Nova agrees in principle that the lack of pricing of Line Pack flexibility is a system inefficiency, but it is one that is so minor as to be outweighed by the transaction costs of putting a price on it. Especially since the provision of Line Pack flexibility is a consequence of wider constraints on pipeline users including, but not limited to: - lack of availability of validated metering data until the middle of the next day (information constraint), - limited opportunities to revise nominations to reflect changes in supply/demand (IT system constraints), and - lack of daily consumption data for retail customer groups (information constraint). Line Pack flexibility is common to all users and its primary function is to provide a workable low cost solution to information deficiencies and IT system constraints inherent in the gas industry. As noted above, Line Pack flexibility is also such a small quantity relative to the flexibility requirements of gas consumers that it does not, and will never, effectively compete with gas storage options or the provision of flexible supply from gas producers. It follows therefore that any inefficiency

Topic	Submitter	Submission	Cross-submitter	Cross-submission
				arising by Line Pack flexibility not being priced is immaterial.
Costs and benefits	MDL	MBB would improve on this and would reallocate flexibility to users		
Costs and benefits	MDL	Costs of managing the risks in the supply chain would reduce, resulting in a benefit to end-users		

Topic	Submitter	Submission	Cross-submitter	Cross-submission
Costs and benefits	MDL	Fuel gas costs could reduce by up to \$1.2 million		
Costs and benefits	MDL	Inefficient contractual terms will inhibit the development of a competitive flexibility market	Nova	MDL claim that as Line Pack is a source of unpriced flexibility and that crowds out the development of other supply flexibility options. Nova believes that even if that is correct, it is immaterial compared to the flexibility already provide by gas production fields and gas storage operations. Working Line Pack currently is of the order of +/- 30-40 TJ's depending on the time of year. That flexibility is described as a common pool resource and in reality can only be utilised once before having to be replenished – i.e. it cannot be utilised repeatedly over multiple days. In contrast, gas field production routinely swings by 200-250 TJ's/day between demand low points and high points during a year (and likely more in those years with high or low hydro inflow sequences driving electricity power station consumption). Further, gas producers can

Topic	Submitter	Submission	Cross-submitter	Cross-submission
				maintain the swing across long periods of time, providing several PJ's of flexibility across a season or a year. In addition, Contact's gas storage facility can hold in the order of 10 PJ's of gas and can inject and extract at up to 40 TJ's per day currently. A one-off +/-30 TJs shared by all pipeline users, including producers, in our view is immaterial in terms of providing the flexibility that customer demand profiles require. Most, if not all, user swing requirements are currently met through gas contracts/private storage and not from the very limited Line Pack that MDL provides. Therefore it is a stretch of credibility to suggest that Maui Line Pack competes with such sources. In addition, the "common" nature of it means that pipeline users cannot rely on it being available and therefore must make other arrangements.
Costs and benefits	MDL	Some issues, such as problem definition, are not relevant to the CBA		
Costs and benefits	MDL	MBB amendments present an improved price signal to users of the cost of Line Pack flexibility, resulting in improved allocative efficiency		
Costs and benefits	MDL	MBB will reduce cross-subsidisation, resulting in more efficient use of Line Pack flexibility		
Costs and benefits	MDL	MBB reallocates risk to parties that are better able to manage it		
Costs and benefits	MDL	Costs of supply chain risk management should decrease, resulting in end-user benefit		

Topic	Submitter	Submission	Cross-submitter	Cross-submission
Costs and benefits	MDL	Merit in focussing on free-rider problem identified by Covec in section 2.1.3 of draft report	Nova	In relation to the negative externalities being manifested as social costs Nova notes that: - actual compressor fuel gas costs to date have largely been at low or no cost to MDL - demand driven curtailments will occur under both MBB and the status quo in the aggregate, they just occur through different mechanisms and affect different parties - no evidence has been made public on the impact on upstream producers. We also note that holding Line Pack pressure at a low level also has impacts on users' ability to access gas as well as reducing system security and resilience to a loss of supply event
Costs and benefits	MDL	Shippers will not necessarily have systems upgrade costs		
Costs and Benefits	MGUG	Users expect that their costs under MBB will go up, so they will be incentivised to avoid those costs. Unclear whether this is the most effective mechanism for balancing the pipeline or whether it would give rise to unintended consequences.		
Costs and Benefits	MGUG	Big challenge for end user is understanding how CR will impact day to day operations on the Vector pipeline		
Costs and Benefits	MGUG	Concern that transaction costs will increase without any additional benefit	MGUG	B2B was a pragmatic first step with costs only when there was balancing action. Concern that MBB merely increases costs without any additional benefit over B2B

Topic	Submitter	Submission	Cross-submitter	Cross-submission
Costs and Benefits	MRP	Agree with conclusions of outline of CBA report: <ul style="list-style-type: none"> - Balancing costs much less significant than in past; - no clear problem definition of pipeline management issues; - lack of tools available to shippers to manage daily Cash-Outs; - unclear if high pressure incidents are result of shippers' mismatch position, producers' flat profiles, other reasons, or some combination 		
Costs and Benefits	MRP	Southdown has online metering and 24/7 staff; its operations won't be affected, except that running mismatch tolerances for the station will probably be tightened.		
Costs and Benefits	MRP	Impact to retail business hard to quantify. Most likely MRP will be subject to increased and ongoing balancing gas charges, the value of which is impossible to predict. In addition, likely that Vector will incur additional costs from MBB, as it will need to provide validated delivery data on the weekends. The increased cost of this and other changes Vector implements will be passed onto shippers and from them onto retail customers. Daily allocation is necessary, but unable to estimate its cost.		
Costs and Benefits	Nova	Does not agree that shippers and welded parties face uncertain consequences from running an imbalance: Cash-Outs will occur if imbalance not brought back to zero, and costs of peaking charges and Incentives Pool scheme can be managed as MDL publishes Line Pack conditions and when it transacts balancing gas on a day		
Costs and Benefits	Nova	Would be wrong to treat improved Line Pack as providing a benefit as it cannot be shown that there will be an improvement or benefit. In fact, if charges to users of balancing are cost-reflective, pipeline users may create imbalance to buy and sell gas.		

Topic	Submitter	Submission	Cross-submitter	Cross-submission
Costs and Benefits	OMV	Direct costs of Cash-Outs cost users \$500k/yr under status quo; under MBB, could range from \$360k-1.8m/yr, depending on percentage adjustment to average market price	GGNZ	Margin spread will reduce under CR, but status quo requires Balancing Agent to use a liquid spot market anyway, so benefits of reduced margin spread shouldn't be afforded any weight.
Costs and Benefits	OMV	Indirect costs (balancing gas, managing UFG, etc) costs downstream users \$40k/yr; under MBB, could range from \$250k benefit to \$220k cost. For direct connect parties, MBB will remove cross-subsidy		
Costs and Benefits	OMV	There is a break-even point for the costs to the downstream users between the status quo and the MBB proposal -- that is, a point for the MDL adjustment that would mean no additional costs for the downstream	OMV	Causers of imbalance should face the cost of that imbalance. The CR comes closer than any alternative considered. MDL should set the percentage adjustment at a level that provides cost neutrality to the Vector TPWPs -- then there can be no material adverse effect.
Costs and Benefits	OMV	Some companies may face increased costs in systems or resourcing, but these costs would be taken to meet daily delivery obligations that already exist under the MPOC therefore , they should be excluded from the CBA	Nova	To the extent that changes to MPOC increase and make more difficult the ability of pipeline users to achieve balance, then the costs of mitigation should be taken into account.
Costs and Benefits	Shell	MPOC flexibility mutes price signals and is a significant barrier to wholesale market development		
Costs and Benefits	Shell	A healthy wholesale market that reflects the value of gas at the time of use has the potential to generate significant allocative efficiencies		
Costs and Benefits	Shell	Cost of unnecessarily high backpressure that arises because of poor primary balancing is of significant magnitude and must be taken into account	Contact	Shell has not quantified magnitude of the costs, nor proven a link between unstable line pressure and poor primary balancing. Originally supported B2BCR will address Shell's issue

Topic	Submitter	Submission	Cross-submitter	Cross-submission
Costs and Benefits	Vector	in FY2014, Vector welded points had Cash-Outs of \$670,000. Under CR, Cash-Outs likely to be between \$1-\$5 million -- an increase of \$642,800 to Vector transmission. Potential increase to Vector's gas trading business is \$533,000.	EMS Vector	Vector's \$5m estimate includes \$1.5m for Cash-Out transmission price, which would also be payable under the counterfactual; and \$541k for Cash-Out trading fee price, which in some form is always incurred when correcting imbalance; both should be excluded. The estimate does not include \$1m tariff rebate. EMS calculates a cost of \$1.3m for all large Vector welded points. Vector estimates cost of providing real-time imbalance information for all ToU metering would be \$422,250/yr plus \$65,000 one-off system upgrade.
Costs and Benefits	Vector	CBA should assess MBB prices on assumption that maximum of 10% adjustment will be used	EMS	Extremes should not form basis of analysing likely CBA outcomes; should be done using most likely assumptions. For this, should use 4%, as it may provide necessary balance between incentive and behaviour improvement
Gas Act & GPS objectives	CHH	GPS should be overriding consideration in considering Code changes		

Topic	Submitter	Submission	Cross-submitter	Cross-submission
Gas Act & GPS objectives	MDL	<p>MBB helps meet s43ZN objectives by:</p> <ul style="list-style-type: none"> - Evolving the wholesale gas market - Removing barriers to competition - ensuring gas delivered in safer, more efficient and more reliable manner - Enhancing incentives for gas transmission facility investment - Putting downward pressure on delivered gas costs and prices - Better managing risks to security of supply - Signalling full cost of producing and transporting gas 	Vector	<p>MBB is contrary to s43ZN objectives because:</p> <ul style="list-style-type: none"> - It reduces the efficiency of delivery of gas to customers: without tools to avoid being cashed-out, shippers will be cashed-out more frequently, and over-recovery will be returned through tariff adjustment the following year. As actual costs are already being recovered, daily Cash-Outs introduce a more costly way to recover costs. - It does not promote access to essential infrastructure: pipeline flexibility is an essential part of the pipeline infrastructure. MBB inhibits users' access to that infrastructure - It does not minimise barriers to competition: if each potential new user has to invest in storage or access storage through a third party, that poses a barrier to entry - It does not subject costs and prices to sustained downward pressure: several submitters have indicated significant costs they are likely to incur. Cost should only be incurred where they will deliver benefits to the market and promote downward pressure on prices.
Gas Act & GPS objectives	MDL	<p>MBB helps meet GPS objectives by enhancing efficiency for short-term gas trading</p>		

Topic	Submitter	Submission	Cross-submitter	Cross-submission
Gas Act & GPS objectives	OMV	<p>CR supports GIC's objectives under the GPS:</p> <ul style="list-style-type: none"> - users will be able to use the spot market, leading to a more competitive market-based outcome; - barriers to competition in providing spare capacity for balancing and security of supply are eliminated; - shippers can compete based on the efficiency of their internal systems, helping to maintain downward pressure on costs; - risks relating to system stability and security of supply will be reduced - full costs of flexibility will emerge and be correctly costed - incentives for investment in storage or other forms of flexibility are created or enhanced; 	GGNZ	<ul style="list-style-type: none"> - facilitating spot market is not GPS objective; - barriers to access emsTradepoint and BGX are same under status quo and CR; - incentives for investment in storage is not an objective; - delivered costs will increase as shippers pass through additional Cash-Out costs; - CR does nothing to address security of supply risks and doesn't materially change balancing agent's operational ability to act on Line Pack
Information & Tools	Contact	Lack of daily information and tools to self-manage is an issue. MDL has not replicated the tools that assist balancing and trading for the shipper.	Contact	Little that shippers can do in an unforeseen event if a nomination cycle is not available or the timing of nominations does not allow full rectification of gas flow situation
Information & Tools	Contact NZS	Nomination cycle times make balancing difficult: only two change cycles during normal working hours	MDL	MDL started consultation on this issue and held a workshop in January 2015.
Information & Tools	EMS	Most of the gas market has ToU meters => primary cause of imbalance and balancing lies with sites that do not suffer from poor data quality (non-ToU is 10% of total demand through Rotowaro, for example)		
Information & Tools	Genesis	Other jurisdictions with similar regimes have implemented tools to mitigate the additional costs of balancing, including daily allocation of mismatch positions that provide the ability for shippers to manage exposure to gas balancing costs	MDL	Shippers already have requirement to balance daily. Shippers may decide to develop tools to mitigate further costs if the tool development is cost effective.

Topic	Submitter	Submission	Cross-submitter	Cross-submission
Information & Tools	Genesis	Current nomination cycles and lack of information remain obstacles to achieving more accurate nominations	Nova	Nova supports Genesis' comment that the current OATIS nominations systems hinders effective intraday balancing due to a number of constraints including (but not limited to): - limited and discrete opportunities to revise nominations to reflect changes in supply/demand conditions - deemed flow rules - availability of validated daily metering data until the day following In addition several balancing tools such as operational profiles and welded point transfers that are available currently become potentially ineffective upon introduction of MBB; further limiting pipeline users' ability to manage imbalances.
Information & Tools	MDL	Maximum annual costs to downstream users because of information gap is between \$590,000 and \$1,431,000.	MDL	No basis for claims that daily imbalance settlement risk cannot be managed until perfect real time information exists. NZ electricity market participants have adapted to market signals and developed methods to more effectively manage imbalance risk. Wholesale gas market should do the same.

Topic	Submitter	Submission	Cross-submitter	Cross-submission
Information & Tools	MDL	Encourage GIC to consider tools and operational regimes to allow Vector direct connect customers more efficient management of positions	Nova	<p>Nova agrees that users are best placed to manage the system; although that is conditional upon users being able to:</p> <ul style="list-style-type: none"> - access the necessary information re consumption to achieve that, and - be able to revise nominations in an unconstrained fashion. <p>Neither of these conditions are able to be met currently. We note in general quantities of gas related to balancing are immaterial in relation to the 180-200PJ's or more of gas being produced, transported and consumed in New Zealand on an annual basis. Line Pack flexibility is also a very minor part in overall supply/demand matching across a month, a season and across years. Gas is subject to significant swings in demand as a result of summer/winter trading usage, profiles of smaller users and electricity generators, hydro firming requirements for electricity generators not to mention major outages at 5 production plants and major consumers such as Methanex. In this context, the availability of a small degree of Line Pack flexibility to accommodate information gaps and IT system constraints is unlikely to have any bearing on decisions regarding gas supply or storage flexibility investment.</p>
Information & Tools	MGUG	Users need appropriate tools to undertake primary balancing, including daily allocation (D+1), intra day cycles, definition of the gas day, and appropriate tolerances.		

Topic	Submitter	Submission	Cross-submitter	Cross-submission
Information & Tools	MRP	Supports introduction of market-based arrangement for the purchase and sale of balancing gas; have no objection in principle to introduction of daily Cash-Outs -- but oppose daily cashouts when mass market retailers have no ability to effectively and efficiently manage their pipeline positions.	MRP	Support implementing purchase and sale of Balancing Gas through market such as emsTradepoint, but do not support introduction of daily Cash-Out, as there is insufficient information to shippers to efficiently and effectively manage such an arrangement.
Information & Tools	MRP	MRP's customer base is almost exclusively residential. Retail business does not know gas deliveries until 5th day of month following and mismatch on 14th of month. With these timeframes, could find out they have been cashed-out up to 35 days after the event. The compounding nature of daily Cash-Outs makes pipeline operations significantly more difficult and probably more inaccurate. Will be virtually impossible for MRP to efficiently manage running mismatch position to the level MDL requires without the introduction of a daily allocation arrangement. This work should become a priority for GIC.	MRP	Further complication is that participants are subject to allocation wash-ups that retrospectively impact their balancing positions at the beginning of each month. Lack of timely quality information on daily delivered gas volumes is of real concern to our retail business. If MBBCR is implemented, problem will be compounded by an unknown Cash-Out volume incurred the previous month.
Information & Tools	NZS	Industrial end users with variable daily gas consumption profiles have limited options to respond as the system rules tighten. MBB will cause operational difficulty and impose penalty charges		
Information & Tools	NZS	CR likely to exacerbate pipeline imbalance issues; does not address root cause of non-alignment in balancing practices. Need to address inactions of users who do not monitor or correct their balancing position. Reducing deadline for Cash-Out has potential to exacerbate swing, as parties overreact to avoid Cash-Outs.		
Information & Tools	NZS	Not all shippers equally able to self-balance. MDL should identify those who do not self-balance, identify their issues, and address their situations appropriately		

Topic	Submitter	Submission	Cross-submitter	Cross-submission
Information & Tools	Trustpower	CR will impose significant inefficiencies on downstream gas users; shifts burden of balancing to participants with least ability to manage imbalance. Shippers with limited flexibility and inelastic demand will be at the mercy of the market with no means to manage moderate deviations, increasing costs to their customers.	Trustpower	CR will force participants to manage daily imbalances based on estimated consumption before even daily consumption reads are available. Without better information, it is highly likely that there will be no significant improvement in balancing behaviour.
Information & Tools	Trustpower	Participants need a clear means for managing imbalance -- could be through a market mechanism, which requires high liquidity, or through the pricing of a park and loan facility on the pipeline		
Information & Tools	Vector	CR ignores developing improvements to transmission access arrangements and downstream allocation, as well as medium term OATIS replacement and residential ToU metering, all of which could improve information and primary balancing		
Information & Tools	Vector	Daily Cash-Outs will unduly penalise Vector shippers who do not have access to information necessary to improve nominations, will impose significant costs on mass-market shipper/retailers, and will pose a barrier to competition.		
Information & Tools	Vector	Does not believe it will be able to reduce its Cash-Out liability under MBB without material investment, and if that is the case for Vector, it must be even more so for mass market shippers		
Line Pack flex	Nova	Seasonal and weekly swing is provided by producers and gas storage. The only swing provided by Line Pack is diurnal, but that is an outcome of decision to use daily (rather than hourly) nominations.		

Topic	Submitter	Submission	Cross-submitter	Cross-submission
Overpressure	Nova	CR does not place enough onus on MDL to best manage Line Pack or reduce costs for consumers. In absence of additional obligations on MDL, there will be no material improvement in Line Pack conditions for producers.		
Overpressure	NZS	Daily Cash-Outs provide incentives to correct, but overall pipeline pressures can be negatively affected; e.g., previous examples of where ILONs were issued for high operational imbalance but pipeline pressures were low		
Overpressure	Vector	<p>CR does not address causes and aggravators of high pressure incidents:</p> <ul style="list-style-type: none"> - lack of information available to shippers to enable them to accurately manage nominations - inflexible nominations, both in terms of timing and inability to profile nominations to account for peaking: daily Cash-Outs should not be considered unless increased nomination times are available. Changing cycle times would be a short-term improvement; - operational restrictions at producer stations mean the amount of flexibility they can provide is limited (and declining as fields age); - restrictions on access to the BGX mean balancing transactions are not made at market prices - no link between balancing costs and causers 	<p>EMS</p> <p>OMV</p>	<p>Currently, parties can park gas in pipeline up to tolerance perpetually and for 72 hours above tolerance. Under MBBCR, MDL will assume title to all parked gas above a reduced tolerance every 24 hours and, as an RPO, be required to manage such title in a responsible manner. EMS considers the RPO standard will require MDL to divest title at the time or at least on the day it assumes it.</p> <p>Key difference between status quo and MBB is at the end of the day: under status quo, MDL must decide whether to take action to correct an imbalance, but users have an ability to correct their positions through ILON process. If Both parties take action, then subsequent corrective actions are needed; if neither act, then pipeline stability issues arise. MBB eliminates the uncertainty, as users are always cashed-out, and MDL is then able to manage the cashed-out gas in a prudent and expedient manner</p>
Peaking	MDL	Peaking charges are negligible and have been excluded from downstream user cost analysis		

Topic	Submitter	Submission	Cross-submitter	Cross-submission
Peaking	MDL	Peakiness is expected to increase under current arrangements; MBB will correct for this		
Problem definition	CHH Contact MGUG MRP	Need a clear problem definition	MDL	Problem is clear: weak primary balancing incentives exist as a result of unpriced inter-day Line Pack flexibility. Absence of imbalance settlement hampers development of spot market liquidity, stifles wholesale market competition, and obstructs cost savings to end users.
Problem definition	GGNZ	The problems to be addressed need to be debated by everyone in the supply chain; the old balancing problems, in aggregate no longer exist. Other solutions exist for addressing today's problems, and today's problem definition is not really about balancing -- it's about pipeline management.		
Problem definition	MRP	Unresolved issues around pipeline management exist, but these issues have not been properly identified or defined		
Problem definition	MRP	Balancing issues are not confined to the transmission system, and solutions should not be confined to transmission arrangements		
Tolerances	Methanex	Reduction of ROIL tolerances to 1% or 1,000 GJ places undue risk on pipeline users given the limitations to self balance (eg, issues with start of gas day, insufficient ID cycles, and timing of deadlines). Recommend setting to higher of 2% or 2,000 -- and review by GIC after 12 months to determine if further reduction is appropriate.	Methanex	Remains need for a level of residual daily tolerance that recognises that mechanisms for self-balance are not sufficiently developed. Implementation of a spot market is a significant component to self-balancing, and liquidity will grow with time. Considerable restrictions of participants' ability to balance given restricted trading cycles.
Tolerances	MRP	Soft landing with ROIL multiplier of 2 should be for 1 year after CR is implemented; multiplier of 1.5 for 6 months after that.		

Appendix B Cost-Benefit Analysis

Market Based Balancing on the Maui Pipeline: Cost-Benefit Analysis

Prepared for

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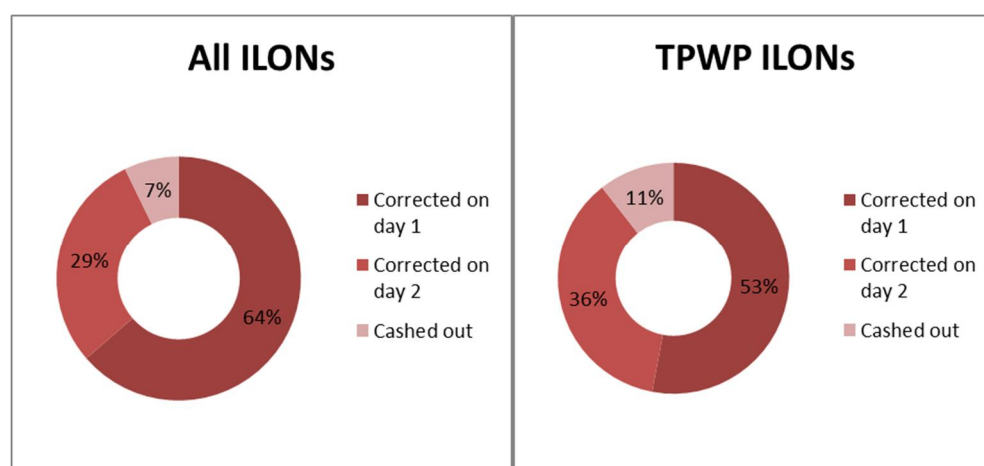
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Executive Summary

Pipeline balancing issues have been discussed by the gas industry for many years. A recent proposal by Maui Developments Limited (MDL) seeks to change from the status quo to a new system referred to as market based balancing (MBB). Under the status quo pipeline users have only weak incentives to ensure their physical positions align with their nominated flows on a daily basis. MBB would change this by instituting a system of automatic cash-outs for excess daily imbalances. This report describes a cost-benefit analysis (CBA) commissioned by the Gas Industry Company (GIC) to assess the MBB proposal.

The likely effect is that there would be more “primary” balancing, meaning that pipeline users will do their own balancing relative to their nominations, leaving less secondary balancing work for the pipeline operator to do. Shippers have argued in submissions that incentives are only part of the barrier to primary balancing and that they in fact have limited *ability* to undertake this role. However this argument is not borne out by the data. Figure 1 shows that only a small fraction of existing over-run notices are cashed-out and that the majority being corrected within one day.

Figure 1: ILON Responses in 2014 (Source: MDL)



Nevertheless, there is considerable uncertainty over just how much extra primary balancing will occur, and more generally over the costs and benefits of moving to MBB.

A second effect is that balancing actions will be conducted on a more liquid market with much lower spreads between buy and sell prices. It has been argued that this should occur already, but from an economic perspective what matters are actual changes, so we do count this effect.

Our analysis was conducted at the industry level. Individual participants are likely to experience a range of costs and benefits, depending on whether and to what extent they benefit from the current rather loose arrangements for balancing. However in order to focus on the change in total resources used for balancing, we abstract from these firm-level effects. Among other things, this means we exclude from analysis the financial flows that would occur as a consequence of daily cash-outs.

We have valued resources at market rates which is appropriate for a cost-benefit analysis. The benefits of MBB that have been quantified here are from:

- Fewer and/or smaller balancing actions as pipeline users undertake more primary balancing;
- The use of a more liquid market for balancing actions with much lower spreads between bids and offers; and
- Reduced usage of fuel gas in Mokau compressors to support flows that differ from aggregate nominations.

In aggregate, the benefits are quite stable across a range of scenarios for the response of users, to the point where we consider it unnecessary to predict any particular level of behavioural response. This is an important point which needs explaining.

Consider first the fuel gas savings: if there is no behavioural response (i.e. if primary balancing does not improve), there will be no benefit from fuel gas savings. This fuel gas benefit is expected to increase in direct proportion to the amount of extra primary balancing.

The other two quantified benefits are bundled together in our analysis. If the balancing agent switched to a more liquid market *and maintained the current level of activity*, there would be a moderately large benefit from the collapse in spreads (using 2014 data, the balancing agent would have made a profit of around \$740,000 rather than a loss of over \$300,000). However the size of this benefit falls as primary balancing increases, because there are fewer and/or smaller balancing actions required.

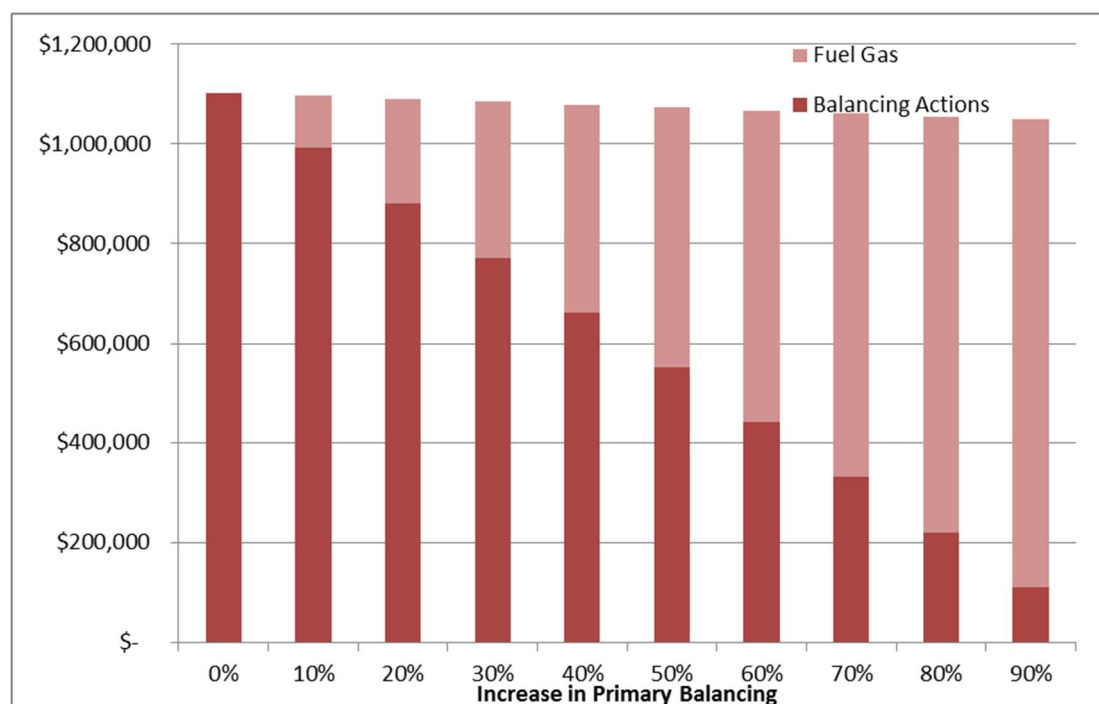
Figure 2 summarises both of these effects as primary balancing improves (from left to right). On the horizontal axis, 0% indicates no reduction in balancing actions or fuel gas while 90% indicates a 90% reduction.

It turns out that the combination of both effects is very stable across response scenarios (the combined bars have very similar heights). On average across these scenarios the annual benefit is \$1.075m.

On the cost side, we considered submissions regarding the extra resources that parties would need to employ to manage their affairs under MBB. These fall into two groups: one arises from the need under MBB for Vector to develop and operate a daily reconciliation system to share its (TPWP) cash-out transactions with its shippers. An annual cost of \$150,000 is allowed for this activity.

The second category of cost is any new administrative expenditure by shippers. This cost will be zero if there is no change in primary balancing activity under MBB. Alternatively, if shippers invest in extra administrative effort to better manage their positions under MBB, it is reasonable to assume they expect to profit from that investment. We therefore make no allowance for this category of cost so the total annual cost estimate is \$150,000.

Figure 2: Annual Benefits of MBB from Balancing Actions and Fuel Gas sources



The annual benefits are likely to change over time because market activity will change the pattern of balancing actions and fuel gas usage under the status quo scenario. However we used 2014 balancing actions in the above analysis, and the benefits would be higher if we had instead used any other year back to 2007. Our analysis is therefore conservative on this point.

Several extra effects are recognised in this analysis but unquantified because of material uncertainties. All of these fall effects would increase the assessed benefits if they were included. The sources of unquantified extra benefits are

- increased market liquidity,
- dynamic efficiency gains from better price signals, and
- upstream benefits such as increased reserves and lower costs.

Conclusion

- The quantified benefits of shifting to MBB arise from less use of fuel gas and reduced cost of balancing actions. They are estimated at \$1,075,000 per annum.
- The quantified costs of shifting to MBB arise from the extra resources incurred in sharing TPWP cash-outs with shippers and are estimated at \$150,000 per annum.
- Several other benefits have been identified but not quantified, including dynamic efficiency gains from better price signals and increased market liquidity.

1 Introduction

The Maui gas pipeline is economically crucial infrastructure carrying gas from Taranaki to several geographic markets including the greater Auckland area. End users include gas-fired power stations, major industrial customers such as NZ Steel and Methanex, a commercial sector and residential customers.

The pipeline is owned by a consortium of upstream interests, Maui Developments Limited (MDL). Its revenue is regulated by the Commerce Commission under Part 4 of the Commerce Act 1986. Use of the pipeline is governed by a multilateral agreement, the Maui Pipeline Operating Code (MPOC).

MPOC prescribes a common-carriage system for pipeline users. Shippers are required to make daily nominations of injections and offtakes and these must balance, meaning that nominated injections equal nominated offtakes on a daily basis. Nominations are confirmed by the Welded Parties and, subject to the schedule being feasible, the pipeline will approve those nominations. Shippers' aggregate nominations at a single Welded Point create the Scheduled Quantity for that Welded Point. It is then up to the Welded Party to manage its Welded Point so as to ensure that the gas that flows (Measured Quantity) reflects the Scheduled Quantity.

Where the Maui pipeline feeds into the Vector pipelines Vector, as the Welded Party, assumes responsibility for imbalances at those Transmission Pipeline Welded Points (TPWP). To the extent that the quantities shippers have nominated to the TPWP do not match the consumption by their customers (mismatch) the TPWP will accumulate imbalance. Vector operates a balancing and peaking pool (BPP) to recover balancing charges from Shippers, *pro rata* with their respective running mismatch positions.

Under current practices, there are only weak incentives for parties to "flow to nomination". If a welded party is in an imbalance position at the end of a day, the pipeline operator can issue an imbalance limit over-run notice (ILON). Typically this occurs on the following morning and the user then has until the end of the next day to get its position back into balance.

There are frequent imbalances as users effectively use the pipeline as a communal buffer: depending on conditions in other markets, they may either store gas in the pipeline (i.e. run a positive imbalance) or borrow gas from the pipeline (running a negative imbalance).

These imbalances can only occur because the Maui line has, on average, enough spare capacity to accommodate them without breaching its operational tolerance limits for high and low pressure (though pressures do in fact exceed target levels very frequently¹). When imbalances threaten prudent operational limits, the pipeline operator will generally buy or sell balancing gas.² These trades currently occur through

¹ MDL Submission 24 November 2014, paragraph 6.

² In extreme low pressure situations the critical contingency operator can declare a "critical contingency" which allows it to order particular conduct from users.

the Balancing Gas Exchange ('BGX'), which is in effect a tendering system with tenders initiated by the pipeline operator.

MDL has recently sought to reform MPOC by introducing a system known as back-to-back (B2B) balancing which was intended to sharpen the incentives on pipeline users to adhere to daily balancing. As industry regulator, the Gas Industry Company (GIC) has approved the introduction of B2B balancing. However MDL has now promulgated an alternative package known as market based balancing (MBB) which involves cashing out imbalance positions on a daily basis. MDL has also confirmed that it will not consent to the B2B regime being implemented.³ Accordingly, this analysis is now focused on comparing the MBB proposal with the status-quo.

Information supplied in submissions and at the November 2014 workshop revealed a range of views on the MBB proposal. Among the issues that were raised are:

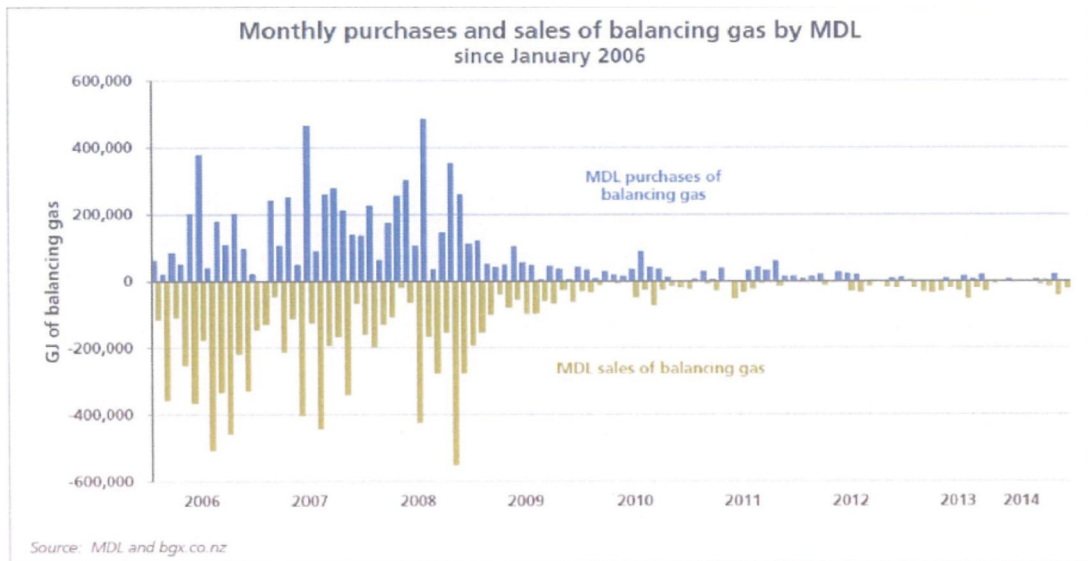
- The impact of MBB-stimulated trades on liquidity in the recently introduced gas spot market;
- The efficiency benefits of signalling to stakeholders the potential cost of their conduct on other parties;
- Information constraints that may make it difficult for pipeline users to ensure balanced positions and hence avoid cash-outs;
- Costs incurred by upstream gas producers under the status quo as pipeline pressures increase;
- Costs that would be incurred by shippers in an effort to gain better information under a MBB regime;
- An increased need for reform of downstream allocation systems so that shippers have greater certainty over the treatment of demand-related imbalances; and
- The potential impact on end-user pricing if shippers effectively bear more risk under MBB.

1.1 Background

The gas industry comprises a small number of quite large firms with rather diverse interests. It is largely self-managed including through two multilateral pipeline access codes: MPOC and the Vector Transmission Code (VTC). As industry co-regulator, the GIC potentially has two roles in respect of code changes.

Pipeline balancing has been discussed for many years. Six years ago, the GIC published a research paper on balancing, after which there was considerable discussion and debate within the industry, particularly in 2008-09. This work-stream was ultimately put on hold. The following chart shows that balancing gas transactions have declined since that time.

³ MDL submission, paragraph 5.



Purchases of balancing gas are not the only indicator of the cost of imbalances. MDL says that it has always used the Mokau compressors to support differences between flows and aggregate nominations and that the share of compressor time devoted to that activity has increased markedly since the expiry in May 2009 of the Maui legacy contracts and September 2012 of the Oaonui Operational Balancing Gas (OBG) facility.⁴ MDL defines nomination support as occurring when nominations north of Mokau are less than 250TJ. On such occasions, MDL says it is effectively using fuel gas to provide balancing services. It seems that fuel gas costs cannot be washed up in a tariff adjustment (because they are treated as an operating cost for MDL) whereas balancing costs (purchases and sales of balancing gas and cash-outs) are “recoverable costs” and are washed up to give a tariff reduction in the next year..

1.2 Current Status

GIC has asked Covec to undertake a cost-benefit analysis (CBA) of the MBB proposal. A CBA of a rule change needs to compare alternative future scenarios with and without the change. Our first report on this topic was solely focussed on the framework for the cost benefit analysis. Following its release, an industry workshop was convened and submissions were supplied. We have carefully reviewed these submissions and a subsequent round of cross-submissions. This report now contains a full CBA.

In the remainder of this report:

- **Section 2** summarises the scenarios of interest focusing particularly on matters relevant to evaluating the MBB proposal;
- **Section 3** describes the costs and benefits and presents our assessment of their size;
- **Section 4** offers some concluding comments.

⁴ MDL submission, 24 November 2014, paragraphs 72-78.

2 Scenario Description

One of the scenarios to be evaluated is the MBB code-change proposal as promulgated by MDL. We refer to this as the “factual” scenario. In the absence of MBB, the status quo situation would remain, so this is the counterfactual scenario. Our first draft raised the prospect of modelling a third scenario based on the back-to-back (B2B) code change. However MDL has confirmed in submissions that it will not pursue B2B independently of the MBB proposal. It is therefore appropriate to restrict this analysis to two scenarios, the MBB factual and the status quo counterfactual.

2.1 Status Quo

To describe the status quo, we outline the way MPOC deals with pipeline balancing, and note current practices alongside these rules. We then offer some thoughts on the economic consequences of the status quo.

2.1.1 Code Provisions

Section 8 of the MPOC governs the making of nominations, their acceptance by MDL and a range of ways in which they can be adjusted by shippers or curtailed by MDL. Importantly, under s8.2, all nominations must be balanced at the shipper level – i.e. the amount nominated at receipt points must equal the amount nominated at delivery points for each shipper.

Nevertheless, there are two ways in which physical flows may differ from nominations. One is called “mismatch” and occurs due to interruption actions taken either by MDL or by a welded party (sections 15.1, 15.2). In these cases section 11 of MPOC requires shippers to either trade back to a matched position with one another, or trade with MDL as the counterparty via the MDL IX. In the latter case, the prices are known as mismatch prices and there will typically be different prices for positive and negative mismatches. In practice MDL does not put shippers into mismatch.

The second type of deviation between nominations and physical flows is known as “operational imbalance” and is governed by section 12 of MPOC. Operational imbalances can arise for many different reasons including final consumers drawing gas in greater or lesser volumes than forecast. The MBB proposal is aimed at reforming the arrangements for these operational imbalances.

If a welded party has not run-to-nomination, MDL can (under s12.1) issue it with an Imbalance Limit Over-run Notice (ILON) which states a period of time (not less than one day) in which the welded party is required to return to balance. If balance has not been achieved within the stated time period, MDL may then cash out the welded party at the mismatch prices (s 12.11(a)), even if it has not taken any balancing action.

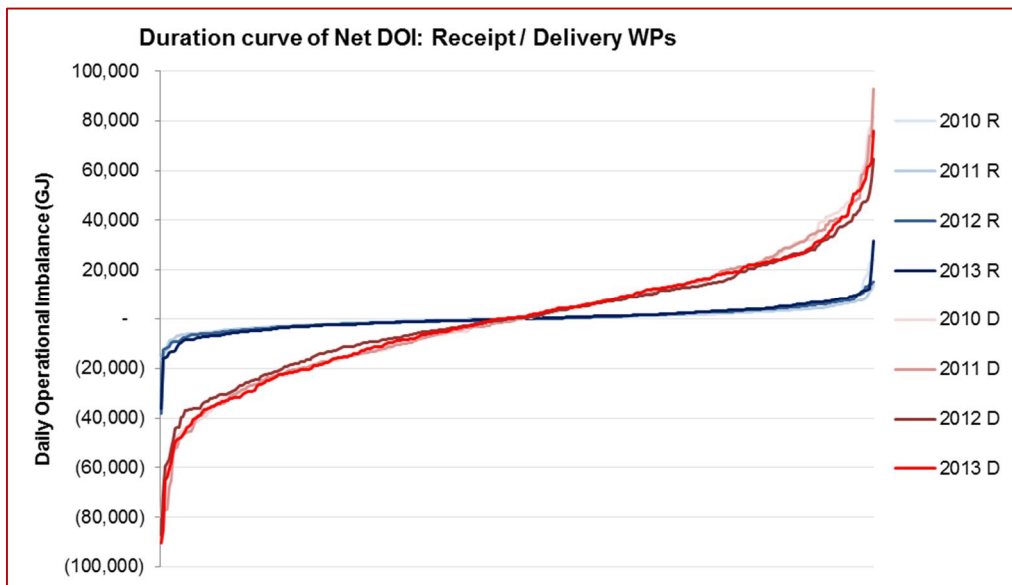
An incentives pool sits alongside these arrangements. There are two triggers for payments into the pool: for excess daily imbalances (s12.7) and for exceeding hourly peak flow limits (s13.3). There are also two triggers for claims on the pool: for forced operational imbalances (s12.6) and for payments to the balancing agent (s14.4) which are capped at the pool’s level for any day.

2.1.2 Current practice

Under normal conditions⁵ MDL can place a 24 hour time limit on the ILONs and enforce cash-outs after this period. However in practice, ILONs are not issued until 10am on the morning after the previous day has ended in an imbalance. Users then have 24 hours to restore balance, which in practice means the end of the next day. There is consequently a “grace period” in excess of 24 hours during which time AEOI can persist without fear of being cashed-out.

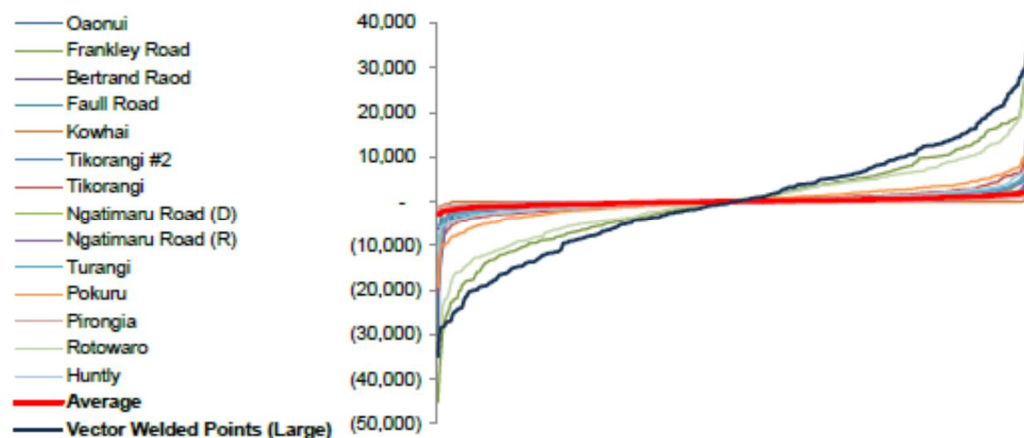
It appears (Figure 3) that imbalances primarily occur at delivery points.

Figure 3: Operating Imbalances by WP Type (Source: EMS Tradepoint)



It further appears (Figure 4) that the Vector welded points are the biggest contributors to imbalances.

Figure 4: Imbalance Duration Curves by Welded Point (source: emsTradepoint)



⁵ i.e. excluding the special cases specified in s12.10 of MPOC.

2.1.3 Efficiency Implications

The current arrangements give rise to some inefficiency as a result of unpriced use of the pipeline for what could be described as “park and loan” purposes.

Economic costs are incurred as a consequence of shippers and welded parties not running to nomination. For example, balancing gas costs can only be recovered through the incentives pool to the limit of funds available on a day; any other costs are socialised through the pipeline access tariff. GIC analysis of data from January 2009 – September 2011 showed that 57% of balancing costs were socialised in this way.⁶

Conversely, even when no balancing actions are taken, welded parties can be cashed out if their scheduled quantity is curtailed due to another party being outside its tolerance. Shippers and welded parties therefore face uncertain consequences from running an imbalance. There is a risk of being cashed out but this may well not occur; the outcome depends on the actions of other parties including the balancing agent.

Using the pipeline as a “park and loan” facility is not necessarily inefficient. However in the absence of a clear price signal we can have no confidence that the current usage of park and loan services is efficient. On the contrary, since the effective price is close to zero,⁷ we should expect that these services are being over-used and that the incentives to build gas storage are inefficiently weak.

It has also been claimed that some gas producers bear increasing costs as pipeline pressures increase towards the maximum level of 48 bar. We understand from submissions and workshop discussions that high pipeline pressures reduce the efficiency of recovering condensate, leaving some condensate in the gas stream and reducing the overall quality of delivered gas. Section 2.5 of MPOC requires MDL to “use reasonable endeavours to manage the Target Taranaki Pressure to be as low as practicable while maintaining sufficient Line Pack”.

The core weakness in the current arrangements is that the ILON process gives quite weak incentives for primary balancing because of the time allowed to correct excess imbalance positions. This has two initial economic effects. It increases the cost of secondary balancing by the pipeline operator, both through the purchase or sale of balancing gas and also through extra use of compressors to manage the pipeline. Additionally, the costs of secondary balancing are not always allocated to the parties whose conduct caused them; this causes a further incentive problem, which reinforces the tendency towards insufficient primary balancing. There may also be a third effect, which is that the physical conditions on the pipeline may inefficiently increase upstream production costs.

These issues are analysed in more detail in section 3 below.

⁶ GIC, Draft Recommendation on 13 October 2011 MPOC Change Request, February 2012, page 18.

⁷ There is risk of being cashed-out, but a relatively generous window of time within which this can be avoided.

2.2 Market Based Balancing

MDL has lodged an MPOC change request for a daily cash-out regime referred to as market based balancing (MBB). In doing so, it takes the previously approved B2B change requests as given, so the proposed code changes mostly build on the earlier ones rather than displace them.

In explaining its MBB request, MDL draws heavily on a Network Code on Gas Balancing of Transmission Networks recently approved by the EU.⁸ This is potentially helpful in piggy-backing on negotiated developments in more complex markets, but also carries a risk that local participants may consider these more complex markets less relevant. We also note that while the EU code aims to *“increase(s) the financial responsibility of market players in balancing their portfolio”* it includes measures aimed at *“equipping them both with standardised short-term products and an information framework to do so.”*

The MBB change request defines two types of market: a balancing platform and a trading platform and permits the balancing agent to use either market, or an off-market agreement to trade balancing gas. Subject to conditions (suitability, availability and cost effectiveness) the balancing agent is obliged to trade standard products on a trading platform.

The main impact of the proposed MBB regime is specified in changes to sections 12.10 and 12.11 of the MPOC which effectively provide for daily cash-outs of AEOI at notional and physical welded points, excluding Small Station physical welded points. The proposed cash-out prices are marginal buy/sell prices (rather than averages). No balancing action is required to trigger cash-outs which are also independent of AEOI at other welded points.

Cash-outs in the proposed MBB regime are subject to specified tolerances, which will be higher during a transition period (doubled until at least 1 March 2016).

MDL proposes to delete references to the BGX and instead refer to a BGIX which is a “balancing gas information platform that displays information related to Maui Pipeline balancing”. It also proposes to drop explicit references to a balancing agent, including requirements for the agent to provide monthly accounts and audit reports.

2.2.1 Economic commentary

The MBB proposal creates stronger incentives for primary balancing by shippers and welded parties. If the change request succeeds, it is likely to have several types of flow-on impact.

There is likely to be a demand for better information. At present, shippers do not have complete information on their physical positions on any given gas day. It seems that even many of the time-of-use (TOU) meters are using manual dial-up reading systems rather than modern automatic pulse telemetry. Daily demand patterns are more opaque

⁸ http://ec.europa.eu/energy/gas_electricity/codes/gas_en.htm

in the mass market without TOU meters. There are also challenges for shippers operating through shared gates and behind TPWPs because in those situations reconciliations require multilateral communications. A move to MBB would likely provide new urgency to efforts to reconcile and allocate gas the day after delivery (D+1) and that would result in some extra costs.

Final (end-user) contracts may well change. Since shippers will be bearing some extra financial risk, it would not be surprising if end-user contracts reflected these costs. Such changes could be reflected through higher average prices or perhaps the addition of extra tariff steps that depend on the peaking characteristics of a customer's load, or both.

Over-pressure situations and the associated costs, may persist even if they are less frequent. If over-pressure is caused primarily by a preference for flat production patterns combined with weekday/weekend variability in demand, then more accurate nominations might not substantially reduce the frequency of high pressure situations. Alternatively, it may be that a MBB regime would provide strong enough incentives to upstream welded parties that over-pressure frequencies are reduced by throttling back production so that it better matches demand. Either way, MBB would provide an efficiency benefit by signalling the costs of using the pipeline as a buffer, thereby allowing the most efficient response to be discovered.

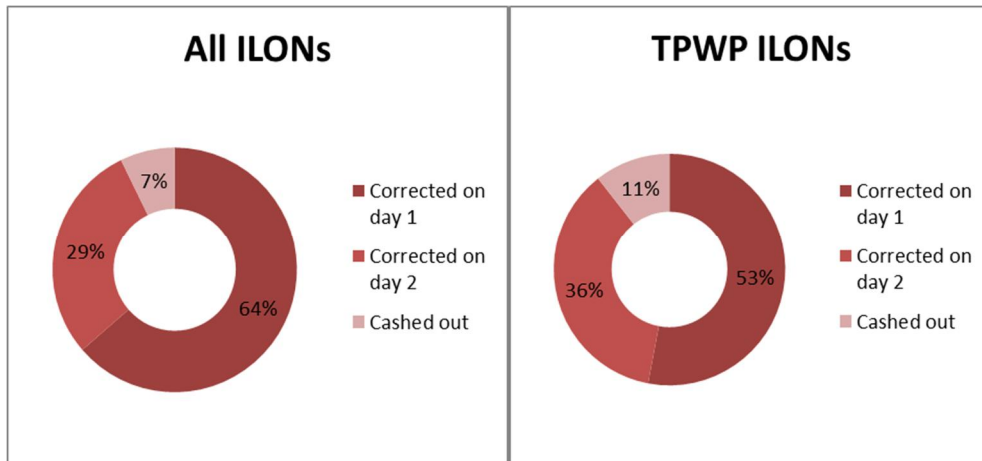
Perhaps the most pressing question however, concerns the reactions of shippers and welded parties to the stronger primary balancing incentives MBB would offer. We consider this matter next.

2.2.1 ILON Response

It is clear that primary balancing performance will not improve materially unless shippers have both the *incentive* and *ability* to better manage their positions under the MBB regime. While it seems generally agreed that MBB will strengthen incentives, a number of parties have argued that shippers have limited ability to adjust their positions on a daily basis. To the extent this is true, it would limit the primary balancing benefits we can reasonably expect from MBB.

To gain insight into primary balancing abilities, we sought information from MDL on the number of ILONs issued in 2014 and the response to those notices. Figure 5 summarises the results.

Figure 5: ILON Responses in 2014 (Source: MDL)



Of the 525 ILONs were issued in 2014 only 38 (7.2%) were cashed out and most were corrected on the first day. The response performance is weaker for TPWPs but not dramatically so. This suggests a reasonably strong *ability* to correct positions, though the *incentive* to do so is currently muted by the fact that parties are not certain of being cashed out.

3 Costs and Benefits

In this section we identify and discuss each potential category of cost and benefit, and then assess the size of these effects. In so doing, we adopt an industry-wide view, meaning that we look for net effects on costs and benefits across the whole sector.

3.1 Description of Effects

3.1.1 Cash-out costs

MDL and pipeline users will exchange payments on a daily basis as users are cashed-out. Each party participating in a cash-out will either pay or receive revenue, and the counter-party's experience will be exactly opposite. The payments will be a transfer between parties, so from the perspective of the industry as a whole, they will net to zero. Accordingly, we make no allowance in the CBA for these payments.

3.1.2 The cost of balancing actions

It is likely that balancing actions (buying and selling of balancing gas) will still occur under MBB. However to the extent that more primary balancing is undertaken, there will be fewer balancing actions involving smaller volumes of gas. The net cost or benefit of balancing transactions is "recoverable" from pipeline users for regulatory purposes under the Commerce Act. This makes MDL indifferent to the net financial impact of balancing actions. Any surplus (or deficit) in a year will be deducted from (or added to) MDL's regulated revenue in the next year.

Pipeline users pay MDL's regulated revenue so they are not indifferent to balancing costs. Other things being equal, users will in aggregate prefer that balancing costs are minimised, on which basis a reduction in balancing actions under MBB would count as a benefit. Other things are not equal however. Balancing actions will only become fewer and/or smaller under MBB if pipeline users undertake more primary balancing, which has its own costs (as discussed below).

Nevertheless, under MBB pipeline users would be able to choose whether to balance their own positions physically, or to bear the financial consequences of not balancing. Thus, provided the cash-out prices are efficient MBB can be expected to at least not increase balancing costs. We therefore consider it would be reasonable to expect the cost of balancing actions to fall under MBB, which counts as a benefit for the CBA.

3.1.3 Balancing-related fuel gas costs

MDL argues that its Mokau compressors are primarily run for the purpose of supporting nominations. This function incurs an annual cost of between \$900,000 and \$1.2m. It appears from MDL's submission that this approach is cost-efficient in the sense that the alternative (purchasing balancing gas) would cost around three times this amount annually.

For the CBA, this category of cost is treated the same way as the cost of balancing actions discussed in section (3.1.2). We would expect some reduction to occur as a result of an MBB-induced increase in primary balancing. We also consider such reductions a legitimate benefit for the CBA provided pipeline users will face efficient (i.e. cost-reflective) price signals.⁹

3.1.4 Pipeline user balancing costs

Under MBB, pipeline users will need to decide whether and how to change their conduct in respect of primary balancing. Broadly speaking, users have two options: make no changes in conduct; or seek to avoid cash-outs. Under the first option, cash-outs would be higher and more frequent than under the second option. However we have already noted that cash-outs are transfers between users which do not count in the cost-benefit analysis.

How then should we treat extra costs incurred by pipeline users for the purpose of managing their own physical positions? These outlays are in fact investments aimed at increasing the financial benefit of a pipeline user. On average, we can expect them to be value-enhancing rather than a net cost. For this reason we make no allowance for these costs.

3.1.5 Adjustment factor

The MBB proposal includes provision for an adjustment factor to be included, pushing the cash-out prices somewhat away from market clearing prices. MDL argues that this is necessary for an efficient outcome, but other submitters (e.g. Contact) consider it to be a penalty charge and say it is not cost reflective and therefore not allocatively efficient.

In the absence of the adjustment factor, cash-outs would simply price the imbalance gas at the prevailing market price so that pipeline users would be approximately indifferent as to whether they were cashed-out or not. The market price would be a spot price however whereas most gas is traded on contracted terms. In the absence of an adjustment factor, the difference between these prices would provide an incentive for primary balancing, but only in one direction.¹⁰ We therefore agree with MDL that incentives for primary balancing would not reliably increase without an adjustment factor.

It does also seem clear that there is no close relationship between the adjustment factor and “costs”. This follows directly from it being a percentage of the market price (which varies), and from the fact that MDL has not committed to any particular percentage.

⁹ This approach does not rely on a view that pipeline users will always be able to balance their positions. Some cash-outs are likely to occur even when a user would prefer to have been balanced, due to an imperfect ability to react.

¹⁰ For example, if a shipper's contracted price is lower than the spot price they would prefer not to be forced to buy spot-priced gas, but may be quite happy to sell spot-priced gas.

On the other hand, there are some real costs to be reflected as we have discussed above. While park and loan services are not currently priced, neither are they costless to provide.

Two of the CBA components discussed above (sections 3.1.2 and 3.1.3) rely on an assumption that cash-out prices will be efficient. This is needed in order to conclude that pipeline users will make efficient choices under MBB. However, while stated somewhat baldly above, what really matters is price signals to pipeline users under MBB will be *more efficient* than is currently the case.

That appears to be a safe conclusion. MDL's submission presented modelling of the adjustment factor that would leave pipeline users indifferent under a range of assumptions. It concluded (at ¶188) that the adjustment factor is likely to be set in the range of 2.5% to 4% initially. The adjustment factor will be applied to prices from the emsTradepoint market however (see section 3.1.6 below), rather than the BGX. Even without MBB-induced trading the emsTradepoint market has much lower spreads than the BGX. An adjustment factor of 4% would not change that fact. So when we put both effects together (switch to emsTradepoint plus the adjustment factor) it seems clear that the cash-out prices under MBB would be more efficient than those under the status quo.

3.1.6 emsTradepoint market

There is a disagreement in submissions between MDL and Vector over how a shift from purchasing balancing gas through the BGX to emsTradepoint should be treated in this analysis. Currently, emsTradepoint is located on a Vector pipeline and MDL does not use it to purchase balancing gas. The stated reason is that MDL does not have sufficient confidence that trades will be physically completed.

Under the MBB proposal, the emsTradepoint market would relocate to the Maui pipeline and be used for balancing gas. Vector argues that MDL should already be using emsTradepoint. However from an economic standpoint, it does seem clear that MBB would result in a change to a more efficient market. This is expected to reduce the spreads for balancing gas purchases, which counts as a benefit in the CBA.

While the use of emsTradepoint would be beneficial for balancing gas transactions, the MBB change is also likely to provide a benefit in the reverse direction. We expect a much larger number of market transactions under a daily cash-out regime, which would improve the liquidity and hence efficiency of the emsTradepoint market.

3.1.7 Upstream costs from over-pressure situations

Submissions from upstream producers (e.g. Shell) argue that the current balancing arrangements have the effect of requiring producers to supply swing services and that they lead to a large number of over-pressure situations. This is said to impose real costs on producers, so there would be a benefit to count in the CBA if (and to the extent that) these costs were reduced by MBB.

Two distinct types of cost are claimed. One arises from producers reacting to swings in demand, and the other is a loss of reserves arising from excessive pipeline pressures. We

sought clarification from Shell of its submission on these matters. In respect of swing, we consider that the relevant entry into the CBA is not the gross cost of producer-supplied swing, but any cost *saving* that would arise from MBB permitting lower cost alternatives to be used. For example, if there is no cheaper alternative, then it is efficient for producers to supply swing and the CBA should take no account of this factor.

It seems that gas supply agreements are typically structured in a way that requires producers to supply swing. Contract terms typically include both a peak flow quantity and an average flow quantity; swing is by definition available within these bounds. We would expect competition between producers to result in the implied swing allowance being priced with reference to its cost on the production sector generally. Nevertheless, if spot gas prices would be more efficient under MBB (as seems likely) then shippers may well use other less costly methods to meet variable demand. For this reason, we consider that there is likely to be some swing-related benefit associated with MBB and that there is most unlikely to be a cost.

The claimed loss of reserves is linked to over-pressure situations. We consider that over-pressure situations would indeed be materially reduced under MBB. Since excess gas can no longer be parked in the pipeline for days before being cashed out (as it can under the ILON arrangement), better primary balancing behaviour is encouraged.

3.1.8 Reconciliation costs

The final category of effects concerns reconciliation of gas flows behind TPWPs. Under MBB the relevant welded party (Vector) will have daily imbalances cashed out. These financial flows will then be shared out between Vector shippers.¹¹ An improved system will be needed to allocate imbalance costs in a reasonably accurate and prompt fashion. There will also be an ongoing cost associated with operating that system.

3.1.9 Summary of Effects

The above discussion is summarised in Table 1 below.

¹¹ We assume that the recent VTC change to pass-through such costs to shippers will be implemented as part of this process.

Table 1: Summary of potential costs and benefits and treatment in CBA

	Cost/benefit category	Treatment in the CBA
3.1.1	Cash-out costs	These are transfers between parties and, net to zero, no allowance in the calculations.
3.1.2	Cost of balancing actions	Cash-out prices are more efficient than the status quo, expect the cost of balancing to fall.
3.1.3	Balancing-related fuel costs	Compressors run “ <i>primarily ... for ... supporting nominations</i> ”. Expect costs to decrease with improvements in primary balancing.
3.1.4	Pipeline user balancing costs	Expected to be profitable investments under MBB, but no information on likely profit so no allowance for cost in the CBA.
3.1.5	Adjustment factor	The adjustment factor is too small to offset the efficiency improvement of moving from the BGX to a more-liquid spot market.
3.1.6	emsTradepoint market	Question of whether MDL should already be using emsTradepoint to price balancing gas. CBA concluded that the status quo is the appropriate comparison. Reduced spread feeds into lower secondary balancing costs. MBB likely to stimulate more transactions which may improve liquidity and efficiency. No estimate available of this benefit.
3.1.7	Upstream costs from over-pressure situations	There is likely to be a reduction in over-pressure incidents and some swing-related benefits associated with MBB with no related cost. However, as these cannot be quantified they have been excluded from the CBA
3.1.8	Reconciliation costs	Provided an allowance for additional Vector costs as daily cash-outs may require more timely information than currently exists.

3.2 Quantification

We have modelled the above effects in three categories:

- Balancing actions
- Fuel gas; and
- User costs

Table 2 shows where each of the effects described above shows up in the quantification.

Table 2: Translation from descriptor to quantification

Effect	Location in CBA
3.1.1 Cash out costs	Excluded
3.1.2 Cost of balancing actions	Balancing actions
3.1.3 Balancing related fuel gas costs	Fuel gas
3.1.4 Pipeline user balancing costs	Excluded
3.1.5 Adjustment factor	Excluded
3.1.6 emsTradepoint market	Balancing actions
3.1.7 Upstream costs from over-pressure	Excluded
3.1.8 Reconciliation costs	User costs

Effects are excluded either if they should not be counted as a matter of economic logic or if they cannot be reliably estimated. Cash out costs fall into the first category as discussed in section 3.1.1. They are transfers between participants which net to zero when viewed from the perspective of the industry. The same is true for pipeline user balancing costs which (discussed in section 3.1.4) which are profitable investments under MBB so should not be counted as costs.

The adjustment factor was discussed above in order to decide whether the cash-out prices under MBB should be viewed as efficiency enhancing. Having decided that they are, these factors have no further role in the modelling because they relate to the financial flows arising from cash-outs which are transfers between participants.

Regarding potential upstream benefits from fewer high pressure situations, we have been provided with detailed modelling of this issue by Shell. However it is regarded by Shell as commercially sensitive so cannot at this point be exposed for industry scrutiny. We therefore we assign no weight to it in this analysis.

The remainder of this section explains how each of the three main components was estimated, and then presents the results.

3.2.1 Balancing actions

Under the status quo, MDL buys and sells balancing gas on the BGX. During the nine months to September 2014, it received on average \$1.20/GJ and paid on average \$8.85/GJ. These price differences appear typical of BGX trades and may even understate the spreads on the BGX.¹²

Under MBB, two changes are expected. One is that the spreads will reduce, and the other is that fewer and/or smaller balancing actions will occur. We modelled the spread-narrowing effect by assuming that the above put and call prices (\$1.20 and \$8.85) applied to all balancing trades under the status quo, whereas under the MBB scenario the corresponding prices would be 3% below and above the VWAP from emsTradepoint of \$5.75.

¹² Intraday 4 price stacks on 11 February 2015 are more extreme with puts in the range \$0.50 to \$1.10 and calls in the range \$9.99 to \$12.50

Applying these prices to the volume of balancing actions across recent years gives the following annual benefits of spread-narrowing where the 2015 data relate only to trades up to 9 February 2015.

Table 3: Benefits from spread-narrowing only (June financial years)

Year	Call GJ	Put GJ	Net Position by Scenario (\$m)		Spread Benefit (\$m)
			BGX	emsTradepoint	
2007	1760296	-3017829	-11.96	6.41	18.36
2008	2241171	-2307270	-17.07	-0.40	16.66
2009	1812984	-2144281	-13.47	1.22	14.69
2010	326469	-447000	-2.35	0.56	2.91
2011	262500	-303700	-1.96	0.14	2.10
2012	291500	-87500	-2.47	-1.24	1.24
2013	59500	-246550	-0.23	1.02	1.25
2014	80500	-203000	-0.47	0.66	1.12
2015	47000	-256500	-0.11	1.15	1.26

We take the 2014 year as our estimate of the benefit of spread-narrowing, noting this is a conservative choice because 2014 is the year with the lowest benefit.

The spread-narrowing effect alone would over-state the benefit of MBB however because it assumes the same pattern of balancing actions. We expect that MBB would induce more primary balancing and therefore fewer and/or smaller balancing actions. We have no reliable way of predicting how much change there will be in balancing actions, so we modelled a range of scenarios from no change (0%) through to a reduction of 90% in the volume of balancing trades.

Taking both of these effects into account, we estimate a range of benefits for this category from \$110,000 to \$1.1m depending on how much primary balancing displaces actions by the balancing agent. Qualitatively, larger increases in primary balancing lead to smaller benefits from balancing actions.

3.2.2 Fuel gas

As discussed above, it is expected that under MBB there would be more primary balancing and therefore less fuel gas used for nomination support. We used MDL's estimate of fuel gas used for this purpose, averaging the amounts used in 2013 and 2014 to generate an annualised volume. We valued this using MDL's approach which is based on the emsTradepoint volume weighted average price.¹³

The next task is to estimate the reduction in fuel gas that would occur under MBB. This is a similar problem to the one discussed above for balancing actions so we addressed it in the same manner, using a range of percentage reductions in total volume, from 0% to 90%. The resulting estimates of cost saving range from zero to \$938,000 per annum.

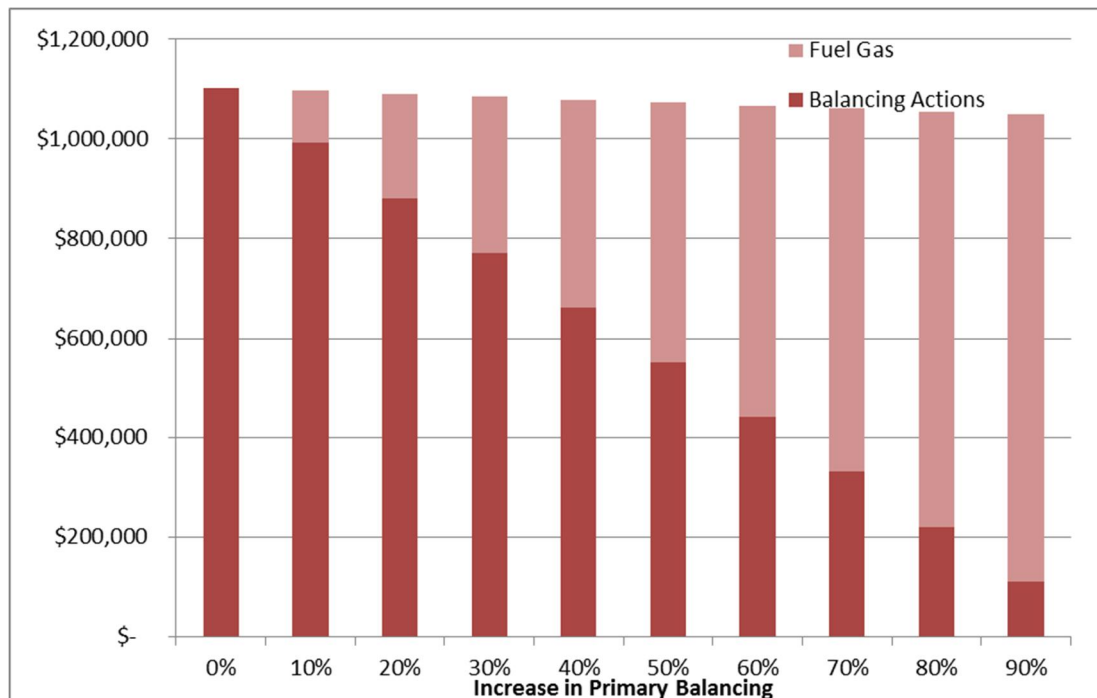
¹³ We note that some submitters argue against this valuation method. Whatever access MDL may have had to cheaper gas, it is in our view appropriate to value fuel gas at its opportunity cost.

3.2.3 Total of benefits

To model total benefits we combine the above two effects: balancing actions and fuel gas. These respond in opposite directions to increases in primary balancing. As primary balancing increases, the balancing actions benefit falls (because the spread-narrowing benefit is applied to smaller volumes) but the fuel gas benefits rise (because less fuel gas is needed to compensate for imbalances).

We model total benefits across a full range of “more primary balancing” scenarios. In each scenario, we used the same percentage changes for fuel gas and balancing actions. For example, if there is only a small reduction (say 10%) in the need for balancing actions, then this creates a large saving in the cost of balancing because the smaller emsTradePoint spread is applied to most (90%) of the historic balancing actions. However in the case of fuel gas, the same small reduction (10%) implies a much smaller cost saving. Figure 6 shows how the benefits of MBB from these two sources vary with the amount of extra primary balancing. If there is no extra primary balancing, there is a moderately large benefit from the balancing action source and nothing from fuel gas savings. Conversely, if 90% of balancing actions were avoided by enhanced primary balancing and 90% of fuel gas usage was also avoided for the same reason, there relative size of these two benefits would reverse.

Figure 6: Annual Benefits of MBB from Balancing Actions and Fuel Gas sources



The net impact of both effects is relatively flat across all scenarios, running at \$1.075m on average.

3.2.4 User costs

There is relatively little information in submissions on the transaction costs pipeline users expect to incur under MBB, with more focus on estimates of cash-out costs to shippers. Nova has however estimated that it would incur between \$50,000 and \$100,000 extra cost per annum to manage its affairs under MBB. As explained above, we consider this would be an investment for Nova or any other party and that they would expect to receive a benefit at least as large as the outlay.

The costs to Vector of sharing TPWP cash-outs with its shippers are relevant however and we have allowed \$150,000 as an estimate of the ongoing cost annual cost of this process.

3.3 Results

Based on the above analysis it seems very likely that MBB would be beneficial overall. Our quantification indicates a benefit of \$925,000 per annum on average a full range of scenarios as to the impact of extra primary balancing. The estimate is very stable across those scenarios.

It is possible that we have under-estimated Vector's reconciliation costs, but we consider it implausible that we have done so by enough to change the result from a net benefit to a net cost.

Also relevant are the following factors that have not been quantified:

- Market liquidity benefits arising from extra trades;
- Dynamic efficiency gains from more accurate price signalling, including improved transparency over the business case for investing in gas storage; and
- Any upstream benefits such as increased reserves and reduced costs of providing swing.

All of these effects increase our confidence that MBB would be beneficial. We are not aware of unquantified factors leaning in the other direction.

4 Conclusion

This analysis has been conducted at the industry level which is considered appropriate. Individual participants are likely to experience a range of costs and benefits, depending on whether and to what extent they benefit from the current rather loose arrangements for balancing.

We have valued resources at market rates which is appropriate for a cost-benefit analysis. The main benefits are from reduced balancing costs and reduced usage of fuel gas to support nominations. These benefits are stable across a range of scenarios for the response of users. In total, they outweigh our estimate of the costs users are likely to incur in managing their positions under MBB, by a factor of two.

Unquantified effects would all tend to increase the net benefits rather than reduce them. The sources of unquantified effects are increased market liquidity, dynamic efficiency gains from better price signals, and upstream benefits.