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24 November 2014

Mr. Ian Wilson  
Gas Industry Company Limited  
PO Box 10 646  
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Dear Ian,

Please regard this letter as our initial submission on the 10 October 2014 'market-based balancing' MPOC Change Request (**mbb CR**). In this letter we will use the terms "MDL", "we", "us" and "our" to refer to the Gas Transmission Business (**GTB**) of Maui Development Limited. This submission has been prepared by the Commercial Operator for and on behalf of MDL and does not necessarily represent the respective views of MDL's shareholders.

Capitalised terms used in this letter, other than those defined in the letter itself, have the meanings given to them in the marked-up draft of the Maui Pipeline Operating Code (**MPOC**) submitted to Gas Industry Company (**GIC**) as part of the mbb CR. References to sections of the MPOC should be construed in the same manner.

## 1 Introduction

1 MDL believes that the amendments proposed in the mbb CR (**Amendments**) would improve the efficiency of the wholesale gas market in furtherance of the objectives set out in the Gas Act 1992 (**Act**) and the Government Policy Statement on Gas Governance (**GPS**). Specifically, for reasons that will be set out (and, where possible, corroborated) in this letter, the Amendments would:

### *section 43ZN of the Act*

- (a) evolve the wholesale gas market in a manner consistent with GIC's principal policy objective<sup>1</sup> by ensuring that gas is delivered to existing and new customers in a safer, more efficient and more reliable manner.<sup>2</sup>
- (b) remove barriers to competition in the gas industry; enhance incentives for investment in gas transmission facilities; put downward pressure on delivered gas costs and prices; and enhance the efficiency by which risks to security of supply are managed.

### *GPS*

- enhance the signaling to consumers of the full costs of producing and transporting gas, in furtherance of the additional policy objective set out in paragraph 12(c) of the GPS.
- enhance the efficiency of the arrangements for the short-term trading of gas, in furtherance of the outcome (listed under the heading "Efficient wholesale market" on

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<sup>1</sup> Paragraph 7 of the GPS notes that: "The Gas Act 1992 sets out the principal policy objective for Gas Industry Co., when recommending rules or regulations for wholesale market, processing facilities, transmission, and distribution of gas, as follows: "[section 43ZN(a)]." While in the Act and GPS this objective is tied to GIC recommendations on gas governance regulations, paragraph 2.3 of the Memorandum of Understanding dated 5 October 2006 between GIC and MDL states that: "In performing the roles and functions referred to in paragraph 2.2 GIC shall also have regard to the objectives specified in section 43ZN of the Gas Act."

<sup>2</sup> We expect that, of the three concerns, efficiency would be the largest benefactor of the Amendments, followed by reliability.



page 5 of the GPS) against which GIC is required to report to the Minister of Energy pursuant to paragraph 13 of the GPS.

2 GIC and industry have been kept abreast of the mbb CR's development process throughout. A summary of that process is set out in *Appendix 1*, the salient points being as follows:

- The mbb CR reflects clear industry demand for a market-based balancing system.
- It was developed by reference to best balancing practices overseas. Europe's recent experience in designing and implementing market-based balancing regimes provided significant inspiration, although we also studied American and Australian practices. The European experience, though 'fresh', is not revolutionary; rather it is part of an evolution which our industry has been observing for at least six or seven years.
- Acknowledging the significance of the role of market operators in a market-based balancing regime, we sought and were grateful of emsTradepoint's input throughout the development process.
- The design reflects operational and contractual constraints specific to our market, for example:
  - the relative lack of physical balancing tools available to MDL as operator of the Maui Pipeline (relative to TSOs in more mature jurisdictions overseas); and
  - the need to avoid incompatibilities with the Vector Transmission Code (VTC), which would otherwise cause undesirable delays in the implementation of the Amendments.<sup>3</sup>
- We consulted extensively with industry prior to submitting the mbb CR to GIC. This included a number of one-on-one meetings with Parties as well as a formal process, described in *Appendix 1*.
- Various edits were made to the proposal as a result of industry feedback. These are canvassed in the note accompanying the mbb CR application.

3 In this submission we will:

- (a) briefly summarise the history of the balancing debate, in order to put the mbb CR in context;
- (b) do the same in relation to operational challenges and their consequences, with supporting data;
- (c) set out an analytical framework within which the efficiency gains of the Amendments (against the costs of the status quo) can be seen;
- (d) apply that analysis in responding to Covec's draft report on the mbb CR; and
- (e) set out our initial thinking on the setting of the percentage adjustment component of the cash-out pricing methodology, upon implementation of the new regime.

### 1.1 Executive summary

4 Implementation of the mbb CR would not increase delivered gas costs to end users. On the contrary, we expect it would improve primary balancing performance – and that, in turn, will decrease net balancing costs paid by end users. Moreover, the Amendments would substantially improve gas market efficiency. These efficiency benefits are set out in Chapter 3.

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<sup>3</sup> This is a reference to the "material adverse effect" clauses in Vector's Interconnection Agreement with MDL – a prospect that is discussed further in Chapter 3.8.1.



- 5 Several stakeholders have asked us to clarify whether MDL would give its consent to the 13 October 2011 and 14 February 2014 MPOC Change Requests (**b2b CRs**) if GIC does not support the mbb CR. Those stakeholders have sought this clarification, we understand, in order to determine the appropriate counterfactual against which the mbb CR should be assessed. We would like to confirm, on behalf of MDL, that MDL will not consent to the b2b CRs separately from, and other than as part of an implementation of, the complete proposal comprising all three Change Requests (i.e. the b2b CRs and the mbb CR).
- 6 Pressure leaves the Target Taranaki Pressure (**TTP**) operating range on average every second day. Pressure is above the TTP upper limit, 48 barg, one hour in every ten. An increasingly volatile demand outlook is expected to put further strain on the Maui Pipeline, strengthening the need for appropriate primary balancing incentives.
- 7 The costs of the balancing service MDL provides to users is partially hidden. This includes approximately \$1-1.2 million of Fuel Gas costs. The proportion of Fuel Gas used for pressure management (i.e. balancing) has increased significantly over the years. Whereas that figure was about 9% in 2007, in 2013 it was 90.6%.
- 8 Fuel Gas expenditure is not “recoverable” under Part IV regulation and therefore directly impacts MDL’s bottom line. If MDL did not operate the Mokau compressor as a balancing tool, and only ran it for nominations support, i.e., when nominations north of Mokau exceed 250 TJ, the projected increase in net Balancing Gas costs would be about \$3 million. This increase would be borne by end users.
- 9 Any savings on account of reduced Fuel Gas expenditure would be factored into MDL’s revenue cap for the next regulatory period (but may not result in a ‘one for one’ tariff reduction, if Fuel Gas savings are offset by operating expenditure in other categories).
- 10 The total net costs of balancing to end users are determined only by MDL’s Balancing Gas expenditure. Cash-out charges are and would continue to be part of the balancing wash-up. Any surplus is returned to Shippers in the following year, via tariff reduction. Time value of money and cross-subsidisation issues aside, an increase in cash-out activity would not translate to increased costs to end users. On the contrary, if as a result of improved primary balancing performance MDL’s net Balancing Gas expenditure decreases, then the cost to end users will decrease as well.
- 11 Based on our modelling results, net costs to end users downstream of TP Welded Points would be similar to current levels – without any improvement in primary balancing performance or investment in better data quality – if a 2.5% to 4% adjustment factor is applied in the cash-out pricing methodology. MDL will be guided by this in approaching the task of setting the adjustment percentage factor upon implementation of the new regime.



## 2 Preliminary

12 Before getting into the main body of our submission we would first like to address several preliminary matters in order to clarify certain points and give background context to what follows.

### 2.1 Clarifications

13 Several stakeholders have asked us to clarify whether MDL would give its consent to the 13 October 2011 and 14 February 2014 MPOC Change Requests (**b2b CRs**) if GIC does not support the mbb CR. Those stakeholders have sought this clarification, we understand, in order to determine the appropriate counterfactual against which the mbb CR should be assessed.

14 We would like to confirm, on behalf of MDL, that MDL will not consent to the b2b CRs separately from, and other than as part of an implementation of, the complete proposal comprising all three Change Requests (i.e. the b2b CRs and the mbb CR).

15 We would also like to make a few clarifications in response to Covec's draft report<sup>4</sup> on the mbb CR. These are set out in *Appendix 2*. Mr. Small has had a wealth of information to grapple with in a relatively short period of time and we commend him for the substantial level of accuracy he was able to achieve in his preliminary report. Nevertheless it is important that the facts are set out correctly as GIC's consultation process (and Covec's part within that) proceeds.

### 2.2 Scope of influence, downstream information and approaching evolution

16 It has been noted that factors at play outside the MPOC bear upon the balancing calculus for users of the Maui Pipeline. At least one Shipper has pointed to a lack of (and declining) flexibility in Gas Sale Agreements (**GSAs**). Almost all Shippers have pointed to information shortcomings on account of sub-optimal downstream reconciliation rules and the lack of timely, accurate metering data. A collaborative, whole-of-system approach is required, they say, if an enduring solution is to be found.

#### 2.2.1 Scope

17 We do not accept that improvements in these areas are pre-conditions to the efficient allocation of imbalance risk to pipeline users in accordance with the complete proposal – nor that its implementation should be conditional on progress in effecting any such changes.

18 We expect, as Shippers have signalled, that the Amendments would have an impact on their imbalance risk-related business processes; indeed, that is partially the point, i.e. to strengthen primary balancing performance. But it must also be noted that the concerns raised – about GSA flexibility and data quality – pertain to matters outside of MDL's control. MDL can only make system improvements by changing the MPOC. To the extent that there are other issues to be addressed, GIC – as the industry co-regulator – is well placed to investigate and recommend improvements based on the feedback it receives.

#### 2.2.2 Information, risk allocation

19 Covec's draft report notes (p.11) that:

*Although parties will want to balance daily, there is no apparent improvement in the information and/or tools available to them to achieve this, such as D+1 allocation algorithms and/or visibility of conditions on non-Maui pipelines. Until these are developed, DCO might*

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<sup>4</sup> "Daily Cash-Outs on Maui Pipeline: Outline of a Cost-Benefit Analysis," Draft Report, Covec (for GIC), 22 October 2014.



*therefore be an inefficient allocation of risk (i.e. not allocating risk to the parties best able to manage it).*

- 20 Covec also noted (p.1) that “[t]his tension appears central to the cost-benefit analysis.” MDL is aware – and does not dispute – that most Shippers face a degree of uncertainty about their position on a given day. However, given the weight being put on the Information Gap, as we will call it, the matter needs to be closely scrutinised. The fact that all the information necessary to assess the Information Gap is not publicly available<sup>5</sup> poses something of a problem. MDL has called on Shippers and GIC to share what information they have in this regard, but to date it has not been forthcoming.<sup>6</sup> In the interim, we have sought to make some deductive inferences, based on publicly available information, about what quantities could be said to be ‘at risk’ and what cost they might represent.
- 21 Much of the focus has naturally been directed to the projected impact downstream of Transmission Pipeline Welded Points (**TPWPs**). The two ‘direct connect’ users on the Maui Pipeline – Methanex and Huntly Power Station<sup>7</sup> (**Maui Direct Connects**) – have full telemetry ToU metering and SCADA, and receive hourly imbalance data (MQ and SQ) via the BGX, as do the production stations. They have clear visibility of their imbalance position at any given time and, as such, are relatively more able to manage their positions than users whose gas exits the Maui Pipeline through TPWPs (**Downstream Users**), where the information landscape is less straightforward.
- 22 In order to analyse the Information Gap we first broke down delivery nominations into these two user groups<sup>8</sup>; and found that, in 2014, the split is  $\approx 66\%$  Maui Direct Connects,  $\approx 34\%$  Downstream Users.<sup>9</sup> However we were prevented from going further with this approach by the fact that breakdown by user-group is only available for the gas market as a whole. Nonetheless we were able to draw inferences based on publicly available data, most usefully Concept Consulting’s September 2014 “Long term gas supply and demand scenarios” report prepared for GIC (**Concept Report**).
- 23 Figure 1 below breaks down deliveries by user groups across the transmission system.

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<sup>5</sup> In particular, data on the relative proportions of meters that are non-ToU, ToU with telemetry and ToU without telemetry.

<sup>6</sup> GIC in its 24 October 2014 call for submissions asked for as much evidence to be provided as possible, so it may be that – if there is a cross-submission round – there is an opportunity to make more informed comment prior to the Draft Recommendation.

<sup>7</sup> Tikorangi #3 has both receipt and delivery functionality, enabling the McKee power plant to be fed through the Maui Pipeline in the case of plant issues at the McKee Production Station (which otherwise feeds the power plant directly). Nova Energy has obtained resource consent to build another power plant in Taranaki, near Junction Road – project commencement date has not yet been confirmed by Nova Energy – which, we understand, would be hot-tapped to the Maui line near Frankley Road.

<sup>8</sup> Welded Points located at Small Stations would not be cashed-out daily under the mbb MPOC, and so were left out of the analysis.

<sup>9</sup> The Maui Direct Connect percentage has been increasing gradually, and saw a step change following recommencement of production at Methanex’s Waitara Valley plant in October 2013. In 2013 the balance was 56% Maui Direct Connect : 44% Downstream Users; from 2010 to 2012 the Downstream Users proportion was just over 50% (between 51 and 54%).

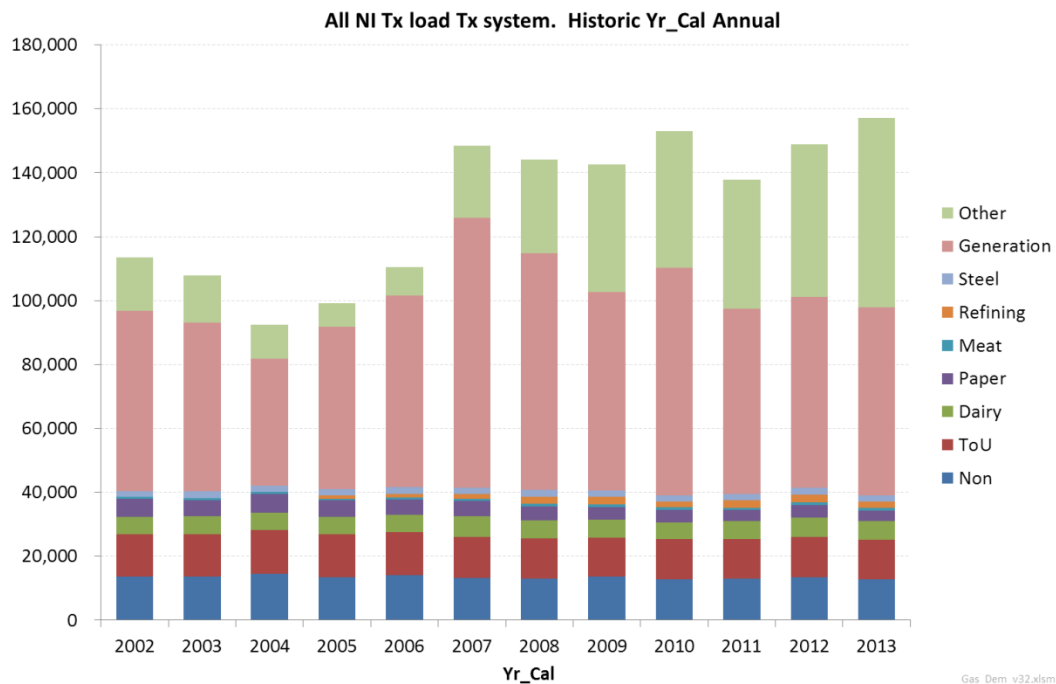


Figure 1: gas demand by user group: 2002-2013 (Source: Concept Report)

- 24 The “Non” category (in blue) represents customers without a ToU meter. These are predominantly mass-market small customers (residential and small businesses), together representing 8.1% of total gas demand in 2013. The “ToU” category (in red) represents customers with a ToU meter connected to the system downstream of a shared gas gate. These are usually industrial customers with annual demand typically greater than 10 TJ. They represented 7.9% of total demand in 2013. The remaining categories are ‘direct connect’ customers (**Direct Connects**), i.e. large industrial customers connected directly to a transmission pipeline. In 2013 this group accounted for 84% of total demand.
- 25 While Direct Connect customer demand may fluctuate both from day to day and from year to year, they do not suffer from an inherent Information Gap. They have access to full telemetry ToU metering and SCADA, and so should be able to track their positions in close to real time. They also do not suffer from allocation issues, being by definition fed through single user gas gates.
- 26 ToU customers tend to have very stable demand from year to year, even if it fluctuates diurnally and over weekends. The annual standard deviation over the 12-year period in Figure 2 is only 3.8% of the average value over that period. On the Vector North system, for example, we can see a clear pattern:



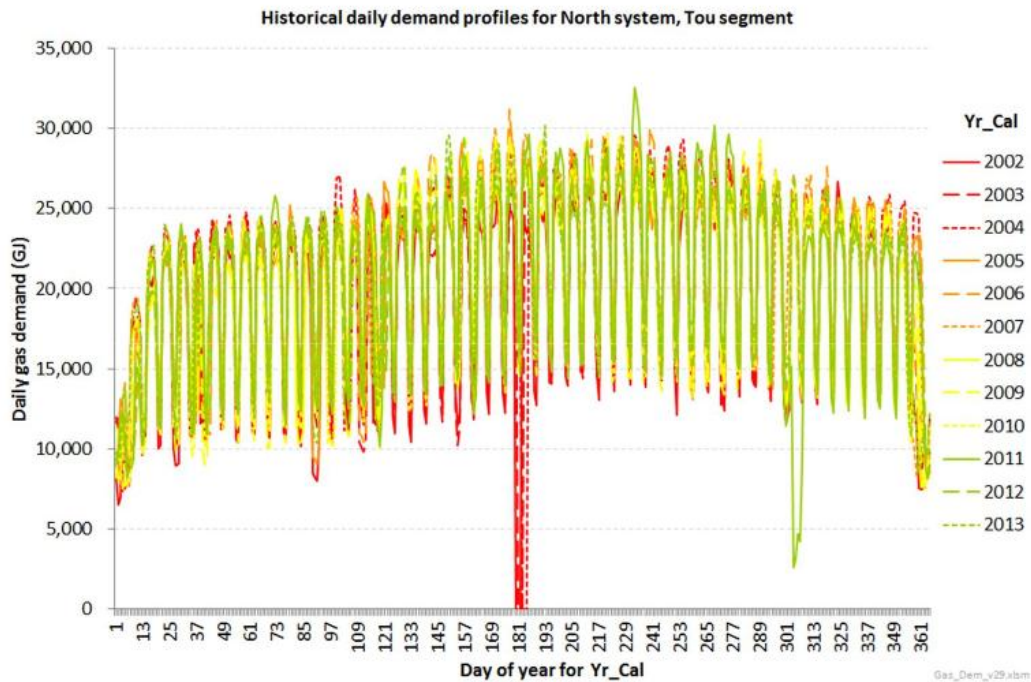


Figure 2: ToU group demand, Vector North System: 2002-2013 (Source: Concept Report, p.138)

- 27 Concept (p.139): “General business customers...have a strong weekday / weekend pattern to their consumption, but with less of a seasonal variation [relative to Non-ToU and dairy customers] – apart from a significant reduction in consumption during the Christmas holiday period. This is because of their work patterns, and the fact that the majority of their gas requirement is for process heat which is not affected by temperature.”
- 28 Non(-ToU) customers are almost just as stable, on an annual basis. Their annual standard deviation is 3.9% of the average value over the 12-year period. Concept (p.139): “As can be seen, mass-market customers...have a strong seasonal pattern to their consumption driven by the space heating requirement in winter.” On the Vector North System, the picture looks as follows:

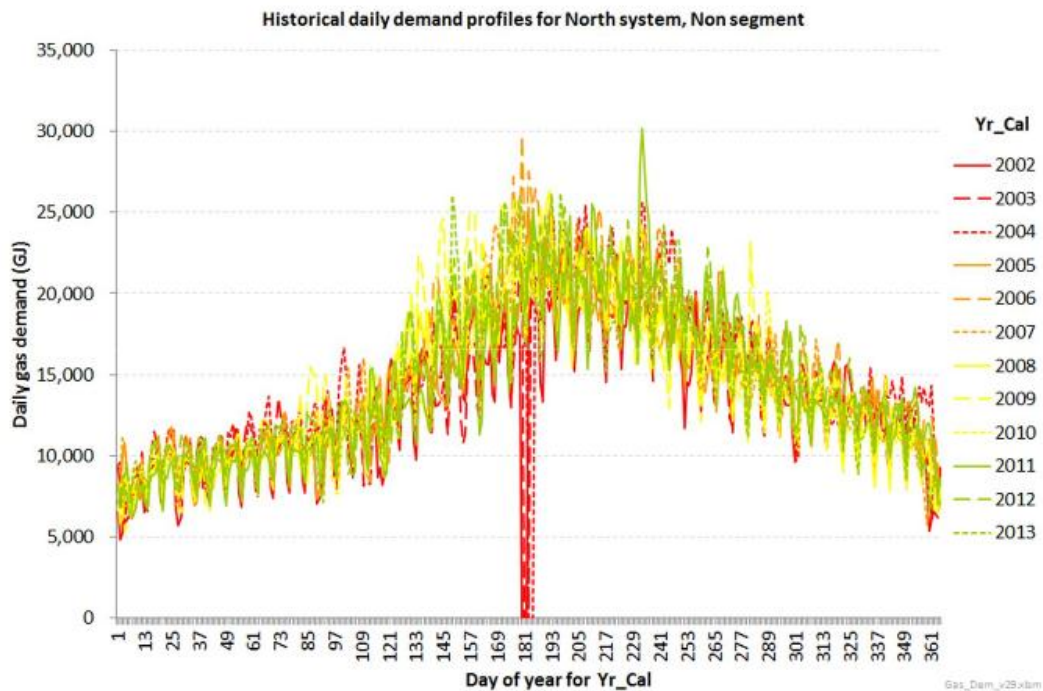


Figure 3: Non-ToU group demand, Vector North System: 2002-2013 (Source: Concept Report, p.137)

29 We attempted to model the cost of that Information Gap, based on ‘at risk’ volumes, using the following assumptions:

- No cost attributed to Direct Connect customers on the basis that they have the information necessary to effectively manage their positions.<sup>10</sup>
- A maximum ‘at risk’ volume for ToU customers of 10% of 2013 demand.<sup>11</sup>
- A maximum ‘at risk’ volume for Non-ToU customers of 20% of 2013 demand.<sup>12</sup>
- Cost exposure based on cash-out<sup>13</sup> of maximum ‘at risk’ volumes, comprising:
  - the trading fee component of the cash-out price (Cash-Out Trading Fee Price); and
  - the “adjustment” component of the cash-out price (being the percentage adjustment multiplied by the AMP).
- The AMP and Cash-Out Transmission Price components are excluded on the basis that:
  - Purchasing/selling a gas shortfall/surplus at AMP merely represents payment for gas actually taken from or left in the pipeline. To the extent that a buyer/seller could have traded gas at a different price from the AMP, this is merely a loss or gain offset by an equal gain or loss for another party.
  - The transmission fee component would ultimately have been incurred anyway; and the cash-out does not change actual throughput.

<sup>10</sup> We acknowledge that the scope to submit and revise nominations is restricted (both by OATIS and, we understand, under Vector shipper contracts with end users), although this is a separate matter.

<sup>11</sup> We expect that most of these customers should be able to manage their positions better than this, but we acknowledge that not all ToU meters are read daily. The 10% reliability is the same accuracy required under the Downstream Reconciliation rules for initial allocations.

<sup>12</sup> Again, we expect that this is very conservative, but we propose it as a ‘worst case’ scenario.

<sup>13</sup> We have assumed cash-out prices based only on the section 12.12(b)(ii) and (c)(ii) limbs of the Marginal Buy and Sell Prices respectively, i.e. the Average Market Price (AMP) limb. That is, that the market sets the cash-out price; and that MDL took no balancing actions at prices which influenced those Marginal Buy and Sell Prices.





- For the Cash-Out Trading Fee Price component, we use \$0.10/GJ being the average of the trading fees posted by emsTradepoint at the time of writing.
- For the AMP we used the emsTradepoint VWAP: \$5.54/GJ.<sup>14</sup>

30 Based on these assumptions, the maximum annual costs to Downstream Users as a result of the Information Gap come out as follows:

	at-risk volume (TJ)	maximum costs (\$000/year)		
		1%	3%	5%
adjustment value				
ToU customers	1,247	194	332	470
Non-ToU customers	2,549	396	679	961
<b>Total costs (\$000/year)</b>		<b>590</b>	<b>1,011</b>	<b>1,431</b>

Table 1: maximum expected costs of Information Gap (based on 'at risk' volumes), at different percentage adjustments

31 These numbers represent what we think is a very conservative set of assumptions, but they may be of use in bookending the Information Gap debate.

32 Perhaps more telling is the picture of projected cash-out costs under the mbb MPOC, relative to historic levels. Before getting into the modeling assumptions and results, there is a very important point to bear in mind: **cash-outs have no impact on the total cost of balancing to end users as a whole**. Rather, they are part of a wash-up: if there is a surplus, the funds are redistributed via tariff adjustment the following year. Only the total cost of Balancing Gas transactions has an impact on the cost to end users. This is a function of two things: user behaviour (taking the current Standard Operating Procedures (SOPs) as fixed) and any changes to those SOPs. If the total cost of Balancing Gas transactions over a given period remains static, then an increase in cash-out activity will only have a corresponding effect on cost distribution. The distribution matter is certainly not trivial – and we assess it below, from the viewpoint of Downstream Users – but the fallacy of increased cost to end users (and the fact that costs will total cost will decrease if primary balancing improves) needs to be recognised.

33 We modelled the expected cash-out costs under the mbb MPOC using historic data.<sup>15</sup> Our results show the net impact on Downstream Users as a whole, rather than the expected impact on an individual TP Shipper basis. This is a function of information constraints,<sup>16</sup> although given the fact that Maui imbalances are apportioned at TPWPs, it seems appropriate for us to maintain this aggregated approach.

34 Cash-outs at TPWPs are split up and passed on to TP Shippers by the BPP Trustee; and any (shortfall or) surplus in the Maui balancing wash-up results in a Tariff 2 (increase or) reduction the

<sup>14</sup> Based on data on the period from 24 October 2013, when trading began, to 16 November 2014. This price is used for several calculations and is therefore defined going forward as the **emsTradepoint VWAP**.

<sup>15</sup> Data set: 1 January 2012 to 30 September 2014. Whilst historic data has limited predictive value, especially if the commercial incentives to maintain a balanced position change, it does give a strong indication of the “worst case” scenario. Put another way, it seems a fair assumption that users can manage their positions *at least as well* as they have done in the past – without any investment in systems or personnel. Related to this, it was also assumed that Downstream Users will have at least the same level of information available to them moving forward as they have had in the past.

<sup>16</sup> We do not have the necessary information to carry out that analysis. Only the BPP Trustee would be in a position to do so.



following year.<sup>17</sup> As far as balancing costs are concerned, then, the relevant cash flows for Downstream Users would comprise<sup>18</sup>:

- cash-out payments made (passed on by TP Shippers); *less*
- cash-out payments received (passed on by TP Shippers); *less*
- redistribution of Maui balancing surplus, via reduced Tariff 2 the following year.<sup>19</sup>

35 As noted in paragraph 32 above, all three flows have an impact on cost distribution – but only the net Balancing Gas expenditure component of the balancing wash-up has an impact on net cost to Downstream Users.

36 Peaking charges are negligible, especially at TPWPs, and as such have been excluded from the analysis.

37 If at the end of a given day a Welded Point was outside of tolerance, then under the model a cash-out is simulated and that Welded Point's Running Operational Imbalance (**ROI**) adjusted accordingly. For simplicity, we used 1 TJ and 2 TJ ROILs<sup>20</sup>, when in reality tolerances would sometimes be slightly higher (on account of the SQ-related limb of the ROIL calculation). On the price side, the emsTradePoint VWAP<sup>21</sup> (\$5.54) was applied – recognising the fact that MDL would be using the spot market for its balancing actions under the mbb MPOC.

38 The following assumptions were also adopted:

- commercially, those able to manage their position would be better off balancing *ex ante* if the cost of doing so is more favourable than the cost of being cashed-out;
- therefore, those in that camp were not cashed out when the costs of managing their positions would have been lower than the cost of being cashed out; and
- the spread was calculated by doubling the product of the percentage adjustment and the VWAP.<sup>22</sup>

39 Based on 2014 data, the picture is as follows:

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<sup>17</sup> The net impact – and therefore the impact on the costs of delivering gas to end users – will differ from shipper to shipper.

<sup>18</sup> This is forward-looking, to the mbb MPOC. Currently, any Incentives Pool charges passed on to Downstream Users would also feed into the equation (these would be discontinued upon implementation of the Amendments).

<sup>19</sup> If there was a Maui balancing pot shortfall at the end of the year, then this would be reflected in an increased Tariff 2 in the following year – although the net result tends to be a surplus.

<sup>20</sup> Under the first of two soft landing periods, the ROIL Multiplier would be set at 2. This would give Welded Parties a 2 TJ ROIL for the first year. Section 12.18(d) describes this period as “up to 1 March 2016 or such later date as may be notified by MDL”. That date was tentatively included anticipating a 1 March 2015 implementation. Acknowledging the possibility of delays, an option was included to push that date out, in order to preserve the initial 12-month window.

<sup>21</sup> Based on data on the period from 24 October 2013, when trading began, to 16 November 2014.

<sup>22</sup> We acknowledge that, under the mbb MPOC, the price of MDL's balancing transactions can also feed into the cash-out price calculation (if they are higher or lower than the adjusted AMP, in the case of a sell or buy Cash-Out Transaction respectively). This however cannot be modelled; and we expect the incidence of this to be low anyway.

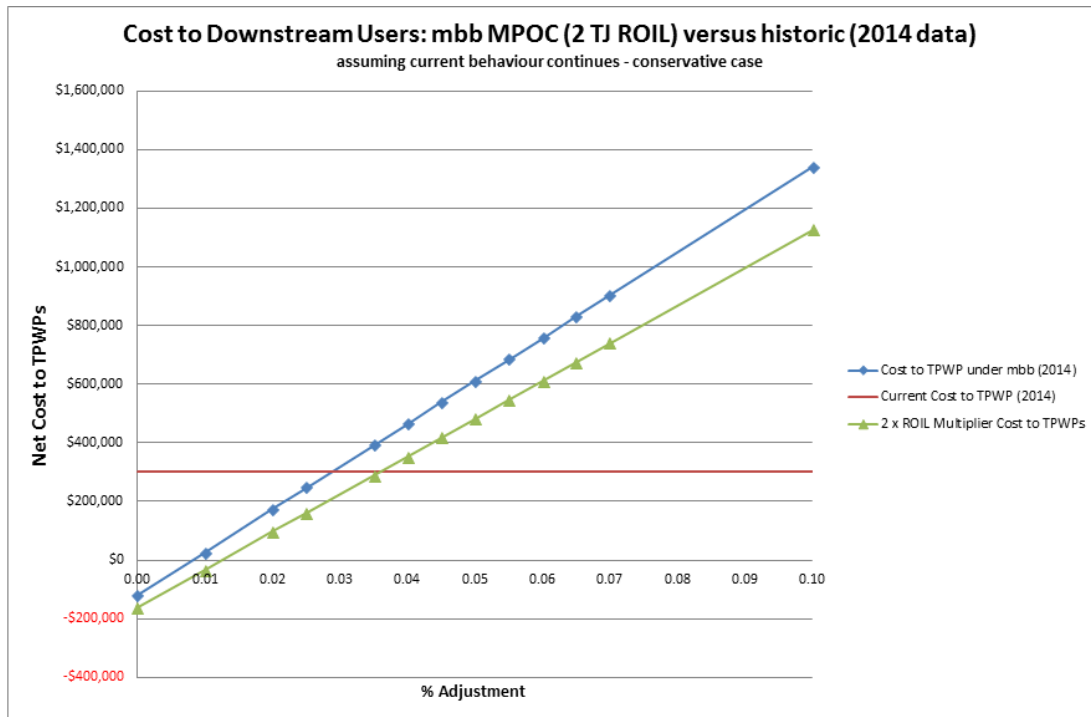


Figure 4: projected net cost to Downstream Users under the mbb MPOC, at different percentage adjustments (2014 data, YTD 30 September)

- 40 Under a 2 TJ ROIL scenario, which would apply for the first year of the new regime, cost to Downstream Users would be lower than current levels if a 3% or lower adjustment is applied. Under a 1 TJ ROIL scenario, which would apply after the second soft landing period expires, i.e. 18 months after implementation, the same would be the case if a 2% or lower adjustment is applied.
- 41 2013 data presents a similar picture, once the effect of a significant anomaly is removed. In 2013, under a 1 TJ ROIL scenario, Maui Direct Connects would have been cashed out almost entirely in a single direction. This would have created a significant net over-recovery, which (in being returned to Shippers the following year) would have outweighed the net-cash out charges paid by TPWPs – resulting in net revenue, not net cost. However, in keeping with the conservative approach to the analysis – and with the assumption that those able to remove their imbalances will do so when it is cost effective to do so – we adjusted for this effect. The revised picture (with Maui Direct Connect cash-outs removed) is shown by the purple line below. Overall, with 2 TJ ROILs, Downstream Users would be no better or worse off under the mbb MPOC with a 4% adjustment – and better off at any adjustment less than that. With 1 TJ ROILs, Downstream Users would be better off (under the adjusted scenario indicated by the purple line) at any adjustment below 2%.

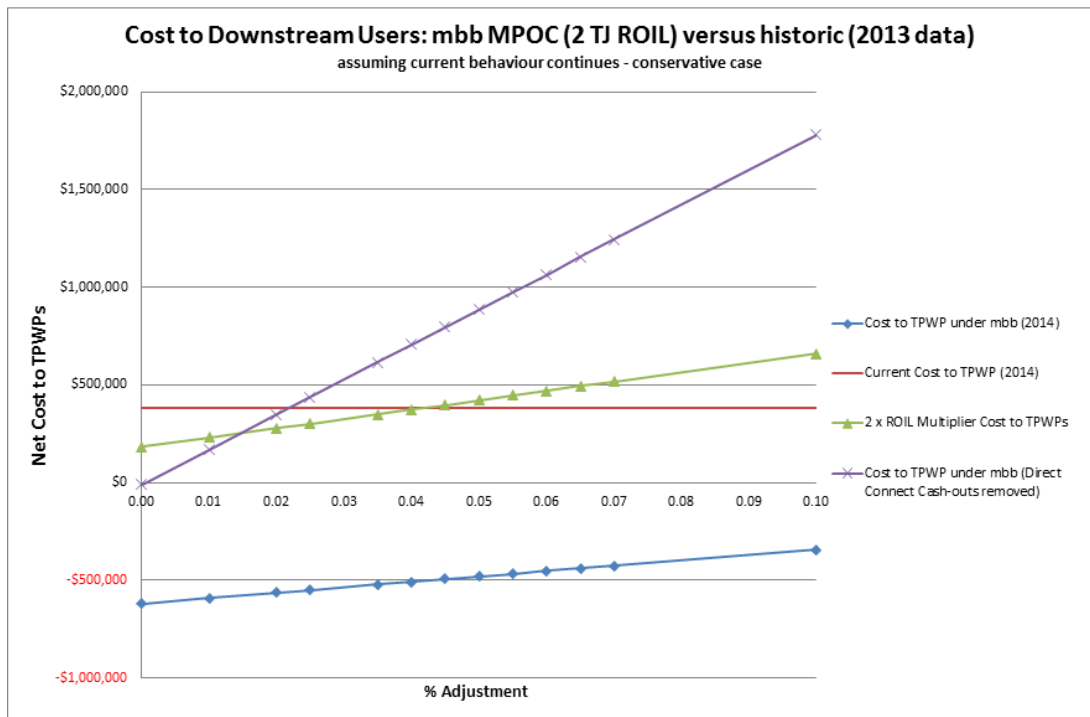


Figure 5: projected net cost to Downstream Users under the mbb MPOC, at different percentage adjustments (2013 data)

- 42 Using 2012 data, costs to Downstream Users – under both 1 TJ and 2 TJ ROIL scenarios – would be higher at any percentage adjustment above 1%.

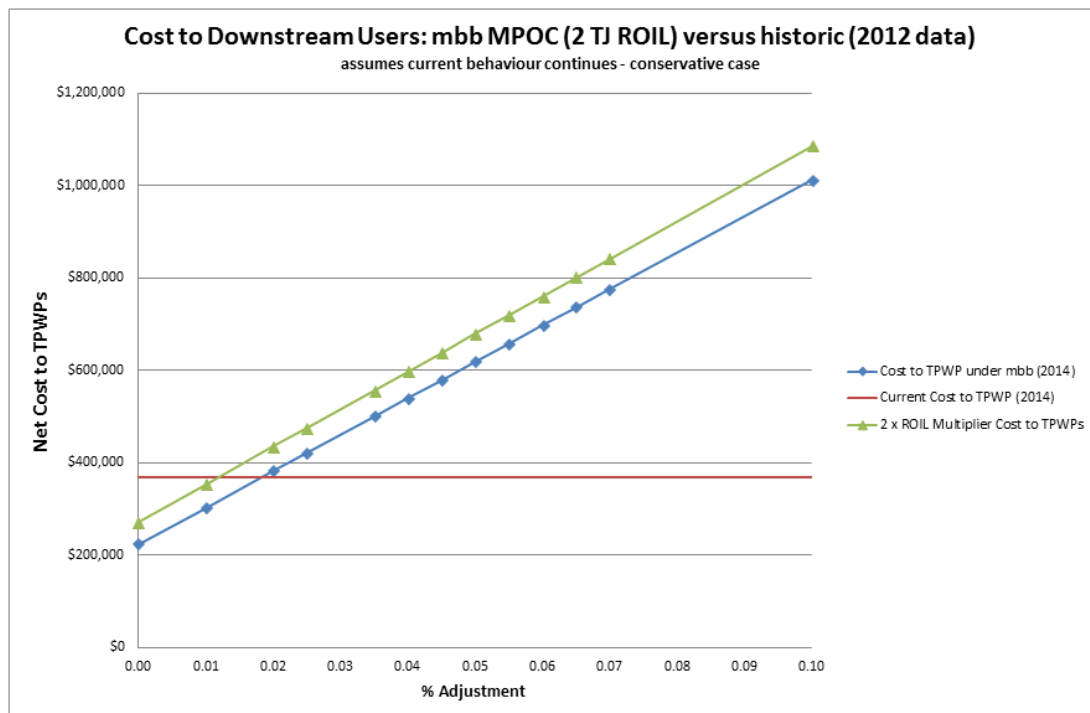


Figure 6: projected net cost to Downstream Users under the mbb MPOC, at different percentage adjustments (2012 data)

43 The results over these three years show two things: first, that the setting of the percentage adjustment factor would have an important role in determining the net cost to Downstream Users<sup>23</sup>; and second that, depending on how it is set, costs to Downstream Users could actually decrease – even based on the conservative modeling assumptions we adopted. It is worth reiterating that these results reflect behaviour based on *current* downstream data quality.

44 Figure 7 below presents a composite picture, based on 2 TJ ROILs.

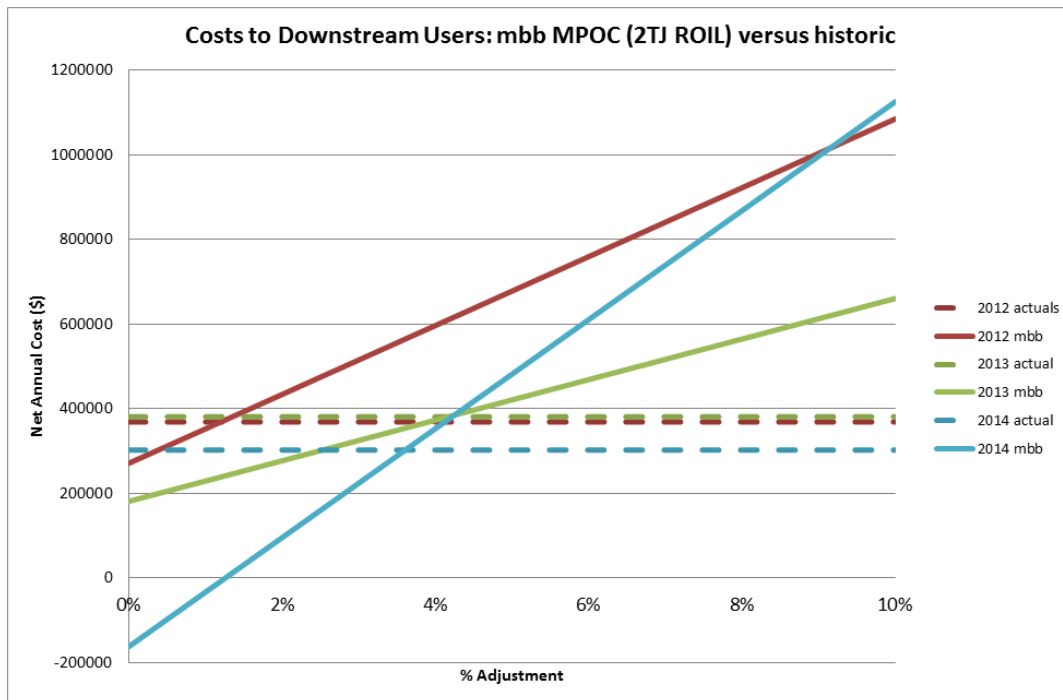


Figure 7: projected net cost to Downstream Users under the mbb MPOC, at different percentage adjustments (2012-2014)

45 There is a further, more abstract dimension to the information and risk allocation debate, which bears more on the efficiency analysis set out in Chapter 3. That is, in principle, users are better placed to balance the system than the TSO – and this makes the allocation of risk in accordance with the mbb CR a more efficient outcome. Shippers have:

- better information on their supply and demand profiles (both historic and expected);
- other flexibility options – for example, contract flexibility (on either the supply- or demand-side) or, in some cases, their own storage facilities – and can therefore utilise the cheapest or most effective option; and
- a stronger incentive to maintain balance because, if they do not, there is (or may be) a financial impact on their business – whereas MDL is revenue neutral.

46 We elaborate further on these factors and on the economic benefits of this risk reallocation in Chapter 3.5. It is sufficient for now to note that, given the relative advantages that Shippers enjoy – and regardless of what Information Gap actually exists – implementation of the Amendments would reduce the costs of managing the risks in the supply chain.

<sup>23</sup> In Chapter 5 we set out our initial thinking on how this would be approached, looking ahead to implementation.



### 2.2.3 GSA flexibility

47 Whereas the Information Gap appears to be the primary Shipper objection to the mbb CR, an apparent lack of GSA flexibility has also been cited as a barrier to change. This raises what will be a central focus in this submission – the flexibility market – but we respond briefly to the point here, as a precursor to that discussion. In our analysis, wholesalers could pay a higher price for greater flexibility<sup>24</sup> – and that may be a more efficient outcome for the market. The point is that there is currently no need to pay for that flexibility because it is provided free of charge by the Maui Line Pack. It is in fact more accurate to say that inter-day use of that Line Pack is un-priced, and that creates a number of distortions. An efficient flexibility market cannot and will not emerge until (inter-day) Line Pack flexibility (**LP Flex**) is priced; and that will not occur until a daily cash-out regime is implemented. This is a cornerstone of our submission and we will expand on it further in Chapter 3.

### 2.2.4 Approaching code evolution

48 Industry participants have called for a collaborative, whole-of-supply-chain approach to balancing regime change. MDL is not confident that such an approach could be successfully led other than by a regulator with appropriate coercive powers. Despite the best intentions behind the creation of the recently convened “pipeline management” working group, the divergent commercial interests of the different actors throughout the supply chain make it doubtful to us that a satisfactory result could be achieved by consensus.<sup>25</sup> The difficulties encountered during and subsequent to the various industry initiatives established over the years to address balancing issues – for example, the Industry Code Development (**ICD**) process in late 2009 – are evidence of as much. (Incidentally, this was Vector Wholesale’s view back then.<sup>26</sup>) For this reason we suggest, as we have done before, that industry collaboration is focused on system improvements that would be beneficial regardless what commercial balancing regime is in place. For our part we will soon begin consulting with industry on changes to the OATIS nomination cycle times and to the gas day.

## 2.3 History

49 The MPOC will be ten years old in August 2015. It is worth looking back at how things have evolved in that time. History shows that Shippers – which during the first four years of Open Access benefited from free<sup>27</sup> LP Flex, provided by the Maui field pursuant to Legacy commitments – have tended to resist balancing market evolution since. A desire to avoid transparent, fully costed pricing of what was once free is understandable; but, in our submission, the industry is now ready to move from adolescent code arrangements towards a mature balancing regime. Implementation of the complete proposal comprising the mbb CR and the b2b CRs would mark a significant step towards maturity, in line with international good practice and New Zealand Government policy.

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<sup>24</sup> Flexibility premiums tend to be paid (i.e. the price of flexibility is signalled) ‘on both sides’ of the Shipper: upstream, between the producer and the Shipper; and downstream, between the Shipper and end user. As the Concept Report notes (at p.34): “Consumers whose pattern of consumption varies throughout the year will typically pay a premium on this – which can be material for some ‘peaky’ profiles... from a gas producer’s perspective, providing flexible supply imposes a cost because throttling back gas production will also defer the production of liquids. Gas supply contracts with a relatively peaky profile will generally command a higher price than contracts that provide little flexibility for the customer to alter daily demand.”

<sup>25</sup> There is also a risk of bias towards certain stakeholder group interests, if the process doesn’t get equal buy in from representatives throughout the supply chain.

<sup>26</sup> See Vector Wholesale’s letter to GIC dated 4 December 2009, noting that it would not sign the ICD MoU and the reasons for that. A copy of the letter is posted on GIC’s website: Work Programmes > Transmission Pipeline Balancing > Policy Development > ICD Process > Memorandum of Understanding – Integrated Gas Balancing Regime > Responses from companies who did not sign the MoU

<sup>27</sup> “Free” in this sense is distinguishable from the situation described in paragraph 47, in that the costs of providing Legacy-related flexibility was not socialised through the tariff as it is now, but rather borne directly by the Maui Mining Companies.





### 2.3.1 Initial approach to balancing

- 50 At the start of Open Access the great majority of gas supplied to the Maui Pipeline came from the Maui field. Legacy gas provisions in the MPOC meant that Incentives Pool and balancing charges could not be levied on the majority of pipeline users (those which had access to gas through contracts with the Crown). Substantial imbalances between Scheduled Quantities (**SQs**) and Metered Quantities (**MQs**) occurred on an almost daily basis. The balancing instructions issued to the System Operator in September 2005<sup>28</sup> authorised it to make nominations to STOS for the Maui field to offset the imbalances caused by Legacy Gas users. MDL also held a Balancing Gas contract in place, but this agreement was not used much, if at all.
- 51 In general, this meant that control of pipeline pressures relied on the flexibility of the Maui field, which could increase or decrease production at short notice during the day to keep the pipeline within the required pressure envelope. Nevertheless it was clear that the ability of the Maui field to provide this flexible response during the day would decline as time went on (and the Maui field was drawn down).
- 52 From the inception of Open Access there were systematic problems with pipeline over-pressure. This was due to Shippers, mainly Legacy Gas users, ordering more gas than was being used – although there were also significant daily fluctuations in both directions. The reasons for these included:
- the existence of “take or pay” contracts, which provided an incentive to take gas (surplus to end user requirements on a given day) and leave it in the pipeline for future use; and
  - Legacy Gas exemptions which made it difficult to impose workable primary balancing incentives.
- 53 A number of meetings were held with the industry during 2006 and 2007 in an attempt to resolve these issues, without real success. Substantial daily imbalances still occurred, resulting in a large accumulation of ROI at Oaonui. The picture in June 2007 looked like this:

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<sup>28</sup> See the first document listed under “MDL Instructions & Operator Procedures” on the [OATIS publications page](#)

Diagram 1: Pipeline Balance for June 2007 (GJ)

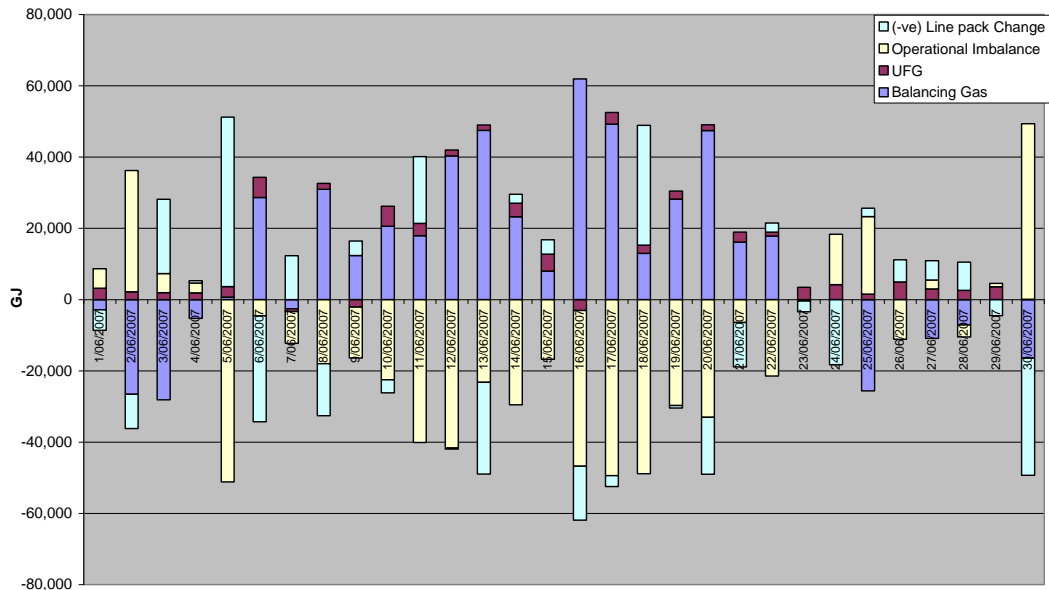


Figure 8: Maui Pipeline Balancing, June 2007

### 2.3.2 Early responses

- 54 GIC, in the meantime, had been expressing concern. It consulted on and released a number of reports – culminating in two Statements of Proposal (October 2007 and October 2009). These are posted on the “Transmission Pipeline Balancing” work programme page of GIC’s website.
- 55 Meanwhile, most notably from mid-2008 onwards<sup>29</sup>, MDL took various measures of its own to improve balancing market efficiency.

#### 2008

- The Balancing Agent began to buy Balancing Gas under competitive contracts in 2008, enhancing transparency and non-discrimination.
- On 20 June 2008, following agreement with the Crown, MDL submitted a Change Request removing the Legacy Gas provisions from the MPOC. This came into effect on 12 December 2008 and allowed balancing and Incentives Pool charges to be levied, incentivizing better primary balancing behaviour.<sup>30</sup>
- A revised Balancing Gas Instruction was issued to the Commercial and System Operators on 20 June 2008. These instructions, which were revised on 5 December 2008, are still in force (though they are expected to be revised soon). They state among other matters that:
  - MDL Operators must seek to have access to supplies of balancing services to support flexibility tolerances, the requirements of the MPOC and normal day-to-day requirements of pipeline inventory fluctuations.
  - The Commercial Operator (CO) should seek to contract balancing services from a range of suppliers and sources.
  - Balancing Gas was divided into two types:

<sup>29</sup> Some steps were taken prior to this time too. For example, in 2007, post-Intra-Day nominations for Maui Gas were discontinued – improving the cost-to-causer nexus by facilitating cost-recovery from TP Welded Points – and ILON timespans were reduced.

<sup>30</sup> It also removed uncertainty about cashing out AEOI at Welded Points through which Legacy Gas had flowed.



- Secondary Balancing Gas (**SBG**) that would be called on during OATIS scheduled nomination times, using the standard nomination mechanism.
- Operational Balancing Gas (**OBG**) that could be called upon in short order, at timeframes not accommodated by SBG arrangements. OBG would initially be provided by the Maui field until competitive arrangements could be put in place. (There were further restrictions requiring Maui field OBG nominations to be matched by nominations in the opposite direction within a short period of time.) The CO was instructed to call bids for the supply of OBG.
- SBG was to be contracted through a Master Call and Put Agreement.<sup>31</sup>

#### 2009

- Incentives Pool charges were introduced, bringing in an arms-length process for recovering costs caused by daily and hourly imbalances.
- The BGX was launched, improving the availability and transparency of information on the balancing market by providing real-time hourly data. Put / call spreads also narrowed.
- Two Change Requests were submitted:
  - 30 April 2009: to reduce the notice period for changes to Mismatch Prices from seven days to one day.
  - 17 December 2009 (**original b2b CR**): to introduce a “back-to-back” (**b2b**) balancing system that (if supported by GIC) would have:
    - removed any doubt about Vector’s obligation to meet balancing charges under the OBA arrangements;
    - incorporated a new section on Balancing Principles;
    - increased transparency surrounding balancing operations;
    - initiated same day cash-out of Mismatch;
    - kept the Incentives Pool as a residual mechanism for recovering balancing costs;
    - recovered balancing costs associated with peaking; and
    - introduced “pay now, dispute later” provisions.

#### 2.3.3 The pursuit of an industry-led solution

56 The industry, through the ICD Process – a series of meetings in late 2009 – sought to demonstrate that an industry-led solution to balancing was achievable. The process resulted in an MoU (**ICD MoU**) which was signed in December 2009 (in certain cases, with minor modifications) by all ICD participants except Vector. The original b2b CR was submitted shortly thereafter.

57 GIC did not support the original b2b CR, so MDL went back to the drawing board. After further work and consultation MDL submitted the 13 October 2011 Change Request (**b2b CR**). It substantially reflected the ICD MoU (including, for example, the provisions relating to transparency and role definition) and was deliberately restricted to the bare minimum amendments necessary to bring in a b2b allocation model. Without a spot market open to all pipeline users, the

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<sup>31</sup> These provisions led to the introduction of the BGX for handling balancing gas transactions. The OBG access to the Maui field was not used, other than for the reduction of the negative ROI balance at Oaonui which accumulated as a result of earlier overpressure incidents. The “short order” facility relied on a matching facility in the opposite direction from another provider, and was never used (in fact, OBG facilities from suppliers other than Oaonui were never put in place). Access to the Oaonui facility was gradually restricted for operational reasons, and later it was managed along with the SBG transactions under similar terms as SBG transactions through the BGX. The negative ROI balance has since been exhausted.



introduction of a daily cash-out model, in line with international best practice, was perceived not to be viable at the time. MDL saw that there were efficiency gains to be had – and that the threat of regulation remained, if the industry downed tools. The b2b CR was submitted and GIC gave its support in April 2012.

- 58 Implementation of the b2b CR was held up until late 2013 while Vector made VTC changes.<sup>32</sup> These changes fell into two categories. The first accommodated the new cash-out and Peaking Charge mechanisms that the b2b CR would introduce. The second effectively removed Vector’s risk relating to its administration of Maui balancing charges.
- 59 Once Vector withdrew the “Notice of Relevant Change Request” it had served on MDL with respect to the b2b CR<sup>33</sup>, MDL set about preparing for B2B implementation. This included, among other things, submission of a “Fix-Up” Change Request<sup>34</sup> on 14 February 2014 (**Fix-Up CR**).

#### 2.3.4 *Following the advent of spot markets, a b2b framework became no longer tenable*

60 Shortly before the Fix-Up CR was submitted, industry demand for spot market price-reflective balancing charges was becoming increasingly apparent. The ‘Spot Market Alignment’ draft Change Request circulated in early February by a Shipper consortium was the first concrete manifestation of this;<sup>35</sup> and the same theme continued in the course of submissions lodged on the Fix-Up CR. MDL’s continued use of the BGX for balancing was, from users’ perspective, becoming less tenable. And – largely because the primary balancing incentives under a b2b framework would not give MDL sufficient physical delivery confidence to use the spot market for balancing – the b2b framework’s fitness for purpose became increasingly doubtful.

61 MDL engaged with industry to determine how best to accommodate these changes to the landscape. Balancing was the primary topic for discussion at the inaugural Shippers and Welded Parties workshop on 4 April. An information paper about pipeline balancing was released on 8 April. MDL released a further paper on 28 May outlining the perceived risks to MDL in implementing b2b. Stakeholders were invited to submit their views in writing. The submissions received<sup>36</sup> made it clear that Welded Parties would dispute invoices if their objections to the way that MDL bought and sold Balancing Gas were not addressed. For example:

*If in its assessment it believes that MDL should have on a particular day purchased or sold gas from a more favourable source (where that source provided spot gas at a more reflective market price), taking account of the circumstances which led to the balancing gas action, it will be making that point and likely disputing any invoice that breaches that assessment... [Contact, p.7]*

62 MDL, as a Part IV regulated GTB, cannot sustain the risk that its operational expenses are not recoverable from pipeline users. Recognising this, MDL began developing a solution in collaboration with emsTradepoint that would satisfy two fundamental criteria:

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<sup>32</sup> These changes were proposed in a VTC Change Request which was appealed to GIC on 27 November 2012. GIC gave its draft support for that appeal on 28 February 2013 and its final support for it on 3 September 2013.

<sup>33</sup> Vector did so in writing on 18 September 2013.

<sup>34</sup> This was submitted to address technical contractual issues and to make clear how MDL would interpret the b2b MPOC once implemented, given grey areas and unforeseen developments that occurred since 2011. GIC gave a Final Recommendation in support of the Change Request on 2 May 2014.

<sup>35</sup> Under that draft proposal – which never progressed further – cash-out prices would have been benchmarked against a market chosen by GIC.

<sup>36</sup> Three formal submissions were received and published on MDL’s website. A fourth submission was received but its publication was not authorised by the submitter. This fourth submission contained even stronger signals (of expectation to dispute) than the three published submissions, including for example the statement that “...we believe that MDL is failing to act as an RPO with respect to not buying or selling balancing gas at the best price.”



- spot ‘market price’ reflective cash-out charges (for industry); and
- sufficient confidence (for MDL) that spot gas will be delivered in timely fashion.

63 The solution was a market-based daily balancing regime. Europe is in the process of implementing a balancing network code<sup>37</sup> (**EBNC**) – developed by ENTSOG<sup>38</sup> after years of stakeholder consultation<sup>39</sup> and promulgated in March 2014 – with the aim of “fostering the short term gas markets and providing price signals as well as contributing to the development of a competitive and efficient gas wholesale market...” Acknowledging that this aim was equally desirable in the New Zealand context – and timely, given the zeitgeist – MDL drew inspiration from the EBNC and its background literature in developing the mbb CR. This was also consistent with MDL’s longer term goal of evolving the MPOC in line with good international practice – and with operating the Maui Pipeline in accordance with the overarching RPO standard. Given continued operational issues, the need to strengthen primary balancing incentives persisted.

64 The mbb CR can thus be seen as an evolution from what was always acknowledged to be an interim step (b2b) towards a mature regime, made possible by the advent of wholesale spot markets available to all users. In 2010 GIC wrote to the then Associate Minister, recommending a ‘wait and watch’ approach on balancing, and noting officials’ preference for giving “the industry more time to improve their balancing arrangements by aligning the codes with international best practice...”<sup>40</sup> It has taken more time than expected, but the mbb CR represents the first significant step towards that alignment. With spot markets now available for trading, the conditions now exist for this change to be made.

65 MDL is concerned that if the mbb CR is not implemented, the commercial viability of ems’Tradepoint’s spot market could be prejudiced by the lack of a daily delivery incentive – and that the disappearance of a reliable market platform would represent a backwards step for the industry.

## 2.4 Facts and figures

66 The debate about how to deal with Maui Pipeline balancing has continued since the beginning of Open Access on the Maui Pipeline. To give that debate its proper context, all interested parties need to have access to the facts and figures. This will also be helpful for advisers who may be relative newcomers – in particular, for Covec. Set out below are some relevant facts about what Part IV regulation means for MDL, followed by some relevant operational data. We also canvas various contractual considerations to highlight the competing forces at play between MDL and its MPOC counterparties.

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<sup>37</sup> Commission Regulation (EU) No 312/2014 of 26 March 2014 establishing a Network Code on Gas Balancing of Transmission Networks, L 91/15.

<sup>38</sup> The European Network of Transmission System Operators

<sup>39</sup> As noted in the second bullet point under paragraph 2, GIC and industry will be familiar with a substantial portion of that consultation work and its high level outputs – at least while this was being led by ERGEG – given that it was referred to in the course of intensive industry engagement on balancing issues in 2008-09 (and during consultation on the b2b Change Requests that followed).

<sup>40</sup> Letter dated 8 September from GIC Chairman, Hon. Jim Bolger, to Hon. Pansy Wong, (then) Associate Minister of Energy and Resources: “Recommendation on Transmission Pipeline Balancing,” p.2



### 2.4.1 Part IV regulation

#### **MDL makes no commercial gain from balancing**

67 The first point to note (which is less a function of Part IV than it is of the MPOC) relates to MDL’s motivations in submitting the mbb CR.<sup>41</sup> In accordance with standard gas transmission practice, balancing is a ‘no profit, no loss’ activity for MDL.<sup>42</sup> MDL cannot and does not make any commercial gain from balancing activities. It is a wash-up: the costs and revenues associated with cash-outs, Incentives Pool claims and Balancing Gas Puts and Calls go into a pot; and to the extent there is a surplus or shortfall at the end of the year (as inevitably there is), it is offset in the following year through tariff adjustment. This is permitted by the “recoverable cost” mechanism in the Input Methodologies (IMs) Determination made by the Commerce Commission (ComCom) under Part IV.

#### **Cash-out chargers are part of the balancing wash-up**

68 Vector Transmission has also questioned whether the funds associated with cash-outs under the mbb MPOC would be “recoverable”; and if not, how they would be handled.<sup>43</sup> A Cash-Out Transaction (under the mbb MPOC) is the same as a sale or purchase transaction (traditionally referred to as a “cash-out”) effected pursuant to section 12.11 of the current MPOC upon the expiry of an ILON. While the balancing period would shorten and the pricing methodology would change, the two are essentially the same mechanism. They even appear in the same part of the MPOC. The inclusion of cash-out related funds in the wash-up mentioned in paragraph 32 is accepted practice (both by industry and by the ComCom). To avoid doubt, MDL would continue to treat cash-out funds in the same manner.

69 As we have previously mentioned, we expect users would prefer a monthly (rather than annual) wash-up facility, to capture the time value of money. This is an aspect of the EBNC we would support introducing as a follow-up measure. It would require MPOC changes which were not included in the mbb CR, because they would have created a VTC incompatibility – which we have taken care to avoid.

#### **OPEX**

70 Balancing costs are a “recoverable cost” under the IMs.<sup>44</sup> Costs associated with running the Mokau compressor; with conducting Disputes; and with code development, are not recoverable. They form part of MDL’s OPEX and thus present a risk to its bottom line. It is therefore rational for MDL as a commercial entity to seek to minimise these costs. We believe the implementation of the Amendments would go a long way to mitigating risks associated with them.

- *Fuel costs:* See paragraphs 75-81 below.
- *Dispute costs:* Covec in the draft report identified that “...the risk of perverse incentives under B2B arises from the fact that it makes balancing actions the trigger for cash-outs...”, something that “appears to set up a game in which shippers and welded parties try to predict balancing actions and then work hard to avoid bearing costs as a consequence of balancing actions that are taken.”<sup>45</sup> Indeed this is the central flaw of the b2b framework. Though Covec was inferring different negative effects, a related problem

<sup>41</sup> Covec notes on page 12 of the draft report that “...speculation is occurring as to the underlying motivation for change.”

<sup>42</sup> The only caveat is that this applies only to ‘balancing’ in the narrow sense. It excludes Fuel Gas costs associated with balancing and lost transmission revenue associated with curtailments.

<sup>43</sup> Vector raised this question at the GIC workshop on 5 November 2014

<sup>44</sup> The full definition of a “recoverable cost” is set out in section 3.1.3 of the Consolidated Gas Transmission Input Methodologies Determination 2012, dated 25 February 2013. A copy of the IMs is posted on the ComCom’s website.

<sup>45</sup> See p.7 of the report





is that b2b would have put added focus on every MDL balancing action – the time at which it was taken, the quantity and the price. This would have systemically increased the likelihood of disputes being raised (evidence of which can be seen in paragraph 61 above and in the consultation to which that paragraph refers). Disputes can be expensive, particularly given that balancing is a ‘no profit, no loss’ activity for MDL.

- **Code development costs:** Protracted balancing debates impose a substantial cost on the industry; and a disproportionate cost on MDL as the common counterparty in all of those debates. Part IV regulation has brought investment in code evolution into sharper focus. MDL would like to see the MPOC settle into a steady state. Friction will continue (and expenditure will continue to grow), in our view, until the MPOC and VTC both reflect international good practice. We acknowledge that evolution needs to be measured, but have already noted our view that the mbb CR is just that. Its implementation would mark a significant step in the right direction, enabling the industry to focus more on tweaks and on other areas. MDL does not believe that calls to reinvent the wheel (at great cost) can be justified when there is a depth of overseas experience that could be implemented by making these more evolutionary changes.<sup>46</sup>

71 It is seldom acknowledged that lower MDL operating costs are likely to translate into lower transmission tariffs for pipeline users, over time. This is a key feature of cap regulation.<sup>47</sup> The ComCom, when it sets MDL’s revenue cap for future periods, will take into account MDL’s expenditure in the then current period. While it is not certain that a given cost saving will be passed on ‘one for one’ (for example, the ComCom may take a global approach, i.e. savings in one line item may be inconsequential if the net result is ‘over-expenditure’), all other things equal, cost savings will be passed on to Shippers through lower transmission charges. Both at the margin and over the long term, MDL is incentivised to pursue cost savings; and those savings will be passed on to pipeline users and their customers.

#### 2.4.2 Operations

72 Throughout the discussions with industry to date, there have been wide ranging calls for more data to be provided. In response to industry requests and assertions or inferences made by Covec in the draft report, we would like to note the following (references to pressure are to pressure at Bertrand Road).

##### ***Pressure leaves the TTP envelope every second day***

73 Between 1 January 2013 and 3 November 2014 pressure moved below 42 BarG or above 48 BarG on 341 of 671 days. That is, on 50.1% of days the pipeline conditions venture outside the target operating range. Over-pressure incidents tend to be more widely acknowledged, but in fact only slightly more than half of these excursions can be attributed to high pressure (188 out of 341 days, 55%).<sup>48</sup>

##### ***Pressure is above TTP Max nearly a tenth of the time***

74 Between 1 January 2013 and 27 August 2014 pressure exceeded 48 BarG 9% of total hours. As industry will be aware, high pressure tends to manifest more in the summer months – particularly

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<sup>46</sup> We address this issue further in Chapter 4.2.5.

<sup>47</sup> As KEMA notes: cap regulation (incentive regulation) is based on the concept of mimicking competition, i.e. exposing regulated companies to certain risks in exchange for higher profit potential. In practice this means the provision of efficiency increases requirements over a multi-year regulatory period.” “Study on Methodologies for Gas Transmission Network Tariffs and Gas Balancing Fees in Europe,” KEMA, prepared for the European Commission (December 2009), p.59

<sup>48</sup> The 28% figure was calculated as at 27 August 2014, but there is not expected to be a material difference created by not factoring in days between that date and 3 November.

in Q1 – but it is by no means a summer-specific issue. During Q1 2014 pressure exceeded 48 BarG in 12% of total hours.

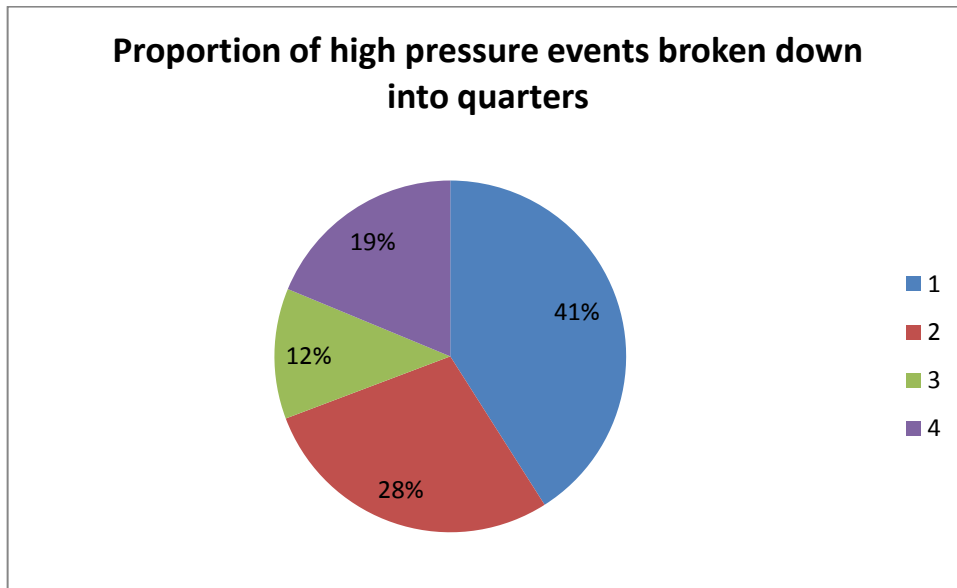


Figure 9: proportion of high pressure events by quarter

**>90% of Mokau compressor use is for balancing**

75 Between 1 January 2011 and 16 November 2014, of the hours that the Mokau compressor was on, nominations north were above 250 TJ per day just  $\approx 9\%$  of the time. The remaining  $\approx 90\%$  of Fuel Gas was used solely for pressure management (balancing). This reflects a growing trend illustrated by Figure 10 below. Increased compressor use for pressure management is one of the underlying drivers of the reduction in Balancing Gas levels over time. As has been noted above, Fuel Gas costs are not “recoverable” under the IMs and therefore present a risk to MDL’s bottom line.

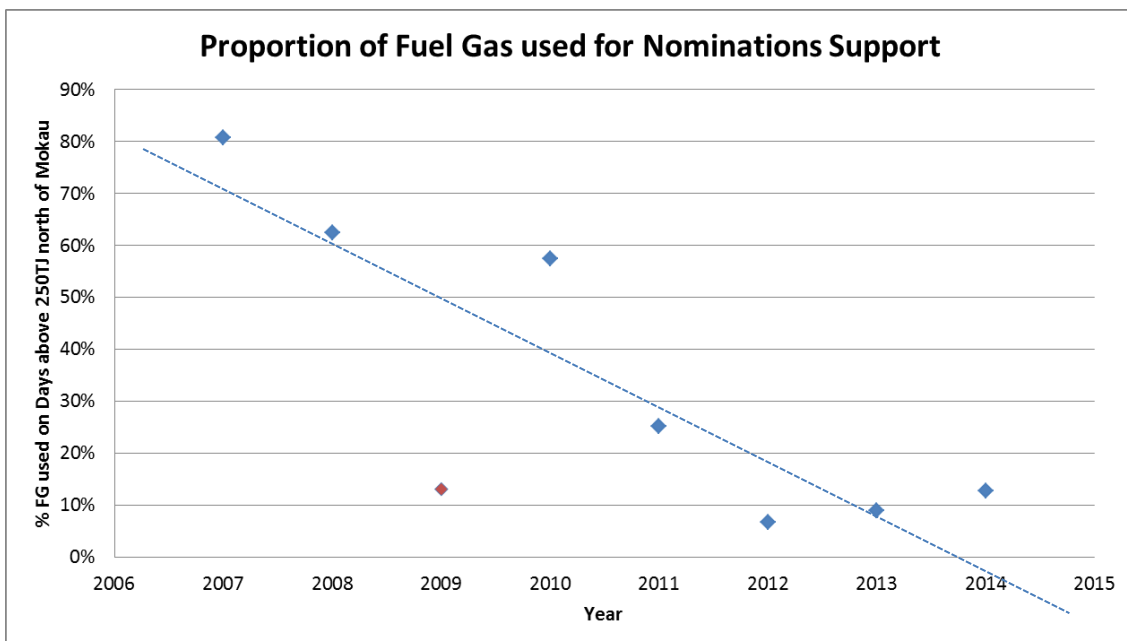


Figure 10: Proportion of Fuel Gas used to support Nominations (annual)



- 76 In 2008 over 80% of Fuel Gas was used to support nominations north of Mokau, compared to less than 10% in 2012 and 2013<sup>49</sup>. This has resulted from a changing operational environment, notable changes being the expiry (in May 2009) of the Maui Legacy Gas contracts and (in September 2012) of the \$0.70 Oaonui OBG facility.
- 77 The use of the compressor to balance the pipeline comes at a cost to all users, because it shapes MDL’s OPEX and that, in turn, feeds into the tariff calculation (albeit in the longer term). MDL takes the short term risk/reward (0-5 years) on changes in Fuel Gas costs, but in the long term the users of the pipeline will bear any cost increase, or benefit from any cost reductions.
- 78 In order to estimate the cost of the balancing service historically provided by the Mokau compressor the quantity of Fuel Gas not associated with nomination support was derived from the data set. This is considered to be any Fuel Gas used on days when nominations north of Mokau were below 250TJ. The quantity of Fuel Gas calculated was then multiplied by the emsTradepoint VWAP.

Cost of Mokau For Balancing			
Year	Fuel Gas Used for Balancing (%)	Fuel Gas Used for Balancing (GJ)	Estimated Cost of Fuel Gas for Balancing (\$)
2007	19.2%	65,514	363,000
2008	37.6%	80,999	449,000
2009	86.9%	120,581	668,000
2010	42.6%	97,521	540,000
2011	74.8%	105,058	582,000
2012	93.4%	182,581	1,012,000
2013	91.1%	213,195	1,181,000
2014	87.2%	163,197	904,000 <sup>50</sup>

Table 2: Historic cost of using Mokau for balancing - Fuel Gas

***If MDL stopped using the Mokau compressor for balancing, the expected increase in cost to the industry (only on account of Balancing Gas Puts and Calls) would be approximately \$3 million per annum.***

- 79 If MDL stopped using Mokau for pressure management, the additional volumes of Call and Put Balancing Gas that would have been required are shown in Figure 11 below. Compressor fuel is currently sourced from Line Pack or under a tendered Fuel Gas contract. Line pack is used when the pipeline has a higher underlying position than the Target Line Pack, which occurs predominantly as a result of positive UFG. Given that there is currently a large spread between the Put and Call prices on the BGX, it is more efficient to nominate from Line Pack than it is to Put gas, only then to purchase a quantity of gas to run the compressor. This practice is in place to minimise costs to the end user, however it does result in the compressor running at a discounted cost (which in turn masks price signals).

<sup>49</sup> The 2014 figure is artificially inflated by the consideration that it does not include a full year’s data. The level of pipeline management Fuel Gas usage is higher in non-winter months, and if the trends of 2012 and 2013 continue for the remainder of 2014 MDL would expect the 2014 figure for Throughput support to drop to below 10%.

<sup>50</sup> 2014 data to 10 November. Annual figure is expected to be in line with 2013.



80 Figure 11 was constructed by modeling Line Pack since 1 January 2011 and simulating additional balancing actions when set limits were breached. The operational limits used for the modeling were set as the minimum and maximum Line Pack that the pipeline could sustain while remaining within the TTP operating range (without Mokau running). Although the operating envelope actually narrows as nominations north of Mokau increase, the larger operating envelope of lower flows was used to ensure that the results erred on the conservative side.

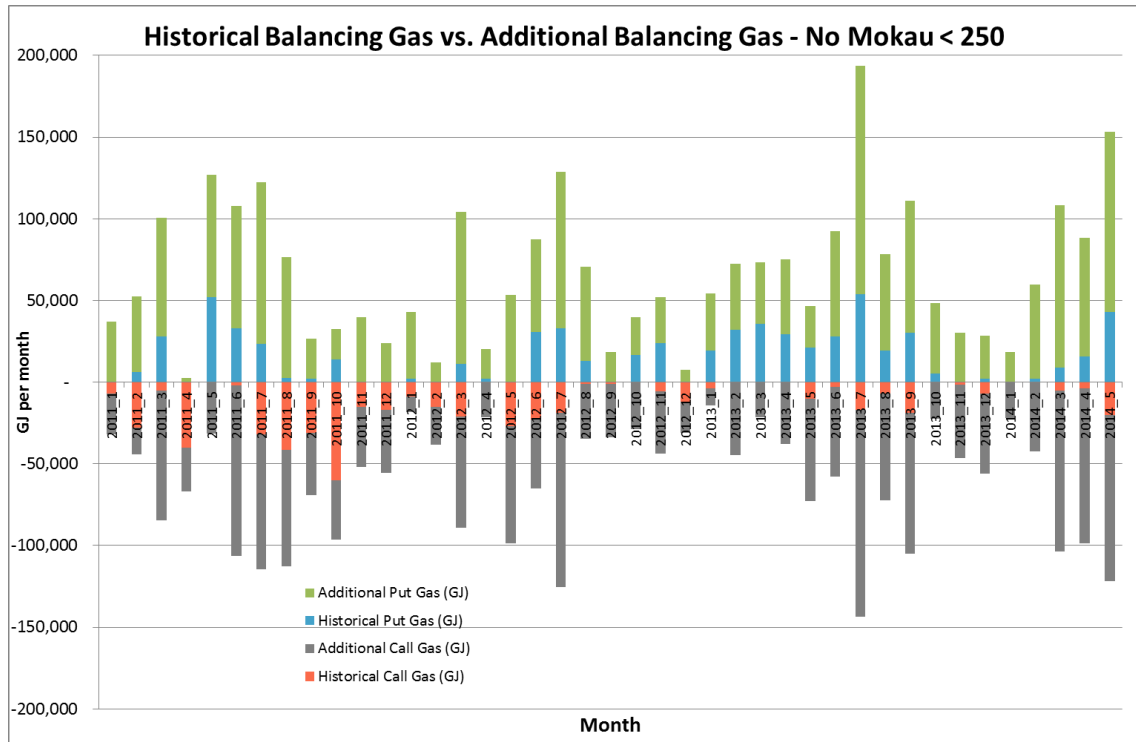


Figure 11: Additional Balancing Gas Transaction if the Compressor was not used for Balancing

81

82 Table 3 below shows the projected effect on balancing costs<sup>51</sup> if the compressor was switched off when not required for nominations support. The additional cost to pipeline users would be \$3 million per annum.

Year	Historical Call	Additional Call (\$)	Historical Put (\$)	Additional Put (\$)	Historical Net (\$)	Additional Net (\$)
2011	- 2,408,560	- 4,346,723	159,315	881,499	- 2,249,245	- 3,465,224
2012	- 1,083,924	- 3,663,318	261,783	757,334	- 822,141	- 2,905,985
2013	- 561,535	- 4,638,986	550,438	942,107	- 11,098	- 3,696,880
2014	- 260,850	- 2,658,901	84,125	537,101	- 176,725	- 2,121,801 <sup>52</sup>

Table 3: Summary of the increased balancing costs from not using the compressor for balancing

**50 TJ Line Pack fluctuations over three days (the effective ILON period) occur more than one day in every ten**

<sup>51</sup> Based on actual historic BGX prices at the time that Balancing Gas would have been required

<sup>52</sup> 2014 Data only includes January-May due to limitations in the data set used to create this model. The annual figure would be substantially higher than the 5 month snapshot provided here.

83 Figure 12 shows Line Pack fluctuations<sup>53</sup> over two time intervals: intra-day and over three days (i.e. the effective ILON period). Unsurprisingly, Line Pack fluctuations tend to be greater over the longer period. Because fluctuations were calculated by subtracting the minimum Line Pack value during each time interval from the maximum Line Pack value during that time interval, the graph does not convey Line Pack volatility within each time interval (which, particularly in the case of the three day period, causes pressure fluctuations that trigger compressor use, i.e. cost). The Maui Pipeline can accommodate imbalances of approximately 40TJ whilst remaining within the TTP range (from 42-48 barg), without Mokau operating. As Figure 12 shows, the pipeline can accommodate the 40 TJ intra-day fluctuations approximately 96% of the time. However, the accumulation of imbalances across multiple days means that >40TJ fluctuations over rolling 3-day periods occur about 30% of the time. The pipeline cannot withstand these fluctuations, and at the same time remain within the 42-28 barg operating envelope, without compressor support.

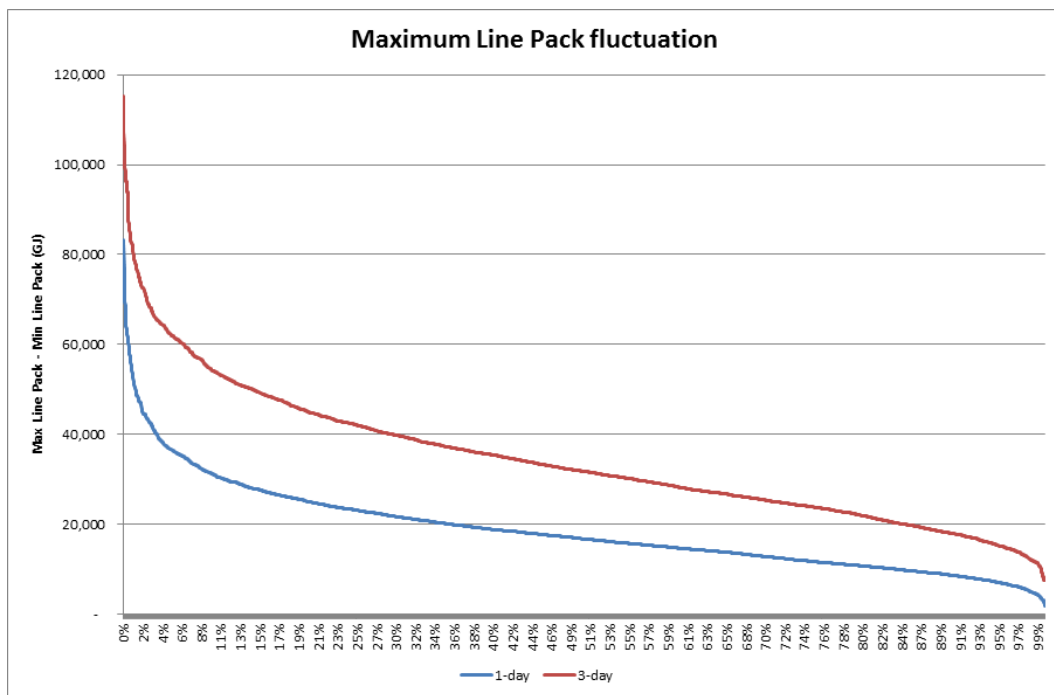


Figure 12: Line Pack fluctuations over 1- and 3-day time intervals

***When pressure is outside of the TTP envelope, Delivery Points tend to have a higher average ROI than do Receipt Points***

84 Covec’s draft report inferred that production stations’ preference for flat injection profiles is a major cause of Maui pipeline over-pressure issues. In response to this we assessed the comparative primary balancing performance of Receipt and Delivery Points on days when pressure remained within the TTP range – and on days when pressure excursions occurred. We found that the average sum of hourly ROI at Delivery Points – when pressure was above 48 BarG – was 17,369 GJ.<sup>54</sup> At Receipt Points it was less than half of that: 7,930 GJ. When pressure was below 42 BarG, the figure for Delivery Points was 9,162 GJ; for Receipt Points it was almost a third lower: 6,081 GJ.

<sup>53</sup> Data set: 1 January 2011 to 31 May 2014

<sup>54</sup> Data set: 1 January 2010 to 30 September 2014

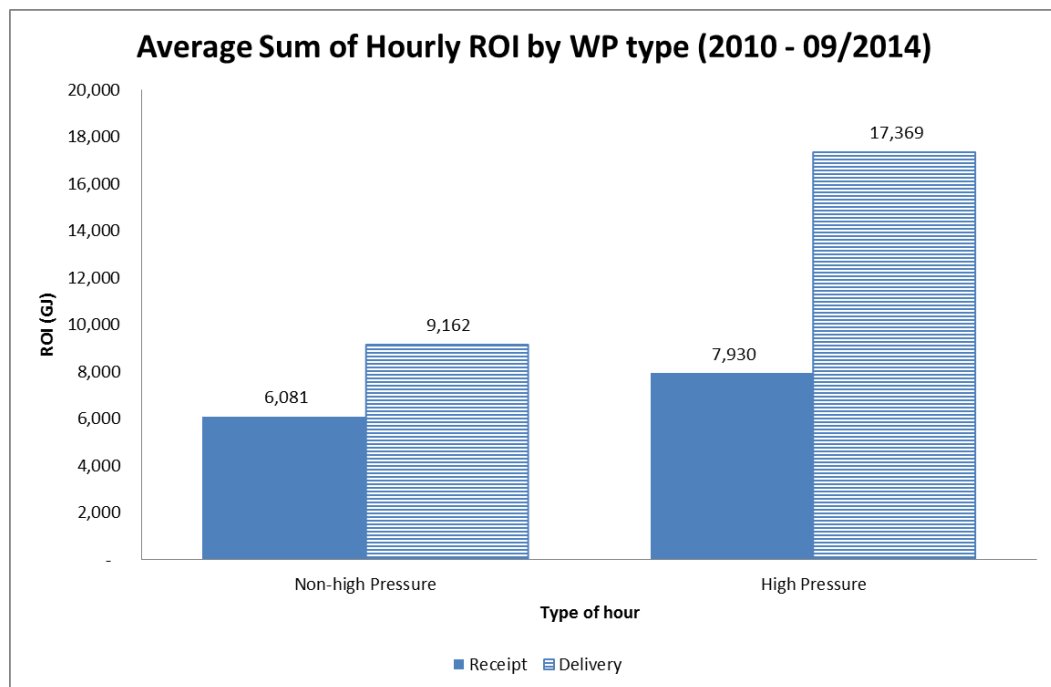


Figure 13: relative contributions of Receipt and Delivery Points to low and high pressure

- 85 Taking the same metrics, when pressure was above 48 BarG, ‘Delivery ROI’ was greater than ‘Receipt ROI’ 71.5% of the time.
- 86 This tends to rebut the first limb of the supposition on page 8 of the draft report that “over-pressure is caused primarily by a preference for flat production patterns combined with weekday/weekend variability in demand...” The following tends to rebut the second limb.

**High pressure does not systematically manifest most on weekends**

- 87 As the graph below demonstrates, between December 2009 and October 2014, Monday was the day on which pressure most often exceeded 48 BarG. Tuesdays and Sundays were also above the daily average, although Thursdays had more high pressure excursions than Tuesdays, Wednesdays and Fridays. Whilst there is a weak trend in the data, **Error! Reference source not found.** Figure 14 clearly shows that all days of the week incur high and low pressure excursions, and that Saturday has more low pressure events than high pressure events. In any case, high pressure issue is not confined to weekends, nor does pressure show a strong weekly trend.



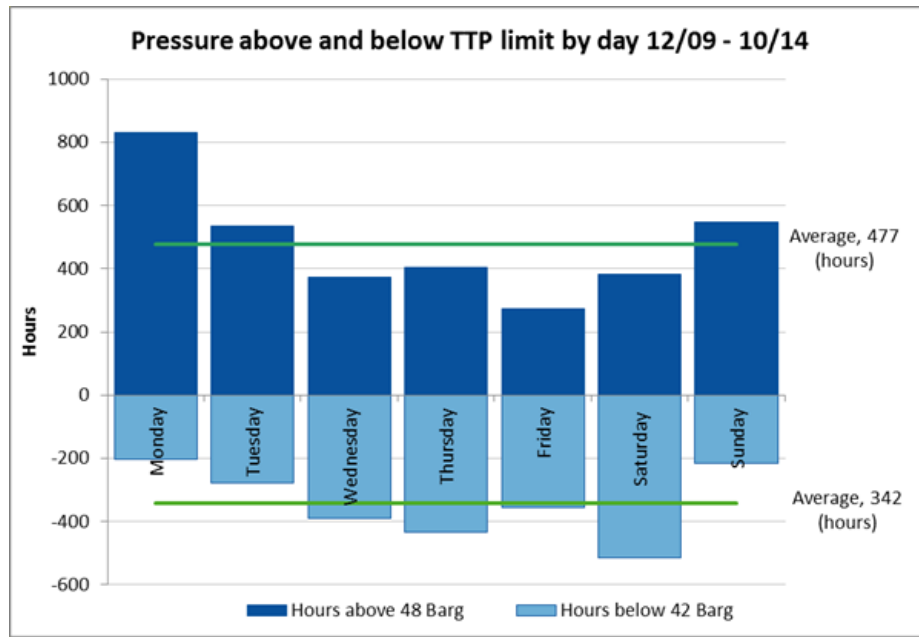


Figure 14: Incidence of high and low pressure by day of the week

**Primary balancing performance differs across different Welded Point categories**

88 The Maui Pipeline has three main categories of Large Physical Welded Points: Receipt Points, Maui Direct Connects and TPWPs. There is a marked difference in primary balancing performance across these categories. Historically TPWPs have carried the largest imbalances, with Maui Direct Connects and Receipt Points much the same as one another (the former with slightly lower imbalances). Figure 15 **Error! Reference source not found.** shows this by way of a frequency chart.

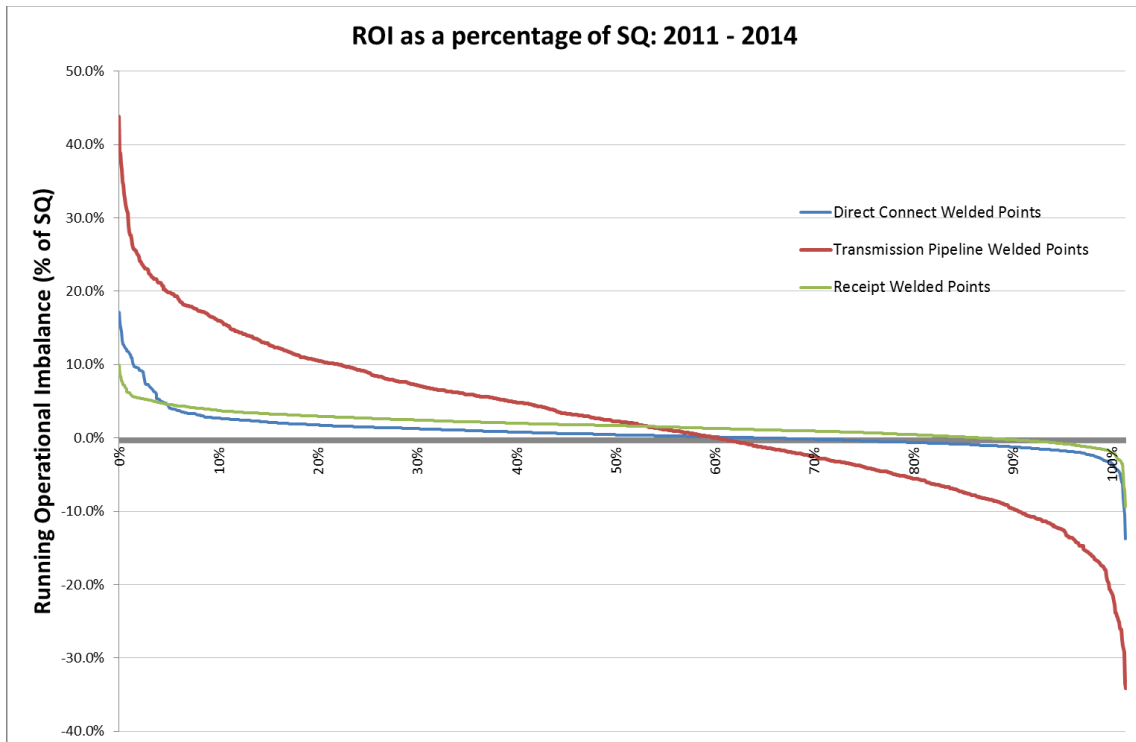


Figure 15: Primary balancing performance of the three main Welded Point types: 2011-14

89 As has been noted above, there are Direct Connect customers (power stations and large industrials) connected to Vector transmission pipelines downstream of TPWPs. It could be expected that these Direct Connect customers, if offered the tools and operational regime to manage their positions effectively, could achieve the same level of primary balancing performance as Maui Direct Connects. This prospect is outside of scope for the purposes of the mbb CR and this submission – although we encourage GIC to consider what initiative it can take in this context, alongside its downstream reconciliation work stream.

**Primary balancing performance at TP Welded Points shows little sign of improvement since 2007**

90 Figure 15 above shows the primary balancing performance data from 2011 through to 2014. To ensure that the data gives a fair representation of primary balancing performance, the annual performance of TPWPs was compared across two years, six years apart.

91 MDL provided a frequency chart for TPWP ROI levels as part of its submission on GIC’s August 2008 Transmission Pipeline Balancing Issues Paper. The figure showing, for a given day of the year, Operational Imbalance at TP Welded Points and total Maui Pipeline Operational Imbalance, has been reproduced using 2014<sup>55</sup> data to determine whether there has been a substantial change in Downstream User behaviour since 2007. The 2014 data has been overlaid on the original 2007-8 data and shows that – apart from a slight improvement in performance on days where gas is short – there has been no material change.

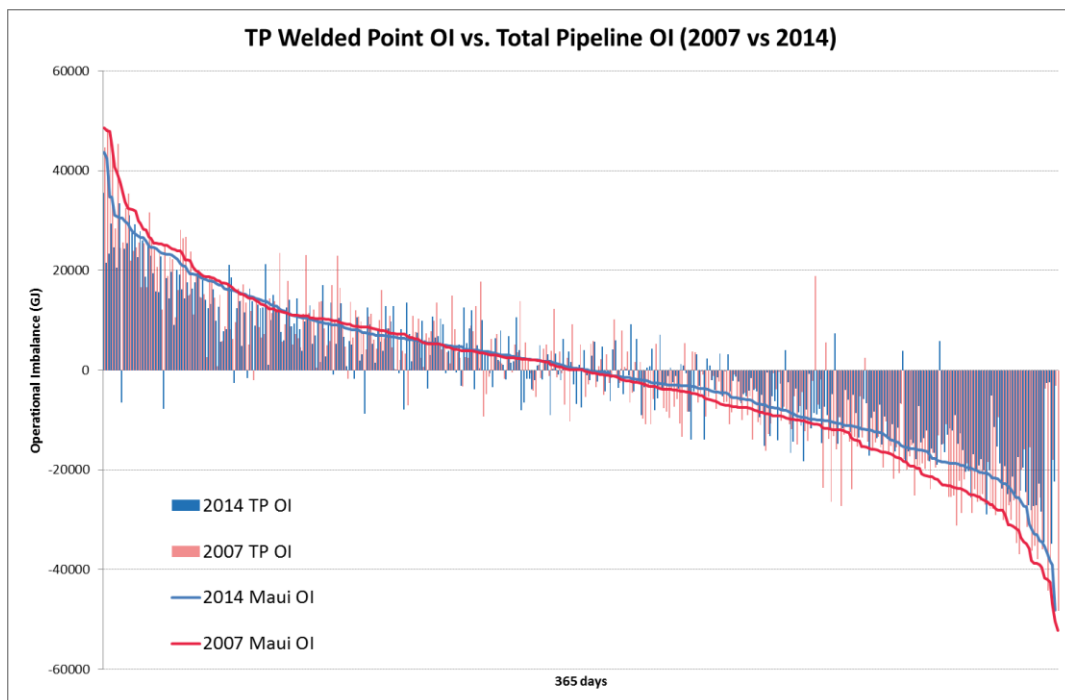


Figure 16: TPWP Operational Imbalance compared to Maui Pipeline Operational Imbalance 2007 vs. 2014

**The Maui Pipeline starts the day with >20 TJ imbalances 17% of the time**

92 As stated above, the Maui Pipeline has limited inherent flexibility and the available flexibility changes significantly based on whether the Mokau compressor is running or not. Given that under

<sup>55</sup> The 2014 data set runs from August 2013 through to July 2014 (365 days). A year of data was used for each analysis to mitigate the risk of skewed outputs due to any underlying seasonal trends



MDL's SOPs intra-day flexibility is provided based on Target Line Pack being set "approximately 25TJ" above the Contingency Volume, and that the "green zone" of operational flexibility ranges from 33-78 TJ depending on operating and Mokau conditions, MDL's ability to provide intra-day operational flexibility is at risk.

- 93 The operational flexibility provided for under the MPOC is premised on intra-day, not inter-day flexibility (except in rare circumstances when the Contingency Volume is able to be released). As such, any day where the pipeline starts with a significant imbalance could result in MDL operating without the level of intra-day flexibility that it needs to be able to provide contracted tolerances to cover peaking and Operational Imbalance.
- 94 In the past year, the pipeline has begun a day with >20 TJ imbalances 63 times, or 17% of days. Only by running the compressor for balancing (incurring Fuel Gas costs) could the anticipated intra-day flexibility be provided on these days.

#### **2.4.3 Contractual obligations and the incentives created by them**

- 95 Under section 12.1 of the MPOC, Physical Point Welded Parties are required to ensure that, by the end of each day, MQ=SQ at each of their Physical Welded Points. The consequences of having Operational Imbalance at the end of a day are set out in section 12. The obligation to match MQ to SQ is only as strong as the strength of the consequences that apply if there is a breach. It is commercially rational for pipeline users to make use of (and profit from) any contractual leeway that is provided to them.
- 96 Current primary balancing incentives make it difficult for MDL to satisfy its MPOC obligations, however. This is particularly the case in relation to the level of intra-day flexibility that MDL provides – a level originally designed to accommodate intra-day imbalances, rather than inter-day imbalances – when set against the restraints provided by the Target Taranaki Pressure (**TTP**).

##### *Section 2.5(c)*

*Subject to the provisions of this Operating Code, MDL shall, acting as a Reasonable and Prudent Operator... **use reasonable endeavours to manage the Target Taranaki Pressure to be as low as practicable** while maintaining **sufficient Line Pack** to meet its obligations under this Operating Code [our emphasis added]*

##### *Section 2.19*

*The Target Taranaki Pressure shall be between 48 and 48 bar gauge, except as may be required as a result of a Contingency Event, Force Majeure Event or Maintenance...*

##### *Section 2.20*

*If necessary to keep the expected Maui Pipeline pressure under the maximum Target Taranaki Pressure limit, MDL will adjust Shippers' Nominated Quantities and Approved Nominations in accordance with section 8.*

- 97 MDL must use reasonable endeavours to maintain Bertrand Road pressure<sup>56</sup> between 42 and 48 BarG and to maintain it as low as practicable within that range in order to:
- (a) deliver Shippers' Approved Nominations; and
  - (b) provide, using reasonable endeavours, a reasonable quantity of Gas for use in a Contingency Event; and

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<sup>56</sup> Under the Target Taranaki Pressure in section 1.1, the calculation is made at or near the Bertrand Road Welded Point.



(c) provide, using reasonable endeavours, a reasonable quantity of Gas to allow for delivery within the relevant Peaking Limit and Daily Operational Imbalance Limit.

98 This is more complex than it sounds given the non-linear relationship between Line Pack and pressure (this depends on flow rates and whether the compressor is running). However MDL has a general goal of operating the pipeline in such a manner that pressure tends towards the lower end of the TTP envelope. The operational data set out in chapter 2.4.2 above demonstrates that – despite use of the tools available to it, in accordance with its SOPs – MDL struggles to manage within this target level – and this is creating direct costs. The only ways to improve things are either to give MDL more tools; to increase use of the existing tools (at greater cost); or to strengthen primary balancing incentives. In Chapter 3 we will argue in favour of strengthening primary balancing incentives – which in turn would result in a more efficient wholesale gas market.



### 3 A more efficient regime

99 In this Chapter 3 we set out our view of the appropriate analytical framework within which to assess the mbb CR. In preparing this submission we sought the support of NERA, which provided a valuable independent perspective on the economics. NERA’s input runs through both this Chapter and Chapter 4, in which we focus more on Covec’s draft report.

#### 3.1 Executive summary: why the proposed regime is more efficient than current MPOC

100 MDL can offer a certain level of LP Flex without detrimentally affecting its ability to transport nominations. Over-use of LP Flex, however, comes at a cost to MDL and third parties. The current primary balancing incentives effectively allow Shippers to use LP Flex across days, causing MDL to incur Fuel Gas and Balancing Gas costs to maintain the system within operational limits. Those costs would not need to be incurred if LP Flex was only drawn on intra-day, with users returning the system to balance by the end of each day. The social costs of LP Flex over-use – negative externalities – fall on other actors in the supply chain too. These costs include, for example, demand-driven curtailment costs<sup>57</sup> and upstream production losses associated with high pressure (**Upstream Losses**).<sup>58</sup>

101 At the root of this problem is the lack of a transparent price for using LP Flex on the Maui Pipeline. As a consequence:

- The decision-making of Shippers in respect of flexibility is distorted. In particular, they will use an inefficiently large amount of LP Flex, and a corresponding inefficiently low amount of other flexibility tools, even if these are more appropriate (allocative inefficiency).
- Shippers who tend to use relatively little LP Flex subsidise those who use more (also allocative inefficiency).
- There will be under-investment in alternative flexibility tools, e.g., gas storage (dynamic inefficiency).

102 The mbb CR would improve on each of these outcomes. In other words, benefits of the proposal (compared to the status quo counterfactual) would include:

- An improved price signal to users of the cost of LP Flex, resulting in improved allocative efficiency, and more broadly increased competition between flexibility mechanisms.
- A reduction in the cross-subsidisation, resulting in more efficient use of LP Flex and improved allocative efficiency.
- An improved price signal to investors in flexibility, resulting in improved dynamic efficiency. Indeed, we would expect an improved price signal for LP Flex to increase demand for other flexibility options, and this may lead to innovative flexibility solutions.

103 The mbb CR would also reallocate risk to flexibility users, who are better placed to manage that risk than MDL, because:

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<sup>57</sup> We are not privy to information on how those costs are allocated under GSAs.

<sup>58</sup> Again, we do not have access to quantitative information on Upstream Losses, although we expect production station operators will share this information in their submissions.



- They have better information on their supply and demand profiles (both historic and expected).<sup>59</sup>
- They have other flexibility options, and can therefore utilise the cheapest or most effective option.
- They have a stronger incentive to balance than MDL.

104 Therefore the costs of managing the risks in the supply chain would reduce, resulting in a benefit to end-users. By allocating more of the costs and risks of balancing to responsible shippers, and generally giving them stronger incentives to minimise costs, balancing on the Maui Pipeline would be at a more efficient level. Among other things this would reduce the negative external effects of imbalance, such as Fuel Gas costs, demand-driven curtailment costs and Upstream Losses. We cannot quantify the latter two, but Fuel Gas costs alone could be reduced by up to \$1.2 million<sup>60</sup> (based on current compressor practice). If MDL stopped using Mokau for pressure management, the expected extra balancing costs – which could be avoided by better primary balancing performance – would be up to \$3 million.

105 Under the mbb CR, cash-out prices would reflect spot market prices. This would preserve the incentive on users to take balancing actions, even as demand and supply conditions alter. Another advantage of using the spot price is that it would increase the number of spot transactions, as users take balancing actions. This should in turn increase the liquidity of the spot market, with wider benefits to the industry, including:

- More efficient price discovery, i.e., the spot price would more quickly reflect changing demand and supply pressures.
- Narrower spreads and less volatility (other than that reflecting changes in demand and supply pressures).
- The ability to trade unders and overs, and relatedly, an improved source of direct flexibility. Indeed the combination of a more liquid spot market and a more efficient flexibility market should lower contracting costs.
- Lower risk for investors in gas fields.

### 3.2 Unbundling of the two distinct services that gas pipelines provide

106 Gas pipelines provide two related but discrete services: transport and flexibility. These services belong to different markets with different characteristics.

107 While the transport service may have natural monopoly characteristics<sup>61</sup>, the flexibility service is quite different. It competes with other real or potential sources of flexibility in what is, in principle, a competitive market. Pricing is market-based and entry is open to all. LP Flex needs to be seen as one of multiple potential sources of flexibility if it is to be properly understood and its use properly governed.

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<sup>59</sup> To the extent that data quality is a concern, the mbb CR would create incentives for shippers to invest in better systems if it would be efficient to do so. Whether that investment occurs, however, does not detract from the fact that shippers have the best information about their supply and demand profiles – and this puts them in a better position to balance the system than MDL.

<sup>60</sup> Based on the last full year data set, being 2013. 2014 is expected to yield a similar result.

<sup>61</sup> Notably, the North American theory (and regulation) on long distance gas pipelines is quite different to the European approach, with the market for long distance gas transport in the US having always been relatively competitive. The New Zealand reality much more closely reflects the European model.





### 3.3 Flexibility and the flexibility market

108 The International Energy Agency defined flexibility as “the ability to adapt supply to variations and fluctuations in demand or to adapt elements of demand in the case of insufficient supply.”<sup>62</sup> It can be provided by actors at any point along the supply chain – from producers to end users. And it takes many forms. For example: swing production, LP Flex, storage facilities, interruptible contracts with end users, and spot market gas. Flexibility can be provided by a variety of tools, each differing in the dimensions of: capacity (injection/withdrawal rates); timing (advance notice, ramp rates); and volume (storage capacity or similar limits). Each tool will have different costs and benefits, and the most appropriate tool (or combination of tools) for any individual user will vary over time. For the sake of efficiency and the long-term benefit of end users, it is important that the costs of each of these tools are signaled to Shippers. This is best done through price.

109 At any one point in time, users will tend to deploy whatever available source is most cost effective for them. The availability point is not trivial: different user groups of the same system may have different sources of flexibility available to them – in other words, some users don’t have the full suite of flexibility tools at their disposal – and that asymmetry can create social cost. This relates to market size.<sup>63</sup> In general, anything that can be done to expand the flexibility market (or to merge flexibility markets in which different actors currently participate) will increase the scope for competition to bring about efficient outcomes. As KEMA notes:

*It is a fundamental finding of economic theory that small and fragmented markets reduce the scope for competition, whilst larger markets help to promote competition by increasing the number of players and reducing the potential influence of dominant market participants. This conclusion is universal...<sup>64</sup>*

110 In the context of a relatively immature market, more users competing (i.e. increased demand) for the same flexibility leads to more efficient provision of that flexibility, including investment and innovation in flexibility – provided there are appropriate market signals. Once again, the caveat is important (and the importance of signals will be a common theme in this Chapter). Coase framed this negatively: the allocation of rights over resources has no welfare implications if there is a workable market and clear price signals.<sup>65</sup> Paraphrasing: without clear price signals the initial allocation of rights over resources will have (potentially negative) welfare implications for the community – in this case, for gas end users.

111 In order for the flexibility market to operate efficiently, each flexibility tool must be used efficiently, i.e. no single tool should be over-used or under-used.

### 3.4 The importance of efficient balancing rules governing the use of pipeline flexibility

112 Inefficient contractual terms will inhibit the development of a competitive flexibility market. On the assumption that competitive markets put downward pressure on prices, more efficient rules governing LP Flex will – in improving allocative, productive and dynamic efficiency in the flexibility market – in turn lead to lower delivered gas prices.

113 A cornerstone of this logic is that the system becomes more efficient when the users of a service pay for the costs of providing it (and those that don’t use the service don’t pay those costs). This has been accepted by industry in recent years as a valid imperative (“cost to causer”) for balancing

<sup>62</sup> “Flexibility in Natural Gas Supply and Demand,” IEA/OECD, 2002

<sup>63</sup> This also feeds into an important dimension addressed in Chapter 3.5 below

<sup>64</sup> KEMA, footnote 47, p.70

<sup>65</sup> “The problem of social cost,” R. H. Coase, *Journal of Law and Economics* 3 (1960)



regime evolution. It will be apparent that the mbb CR is built on this underlying principle. Those benefiting from current cross-subsidisation would bear the true costs of LP Flex. Importantly, these price signals would equip those users to make a more informed choice about how they source flexibility to meet their needs (and improve decision-making by them and others about incremental development of new flexibility tools).<sup>66</sup>

- 114 Before there can be clear price signals there needs to be clearly defined and supported property rights. MPOC delineates property rights to gas on a day, but lacks the enforcement mechanisms to give full meaning to those rights. This disconnect was highlighted above, in Chapter 2.4.3. It creates an over-use problem, made possible by the nature of Line Pack as a commonly accessible resource.
- 115 All users are affected by the balance or imbalance in a pipeline. If one user takes action that brings the pipeline closer into balance, all users benefit.<sup>67</sup> This gives rise to a free rider problem: each user benefits from a balanced pipeline, but individual users do not have an incentive to rebalance the pipeline. As a consequence, without an appropriate contractual framework, the pipeline would not be adequately balanced. This is closely related to the problem about LP Flex being over-used if the contractual structure does not impose costs on users. We presume this is what Covec's draft report means when it states, "Spare pipeline capacity has the economic characteristic of a common pool resource" (p.5), although in our view it is more appropriate to think of the resource in question being LP Flex, rather than spare capacity.<sup>68</sup>
- 116 The resulting (negative) externalities manifest as social costs – for example, as Fuel Gas costs, demand-driven curtailment costs and Upstream Losses.
- 117 As noted in paragraph 75 above, at least 90% of Fuel Gas use<sup>69</sup> since 2010 (664 TJ) can be attributed to 'balancing'. At the emsTradepoint VWAP, 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.

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<sup>66</sup> That is one part of the equation. For those signals to be fully effective, users also need to have adequate information about their position too. To the extent that this is not already the case, then an incentive will be created to invest efficiently in better data; and in the meantime, any gap will represent a temporary constraint on the release of the efficiency gains inherent in the mbb CR. We have set out our deductions about the Information Gap – based on the available information – in Chapter 2.2.2 above.

<sup>67</sup> See for example Arthur van Dinther and Machiel Mulder, "The Allocative Efficiency of the Dutch Gas-Balancing Market," *Competition and Regulation in Network Industries*, Volume 14 (2013), No.1

<sup>68</sup> Once there is a price signal on the use of LP Flex, we expect over-consumption of the service to reduce, to the point where there may indeed be what Covec terms "spare capacity"; that is, 'extra' Line Pack, beyond the flexibility volume, which can be made use of. Until then, inter-day Line Pack swings will continue to negate that possibility and impact upon MDL's ability to offer the 'baseline' (intra-day) flexibility, i.e. to cover tolerances.

<sup>69</sup> Data set: 1 January 2011 to 16 November 2014

118 Curtailments create several types of costs – costs which we would expect to reduce under the mbb MPOC, as a result of better primary balancing performance.<sup>70</sup> From an MDL perspective, curtailed nominations translate to lower transmission revenue (tariffs being payable on nominations, not actual flows), although the impact of this is not material. We are not privy to the details of how curtailments are handled in GSAs but, whatever happens, the costs of ‘lost production’ must fall on either the buyer or the seller (or both). Whether it is a producer or another wholesaler whose nominations have been curtailed – despite the fact that they may have been flowing as they had contracted to flow – there is a cost associated with lost production (by a producer or end user<sup>71</sup>) that has been caused by a third party. We cannot quantify these costs or elaborate on how they are allocated, but we observe them nonetheless.

### 3.5 Users are best placed to balance the system

119 The mbb CR is premised, among other things, on the underlying principles that:

- users cause imbalances
- users are better placed than the TSO to balance their positions.

120 The first point is self-explanatory. The second rests on several reasons highlighted in Chapters 2.2.2 and 3.1 above: users have better information, often access to more flexibility tool options and a stronger incentive to maintain balance. The allocation of imbalance risk to them is thus relatively more efficient, and this is most efficiently done through incentives to balance *ex ante*. This is recognised in market-based balancing regimes overseas; and reflected, for example, in the EBNC.<sup>72</sup>

121 On the information front, even if the data available to them is imperfect, users have better information (than the TSO) on their supply and demand profiles – both historic and expected. They also have flexibility options which the TSO does not have – for example, contract flexibility (on either the supply- or demand-side) or, in some cases, their own storage facilities.<sup>73</sup> Importantly, balancing has a commercial dimension for them, i.e., failure to remain in imbalance has an actual cost which is not recoverable; whereas in the TSO’s case – because balancing is a ‘no profit, no loss’ activity – this is not the case.<sup>74</sup>

122 Given these factors, from a holistic perspective, we would expect the costs of managing risks in the supply chain to reduce if the Amendments are implemented. This would result in a benefit to end users. That benefit may not be even – those with flatter or more predictable loads would benefit more than those with variable or less predictable loads – but, once again, this is a desirable outcome from an overall economic perspective.

### 3.6 A daily balancing period

123 Gas is bought and sold as a daily product, whether under GSAs or on the spot market. Its transmission is nominated (that is, signaled and paid for) on a daily basis. Welded Parties are

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<sup>70</sup> Notably, not all curtailments are a function of primary balancing performance. Some (section 15.2 curtailments) are Welded Party-initiated, following plant trips and other technical issues. However the majority are demand-driven: 77.5% of curtailments since 1 January 2013 were a function of primary balancing performance; the other 22.5% were Welded Party-initiated.

<sup>71</sup> There will be no loss of production if the user has access to alternative fuels – although even then, presumably gas was being used because it was more cost effective at the time, and therefore use of an alternative fuel will come at a cost.

<sup>72</sup> Article 4(1) of the EBNC: “The network users shall be responsible to balance their balancing portfolios in order to minimise the need for transmission system operators to undertake balancing actions...”

<sup>73</sup> Contact and Vector Gas Contracts have access to their own storage facilities

<sup>74</sup> As we have noted, there is a very small caveat to this, in that curtailments can reduce the TSO’s transmission revenue (if like MDL the TSO operates a common carriage regime). This however is not material, at least relative to the commercial incentive pipeline users face as a function of imbalance charges.

required to balance SQ and MQ by the end of each day. An outsider might therefore expect nominated gas use to be very close (closer than it is) to actual gas use, day in, day out. However there is a disconnect created by the lack of a daily delivery incentive to bring everything into alignment.

- 124 In considering the proposed introduction of a daily imbalance settlement mechanism, we reviewed overseas experience and our own operational realities (see Chapter 2.4.2). Out of that review came a conclusion that a number of net benefits would be expected to materialise as a result of a daily cash-out regime being introduced. Most obviously, the price of inter-day LP Flex is signaled (the benefits of this have been covered above). A daily balancing period would also give MDL the confidence that it requires in order to use the spot market for balancing transactions, “creating the preconditions for the use of market-based and cost-reflective imbalance charges.”<sup>75</sup> And, ultimately, as Keyaerts notes, “a shorter balancing period leads to a better link between the actual balancing costs and those instigating that cost.”<sup>76</sup> The result will be a more efficient regime.

### 3.7 The benefits of market-based balancing regimes

- 125 There are several features of the Amendments which distinguish them from other daily imbalance settlement mechanisms. In each case these features are premised on the intention of maximising efficiency. These features reflect a preference for a pure market-based balancing model, a preference shared by European policymakers and reflected in the EBNC.

- 126 The two primary advantages of the proposed model – relative to other possibilities – are its use of cash-outs as the main imbalance settlement mechanism and the linking of cash-out prices to traded spot market prices.

#### 3.7.1 Cash-outs versus other mechanisms

- 127 Cash-out charges can be distinguished from other charges – pure financial payments – which do not have an impact on the user’s position. For example, some systems impose penalties on users when their imbalance exceeds the permitted tolerance level (without returning the user’s position to zero, i.e., by the giving and taking of title to gas). Others impose different charges which may be payable independent of the user’s actual imbalance level. Of these, as KEMA notes:

*...only cash-out charges may be reflective of the actual costs, which a network user imposes on the system at a given point in time. In contrast, both penalties and other charges resemble some sort of tariff system, which may be used to allocate certain costs across network users, although it appears that most of the penalties applied in practice are not directly based on any associated costs but are mainly with the intention of providing incentives for the avoidance of imbalances.”<sup>77</sup>*

- 128 These charges cannot, by definition, be cost-reflective because they are always set in advance or indexed to an external reference price. This lack of cost-reflectivity is inefficient and comes at a cost to the end user.<sup>78</sup> Therefore, as KEMA concludes, “wherever possible, imbalance settlement should be primarily based on cash-out charges.”<sup>79</sup>

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<sup>75</sup> KEMA, footnote 47, p.147

<sup>76</sup> “Gas Balancing and Line Pack Flexibility: Concepts and Methodologies for Organising and Regulating Gas Balancing in Liberalised and Integrated EU Gas Markets,” Nico Keyaerts, doctoral thesis, Katholieke Universiteit Leuven, September 2012, p.73

<sup>77</sup> KEMA, footnote 47, p.42

<sup>78</sup> There is a counter-argument to this, being that efficiency should be assessed with regard to the outcome for real behaviour, not just prices. Applying this argument, one might conclude that an administrative charge and a market-based cash-out charge are



### 3.7.2 Market-based pricing

129 If one adopts a cash-out model, there is a further choice as to how cash-out charges are priced. There can be:

- administered charges, which are based on a fixed fee set in advance by the TSO or regulator;
- indexed prices, which are derived by indexation to an external reference price; and
- market-based prices, where the price of imbalances is based on the short-term costs or prices of balancing gas, which in turn have been determined through a market-based mechanism.<sup>80</sup>

130 MDL has opted for market-based pricing, which has a number of advantages over the others. It preserves an incentive on users to take *ex ante* balancing actions, even as demand and supply conditions alter. In contrast, if some sort of administered or indexed price was used, that price could quickly get out of line with the market value of gas on the day, undermining primary balancing incentives.

131 For similar reasons, the mechanism can also be regarded as fair – the cash-out price will closely reflect market conditions at the time. It also creates opportunities for those with access to flexibility to profit from that advantage (and a corresponding investment signal in flexibility tools, as we have already noted). For example, when the spot price is high, producers that have spare capacity will be encouraged to sell and end users that have dual fuel capabilities will have an incentive to switch. When the price is low, a storage facility operator may step in to assist the market.

132 Another advantage of using the spot price is that it will increase the number of spot transactions. While this may increase transaction costs<sup>81</sup>, it would also increase the liquidity of the spot market, with wider benefits to the industry, including:

- More efficient price discovery, i.e., the spot price would more quickly reflect changing demand and supply pressures.
- Narrower spreads and less volatility (other than that reflecting changes in demand and supply pressures).
- The ability to trade unders and overs, and related to this, an improved source of direct flexibility. In our view the combination of a more liquid spot market and a more efficient flexibility market should lower contracting costs.
- Lower risk for investors in gas fields.

133 The narrower spread is particularly pertinent given that, by virtue of the cash-out pricing methodology, the spread represents the cost to users over a given period of being out of balance. The more liquid the market gets, the lower that cost will be.

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equally efficient if they have exactly the same incentive effect on users. We will leave resolution of this debate to the economists, although certainly KEMA's logic is compelling to us.

<sup>79</sup> KEMA, footnote 47, p.151

<sup>80</sup> KEMA, footnote 47, p.45. KEMA further notes (also p.45) that "In the case of market-based pricing, cash out charges may be determined either by the most expensive option used (marginal pricing), or the average costs of buying or selling balancing gas." The model proposed in the mbb CR is in fact a hybrid of the two.

<sup>81</sup> When assessing whether transaction costs would increase as a whole, it is necessary to have regard not only to any increase in spot market transaction costs, but also to any corresponding reduction in GSA negotiation costs that may be expected. We are not well placed to comment on this, but expect that there would be a number of factors at play in this calculation.





134 In summary, the proposed cash-out mechanism is both fair and cost-reflective, and it will promote a number of efficiency improvements with the benefits highlighted above.

### 3.8 Tailoring a market-based balancing regime to our market

135 The appropriateness of drawing inspiration from European experience has been called into question, as has MDL's reliance on certain features of the EBNC but not others.<sup>82</sup> In this Chapter 3.8 we will set out the reasons for choosing some features and not others. These reasons relate to constraints within our market, rather than to any MDL commercial concerns. We will also introduce a forward-looking perspective, referencing the demand outlook and drawing conclusions about what this means for the Maui Pipeline and the tools required to manage it efficiently.

#### 3.8.1 Constraints

136 The most obvious constraint is the need for compatibility between MPOC and the VTC. This theme is reflected in the codes themselves and in Vector's Interconnection Agreement with MDL which allows Vector to require MDL to navigate a prescribed process before implementing MPOC changes – if those changes would “materially adversely affect” the compatibility of the two open access regimes.<sup>83</sup> Vector has triggered this process in the past, resulting in substantial delay (and further cost being incurred) in the implementation of a Change Request. We sought to avoid this outcome by designing the mbb CR in such a manner as to be compatible with the VTC.<sup>84</sup>

137 This approach ruled out the possibility of including other changes which we would have otherwise considered. For example, to introduce a monthly wash-up of balancing-related funds – or to revise the peaking regime. As we have said recently, we are willing to pursue change in these areas after the Amendments are implemented, if Vector is willing to take a coordinated approach.

138 In a similar vein, a constraint also existed in the fact that the EBNC is premised on an entry-exit nomination model (under which balancing charges are levied directly on shippers), in contrast to the point-to-point OBA regime which operates on the Maui Pipeline. This ruled out, for example, adopting the trade notifications and balancing portfolio provisions.

139 There are also technical constraints created by the current scheduling system, OATIS, which are well known. The EBNC provides for hourly (re-)nominations within the gas day, whereas Maui Pipeline users currently have only four intra-day nominations cycles available to them. IT system overhaul is on the agenda and we expect to take steps in 2015 towards replacement of OATIS with a new system. It is premature to comment on the expected features of that system, but it is a safe assumption that the number of intra-day nominations cycles will increase. In the meantime, we will soon be consulting with stakeholders on whether the gas day and current cycle times can be re-aligned.

#### 3.8.2 Supply and demand outlook

140 As part of our contextual analysis we also had regard to expected future gas demand, as this will dictate the level of operating strain to be expected on the system. In the medium term, whether total demand increases or decreases – largely driven by Methanex's plans – is relevant, but only

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<sup>82</sup> Vector Transmission used the term “cherry picking” at the MDL-led workshop on 27 August 2014

<sup>83</sup> There is a second ground: if the changes would have a material adverse effect on Vector's transmission pipeline business.

<sup>84</sup> That is, the VTC as it would be, once the b2b CR and the corresponding VTC changes put forward in the 27 November 2012 VTC Change Request appeal are implemented. As Vector noted in its 18 September 2013 letter to MDL, removing its Notice of Relevant Change Request in relation to the b2b CR: “To ensure the two codes remain compatible the proposed changes to the VTC are to take effect on the same date as the MPOC changes.”



partially so. What is of more concern is the expected “peakiness” (or intra-day volatility) of demand. LP Flex comes under greater strain – matching of supply to demand becomes more difficult – as demand becomes more volatile. We would expect to use more Fuel Gas as demand becomes more volatile too. The fact that peakiness is expected to increase give us cause for concern over our ability to manage the Maui Pipeline efficiently with the current arrangements.

141 The changing dynamics of the electricity generation market that are particularly relevant. While thermal generation is projected to decrease, the peakiness of that generation is expected to increase as gas plays a more residual role:

- *...gas use for power generation is easing as thermal power stations play more of a peaking, rather than traditional base load role... [GIC Briefing to the Incoming Minister, October 2014, p.9]*
- *...the within-day and within-year shape of demand growth is unlikely to be uniform, but rather is likely to show more growth at times of higher peak demand.<sup>85</sup> [Long term gas supply and demand scenarios, Concept Consulting, p.68]*
- *...while a significant proportion of demand growth can be met by new baseload generation, some must be met by plant operating at lower capacity factors – so-called ‘mid-merit’ and ‘peaking’ generation. This is significant for consideration of the demand for thermal generation because...thermal plant are generally much more cost-effective at such modes of operation than renewable plant, and thus growth in mid-merit and peaking demand is likely to be predominantly met by growth in thermal generation. [Concept, above, p.69]*
- *There is an increasing need for within-day flexibility because of the growth in wind generation. [Concept, above, p.75]*
- *...pipeline systems with power generation demand are going to exhibit far greater future demand uncertainty than those without power generation.<sup>86</sup> [Concept, above, p.95]*

142 Contact and Mighty River Power have signaled the reducing importance of thermal generation in their asset portfolios. Despite this, the thermal generators will continue to operating as a hydro firming facility. Otahuhu B will be converted from combined to open cycle we understand, in 2017.<sup>87</sup> Mighty River Power plans to reduce Southdown capacity and operate it in fast-start mode, noting that “this will improve responsiveness to market opportunities...”<sup>88</sup>

143 As foreshadowed, we are open to reviewing the peaking regime – otherwise known as ‘within day obligations’ – in future. However there is unlikely to be demand for LP Flex services until a daily delivery incentive is in place.

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<sup>85</sup> Concept was referring here to electricity demand growth. Gas is expected to play a reduced ‘peaking’ role in electricity generation, but only at the margin. The quote in the following bullet point illustrates the expected net effect.

<sup>86</sup> The implication here is that the north pipeline system (comprising the Maui Pipeline north of Mokau and the Vector North system), which has four thermal power stations along it, is likely to have significantly more volatile demand than the Vector South transmission system. If the current compressor policy is retained, increased demand volatility will increase compressor use (and therefore fuel gas costs).

<sup>87</sup> Concept expands on this conversion in the wider context (p.75): “Flexibility will also be an important factor in determining plant utilisation. There is an increasing need for within-day flexibility because of the growth in wind generation. New Zealand’s hydro plants provide a large proportion of the required within-day flexibility, however there is still a significant requirement for thermal plant to increase and decrease its output to meet changing demand (and wind) situations. In this respect, CCGTs are not well suited to such a mode of operation: they have relatively high minimum operating levels (approximately 57% of full capacity), and they incur significant costs associated with starting-up. As a result, in order to be generating during periods when prices are profitable, they have to also be generating in periods ‘in-between’ that are loss making. In contrast, the Huntly units are able to drop to lower minimum generation levels, and are understood to have lower start-up costs. The most flexible plant of all are gas-fired OCGTs which incur much lower costs associated with ramping output up and down.”

<sup>88</sup> Energy News article, “Mighty River plans Southdown conversion, Whakamaru upgrade,” 6 November 2014



## 4 Covec's draft report

144 In this Chapter 4 we comment on Covec's draft report, first with some general remarks and subsequently with specific ones. We then respond to the lists of cost and benefits identified by Covec in relation to the factual and the counterfactual. Page numbers in this Chapter 4 refer to page numbers of the draft report.

### 4.1 General

145 Overall, Covec's draft report summarised well the issues at play and offers some sharp insights. As we have already said, Mr. Small should be commended for the level of accuracy he was able to achieve in a limited timeframe. Nonetheless, the draft report is quite high level and impressionistic; and John seems to have acknowledged as much.<sup>89</sup>

146 There appear to be some areas of the report in which precision could be improved. There were also a number of statements and inferences – apparently characterised as “relevant background” (p.1) – which we think are not relevant to a cost-benefit analysis. By way of example:

- *...we noted a degree of discomfort with the processes for changing MPOC [p.2]*
- *It seems more consistent with collaborative, industry-led development to include both [counterfactuals] at this stage. [p.4]*
- *[MDL's heavy drawing on the EBNC] carries a risk that local participants may consider these more complex markets less relevant. [p.7]*
- *...it was considered that...balancing costs are much less significant than they have been in the past; in the absence of a clear problem definition, speculation is occurring as to the underlying motivation for change; Shippers are concerned that they are being asked to manage their daily balances without having the information and/or tools to do that effectively. [p.12]*

147 We hope that in developing its report Covec (and GIC, in turn) will assess the complete proposal against the longer-term interests of gas consumers. We think the complete proposal will deliver net benefits not only to end users but also throughout the supply chain, both in the short and long terms. Looking back at the history and putting the mbb CR in context, pipeline users have been and continue to be reluctant to pay market value for the balancing service. This is quite rational for each user but it results in an inefficient outcome for the market. We hope Covec will assess those users' views accordingly, and conduct an analysis of the costs and benefits of mbb CR implementation across the industry more generally.

### 4.2 Specific

148 Before commenting on Covec's analysis it is appropriate first to address the counterfactual. MDL's position on this has been articulated in paragraph 14 above. Because the B2B framework is not a valid counterfactual we have not specifically commented on Covec's analysis of it.

149 Our comments on the draft report are split into two:

- comments that are more in the nature of clarification are set out in *Appendix 2* (these mostly concern Covec's statements about operations and MPOC mechanics)
- substantive comments about Covec's economic analysis are set out in this Chapter 4.2

#### 4.2.1 LP Flex

150 We have already focused in Chapter 3 on the inefficient pricing of LP Flex and the efficiency gains that the Amendments would create in this context. Covec picks up on this (p.6, p.9), but does not

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<sup>89</sup> We refer to Mr. Small's presentation at the 5 November workshop held at GIC



explicitly recognise that the costs incurred in providing LP Flex are hidden. This may have been Covec’s intention when it noted (p.5) that “...any other costs are socialised through the pipeline access tariff”, but it is not clear.

151 Likewise, Covec (p.9) recognises that this creates a perception of a “largely free pipeline service”. Of course, it is not really free – it is that the costs are misallocated. As a result:

- The decision-making of Shippers in respect of flexibility is distorted. In particular, they will use an inefficiently large amount of LP Flex, and a corresponding inefficiently low amount of other flexibility tools, even if these are more appropriate (allocative inefficiency).
- Shippers who tend to use relatively little LP Flex subsidise those who use more (also allocative inefficiency).
- There will be under-investment in alternative flexibility tools, e.g., gas storage (dynamic inefficiency).

152 The Amendments would improve on each of these outcomes. In other words, benefits of the proposal – compared to the status quo counterfactual – would include:

- An improved price signal to users of the cost of LP Flex, resulting in improved allocative efficiency, and more broadly increased competition between flexibility mechanisms.
- A reduction in the cross-subsidisation, resulting in more efficient use of LP Flex and improved allocative efficiency.
- An improved price signal to investors in flexibility, resulting in improved dynamic efficiency. Indeed, we would expect an improved price signal for LP Flex to increase demand for other flexibility options, and this may lead to innovative flexibility solutions.

153 The draft report picks up some of these benefits (p.9); however, the report also treats “often unpriced” LP Flex as a benefit to “participants”, by which we assume Covec is referring to Shippers generally (see the text under the heading “User benefits from pipeline flexibility”, also on p.9). The implication appears to be that improving the price signal on pipeline flexibility would result in a cost, as the Shippers who benefit from the current arrangements would be worse off. But this analysis fails to take account of the equal and opposite cost imposed on the Shippers who are currently paying extra transmission charges. In fact, for the reasons already discussed – elimination of a cross-subsidy should be treated as a benefit, if the objective is to maximise efficiency, because more cost-reflective pricing will promote more efficient behaviour.

#### 4.2.2 Risk allocation

154 Related to this point, the draft report states that an issue raised by stakeholders is the “potential impact on end-user pricing if shippers effectively bear more risk under DCO” (p.2). Furthermore, the draft report states (p.8):

*Final (end-user) contracts may well change. Since shippers will be bearing 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.*

155 It is important to note that the Amendments would not increase risk, but rather would reallocate risk to parties that are better able to manage it – costs that are currently socialised (or that fall on third parties like MDL) would instead be directed to the users of the flexibility. As noted in Chapters 2.2.2 and 3.5, these users are better able to manage the risk than MDL because:

- They have better information on their supply and demand profiles (both historic and expected).
- They have other flexibility options, as already described, and can therefore utilise the cheapest or most effective option.
- They have a stronger incentive to maintain balance because, if they do not, there is (or may be) a financial impact on their business – whereas MDL is revenue neutral.

156 Therefore, from a holistic perspective, the costs of managing the risks in the supply chain should actually reduce. This would result in a benefit to end users. The incidence of that benefit may not be even – those with flatter or more predictable loads would benefit more than those with more variable loads – but, once again, this is a desirable outcome in terms of increasing market efficiency.

#### *4.2.3 Free riding and externalities*

157 We also think Covec’s commentary in section 2.1.3 of the draft report could be improved upon. In particular, we think there is merit in focusing on the free rider problems identified by Covec, which we think could be examined in more detail.

158 Covec characterises LP Flex (we assume) as a “common pool resource”, by analogy to other resources such as fisheries, irrigation water and clean air. We agree and we think that the problems invariably encountered with the use of common resources should be articulated.

159 All users are affected by the balance or imbalance in a pipeline. If one user takes action that brings the pipeline closer into balance, all users benefit.<sup>90</sup> This gives rise to a free rider problem: each user benefits from a balanced pipeline, but individual users do not have an incentive to rebalance the pipeline by themselves. As a consequence, without an appropriate contractual framework, the pipeline would not be adequately balanced.

160 Covec notes that “The absence of a price for pipeline storage is likely to lead to excessive usage of this service, which amounts to an allocative inefficiency (i.e. storage is used more than it would be if priced)” – but does not draw the link to the free rider problem; nor does it draw the link between that “excessive usage” and negative externalities. “Upstream costs from high pressure” are recognised (also p.9) as a negative externality (though Fuel Gas costs and demand-driven curtailment costs are not), but this is not tied back explicitly to the free rider problem.

161 This is very closely related to the earlier discussion about LP Flex being “over-used” if the contractual framework does not impose the correct incentives on users to maintain balance.

#### *4.2.4 Spot market price-related benefits*

162 A key feature of the mbb CR is that it would introduce spot market price-related benefits – something the draft report does not recognise. Cash-outs would reflect the spot value of gas on the day (plus or minus a small adjustment).

163 There may be other long term benefits to New Zealand to having a liquid spot market – such as, for example, wealth creation associated with the development of financial trading in gas derivative products, as has occurred overseas – but we acknowledge this is speculative. In any case, we expect emsTradepoint will have light to shed on expected benefits from increased market liquidity.

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<sup>90</sup> Refer van Dinther and Mulder, footnote 67



#### 4.2.5 Relevance of overseas experience

- 164 Covec notes (p.7) that in developing the mbb CR – and in the mbb CR application document itself – we had substantial regard for the EBNC and the stakeholder consultation literature underlying it. Covec also notes that this “carries a risk that local participants may consider these more complex markets less relevant.”
- 165 We agree that pipeline access arrangements (including balancing mechanism design) should reflect the physical and operational characteristics of the network in question. However we submit that gas transmission networks tend to have more in common than they differ.
- 166 Some are mesh-like grids; others are more or less a long, straight piece of pipe. Some have direct injection points; others rely on imports from other networks. Some are serviced by multiple storage facilities; others rely more on LP Flex and demand-side modulation. Some have very little LP Flex; others have a lot. Some have many compressors; others have only a few or none at all. These considerations and others feed into how access arrangements are designed – the most obvious policy decisions being whether to run a ‘point to point’ nomination system or an ‘entry-exit’ one; or whether to allocate pipeline capacity based on common or contract carriage.
- 167 Like any multilateral code negotiated upon the transition from a single state-buyer model to a competitive Open Access regime, the MPOC represented a compromise between the competing perspectives and interests of those at the table. Significantly, it was envisaged – and agreed – by all Parties that the code would keep step with internationally recognised prudent gas transmission practices. That is, not only would pipeline users have regard to international good practice, but they would conduct themselves in a manner “equal to or better than” such practice. It would be an overarching obligation on all members of the community. Hence section 2.3:

*Notwithstanding any other provision in this Operating Code, any TSA or ICA, MDL and each Shipper and Welded Party shall at all times during the term of its TSA or ICA respectively, act as a Reasonable and Prudent Operator in all of its operations under such agreements.*

- 168 “Reasonable and Prudent Operator” is defined in section 1.1 as follows:

*...in relation to the performance of obligations under this Operating Code:*

- (a) for MDL and each TP Welded Party, an operator of a high pressure gas transmission system whose standard of performance is equal to or better than good gas transmission operating practice as determined by reference to proper and prudent practices recognised internationally as applying to the operation of such systems;*
- (b) for a Welded Party (excluding any TP Welded Party and Notional Point Welded Party), an operator of gas facilities (which include production and treatment and gas consuming facilities, as the case may be) whose standard of performance in relation to those facilities is equal to or better than good gas facility operating practice as determined by reference to proper and prudent practice recognised internationally as applying to the operation of such facilities; and*
- (c) for a Shipper, a shipper of gas whose standard of performance is equal to or better than good gas shipping practice as determined by reference to proper and prudent practice recognised internationally as applying to the shippers of gas.<sup>91</sup>*

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<sup>91</sup> The mbb CR would add a fourth sub-paragraph: (d) for an operator of a Trading Platform, including a Notional Point Welded Party, an operator and manager of a Trading Platform whose standard of performance is equal to or better than international practice for the operation and management of wholesale gas markets on gas transmission systems as determined by reference to proper and prudent practices recognised internationally as applying to such markets.





- 169 In our view there is no reason why European experience should not be applied – tailored as appropriate (see Chapter 3.8 above) – in New Zealand.
- 170 The EBNC applies to all European member states and, therefore, to all European national gas markets: big and small, mature and adolescent. UK and Germany are ahead of the pack – but there are a number of other countries with similar network characteristics to ours, which are well on the path to implementing the code. The “less relevant [to New Zealand]” assertion does not, in our view, reflect the reality; indeed New Zealand has looked to Europe for some years now.<sup>92</sup>
- 171 The EBNC is the product of years of stakeholder consultation – as intensive as it was extensive – at tremendous expense.<sup>93</sup> Experts from every corner – technical, legal and commercial, as well as Government policy advisers – participated in the process. This suggests that proposals by members of our industry to effectively “reinvent the wheel” seriously underestimate the time and resources involved.<sup>94</sup>
- 172 Liberalisation measures in comparable markets have been mandated by regulation, such that stakeholders were left to debate the detail rather than the merits of change. We are optimistic that the efficiency gains inherent in the mbb CR can be realised through the Change Request process. Nonetheless, we are concerned about the emerging “collaborative” theme and what the consequences might be if efficiency-improving initiatives are blocked because the proposer did not obtain agreement from those with divergent commercial interests.
- 173 Returning to the draft report – Covec notes (p.7) 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.’*
- 174 The Information Gap has taken centre stage in the analysis.<sup>95</sup> In Chapter 2.2.2 above we set out information which we think is relevant to that assessment, and endeavoured to quantify the maximum cost of that gap. In Chapter 4.2.6 below we go beyond metering concerns and focus more on the allocation arrangements.

#### 4.2.6 Information constraints

- 175 As operator of the Maui Pipeline, the downstream reconciliation arrangements can seem distant from our ‘world’. We are nonetheless aware that there are shortcomings in those arrangements,

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<sup>92</sup> GIC, in its April 2008 Transmission Pipeline Balancing Issues paper, seems to agree the appropriateness of referring to European experience (p.16): “Since gas balancing is a generic issue, and since Europe like New Zealand faces the dilemma of facilitating interoperability of different pipeline regimes, [the ERGEG] guidelines seem a very appropriate reference point for the New Zealand industry.” ERGEG was ACER’s predecessor, ACER being the Agency for Cooperation of (European) Energy Regulators, which promulgated the Framework Guidelines underpinning the EBNC and other ENTSOG-developed network codes. Those Framework Guidelines are a continuation of the earlier ERGEG policy work, to which GIC and industry referred extensively during the 2008-09 balancing work streams and to which MDL referred in the development of the original b2b CR and the b2b CR.

<sup>93</sup> Documentation of the various consultation processes can be found on ENTSOG’s and ACER’s websites

<sup>94</sup> Greymouth’s submission on the draft mbb CR proposal – lodged in the course of the consultation round described in *Appendix 1* – gives the clearest articulation of this sentiment, but Greymouth is by no means the only Party that seems to hold these views. Greymouth notes (in footnote 7 of that submission): “Let’s have regard for international examples, sure, but we’re a nation of innovators and leaders.” Greymouth and the rest of the downstream submitters seemed also to believe that all problems can be solved through adopting and pursuing a collaborative vision. Our view in response is set out in Chapter 2.2.4.

<sup>95</sup> Not much need be said about the introduction of short-term products – the Amendments contemplate the use of these products under a market-based balancing model, but it is the market operator(s) that needs to develop them (no doubt, based on stakeholder feedback). MDL will liaise with emsTradePoint and any other market operator; in the short term, at least, we expect only to require a Standard Product to meet our balancing needs.





partially (or largely) a function of the fact that there is a GJ wash-up rather than just a financial one. This has impacts on the certainty with which shippers can ascertain their position – particularly given that the effects can be cumulative. We are grateful to Vector Wholesale for having taken the time recently to explain the regime in some detail.

- 176 What has not been provided, however, is the information necessary to build up a granular picture of which shippers get allocated what quantities; what those quantities represent as a proportion of their portfolios; how much variance there is, on average, in those quantities (between the initial and final allocation); and so on. We encourage the industry to provide this information, to allow the general inferences we drew in Chapter 2.2.2 to be refined.
- 177 GIC, in the meantime, is working on developing an improved (D+1) regime, which we understand could be piloted as early as Q1 2015, with industry cooperation. Covec is right to note (p.8) that “even ‘D+1’ knowledge will only increase the statistical reliability of nominations; errors are likely to remain” – but we do not see how in any system like ours some degree of error would not be expected. Certainly better information would be helpful to users – but the investment costs in the facilities required to provide that information would need to be justified on a cost-benefit analysis.
- 178 There is an added dimension created by the fact that shippers assert the need more information, in order to be able to balance their positions effectively, but on the other hand are reluctant to disclose running mismatch information. This information could, if disclosed, be used to facilitate mismatch trading, i.e. as a ‘proxy’ flexibility tool to mitigate imbalance risk. There is already a facility to trade Operational Imbalances on the Maui Pipeline,<sup>96</sup> although we recognise that given the aggregation dynamic at TP Welded Points, this may be of limited use to shippers. In contrast, given each shipper is allocated (imbalance) quantities on the Vector system, we expect there would be substantial benefit if a mismatch trading facility were introduced under the VTC. We understand the justification for withholding mismatch information is that it is “commercially sensitive” – although we are not quite sure why. A better understanding of why this is the case is required. Whatever the constraint, we suggest this is one area shippers could pursue in order to (be able to) better mitigate imbalance risk.
- 179 We support industry focus on improving primary balancing tools. As already noted, we will soon be initiating a consultation process on the changing of the gas day and OATIS nomination cycle times. When OATIS is replaced in the coming years, users will almost certainly have access to more frequent nominations cycles too.

### 4.3 Costs and benefits identified by Covec

- 180 In this Chapter 4.3 we comment on section 3 of the draft report (“Costs and Benefits”). As Mr. Small acknowledged at the recent workshop, the draft report does not properly compare the costs and benefits of the factual against a counterfactual. Rather, the draft report more loosely identifies costs and benefits of each scenario, without a comparison of each scenario. In the following two tables, we set out our interpretation of the costs and benefits identified by the draft report, but in a more rigorous framework, i.e., comparing the factual of the mbb CR against the counterfactual of the status quo. We then briefly comment on each of the costs and benefits. In the third table we

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<sup>96</sup> Welded Parties can trade Operational Imbalances on the Maui Pipeline (section 12.15), although this facility is rarely used (other than by Welded Points located at Small Stations).



set out further costs and benefits (i.e. not identified in the Covec report) which we would expect the Amendments to generate.

**Table 1: draft report identified costs**

<b>Cost identified by Covec</b>	<b>MDL comment</b>
Users lose benefit of unpriced LP Flex	Disagree – as noted, targeted and more transparent pricing of LP Flex should be considered a benefit.
A lack of information relevant to balancing means that the proposal “might therefore be an inefficient allocation of risk” (p.11)	Disagree – not certain what the Information Gap is (we suspect it is smaller than made out); regardless, users are better placed to balance the system given they have more information than MDL, greater access to flexibility tools and a stronger commercial incentive to maintain balance than MDL. See Chapters 4.2.2 and 4.2.6.
Systems upgrade costs for shippers	Perhaps, but not necessarily. Provided primary balancing performance gets no worse, then the total cost to end users cannot increase. Cash-outs are washed up and, in this regard, there is only a time value of money and a cross-subsidisation issue. In any case, projected cash-outs show that – at low percentage adjustments – charges would be comparable to historic levels, even with no improvement in behaviour. It is difficult therefore to see a standalone business case for systems upgrade based on the mbb CR’s introduction alone (there may be other business drivers). Shippers should provide further information to corroborate this claim.
Ongoing internal costs for shippers	As above.

**Table 2: draft report identified benefits**

<b>Benefit identified by Covec</b>	<b>MDL comment</b>
Pricing flexibility will lead to increased allocative efficiency, flexibility competition (productive efficiency) and improved flexibility investment incentives (dynamic efficiency)	Agree
More efficient balancing prices	Agree
Improved balancing would reduce costs incurred by producers on account of high pressure	Agree



**Table 3: further costs and benefits**

<b>Brief description</b>	<b>Cost or benefit?</b>
More efficient allocation of imbalance risk (from the TSO to users)	Benefit – expected cost reduction due to better primary balancing
More efficient level of balancing and a consequent reduction in externalities, e.g., impacts on other shippers and compressor costs	Benefit – social costs such as compressor costs, demand-driven curtailment costs and Upstream Losses would reduce
Increased spot market liquidity, with wider benefits to the industry, including: <ul data-bbox="276 667 922 981" style="list-style-type: none"><li>• more efficient price discovery (i.e., the spot price would more quickly reflect changing demand and supply pressures);</li><li>• narrower spreads resulting in lower cash-out charges, and less volatility (other than that reflecting changes in demand and supply pressures);</li><li>• the ability to trade unders and overs, and related to this, an improved source of direct flexibility; and</li><li>• lower risk for investors in gas fields.</li></ul>	Benefit



## 5 Initial thinking on approach to setting the percentage adjustment

- 181 The proposed cash-out pricing methodology includes a percentage adjustment which would be applied to the AMP, in order to calculate the Marginal Buy and Sell Prices.<sup>97</sup> The adjustment would be set by MDL (and posted on the BGIX in advance) – and it need not be symmetrical, i.e. there could be different adjustments applied to each side. It cannot exceed 10%, being the limit imposed in the EBNC.
- 182 The purpose of the adjustment is to incentivise primary balancing. In fact it now represents what might be called a pure incentive component. Prior to the industry consultation described in *Appendix 1*, trading fees were only provided for under the TSO trade limb of the Marginal Buy/Sell Price calculations; there was no corresponding provision under the AMP limb. It was therefore envisaged that part of the adjustment – which is applied only to the latter – would cover trading fees. One submitter quite rightly pointed out that it would be better – more transparent – if the trading fee component were separated out, as a distinct component. We agreed that this would create a clearer methodology and did so; the result being the Cash-Out Trading Fee Price. Just 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’. Whatever adjustment is applied to the AMP, therefore, represents pure incentive.
- 183 Given understandable interest in this aspect of the proposal, we have begun to give thought to how we would approach the task of setting the adjustment. This has included modeling the expected cash-out charges (necessarily, based on historic data) and surveying European practice. Acknowledging the uncertainty involved in transitioning to a new regime, we plan to be guided above all by expected charges. European practices will be factored in, too, and our thinking will develop in the months ahead – but would like to reassure industry that projected charges will be kept front of mind. This translates to ‘starting low’ in the first instance, and adjusting if necessary based on primary balancing performance. All the necessary caveats aside, we set out below our initial thoughts.

### 5.1 Projected cash-out charges at different percentage adjustments

- 184 For simplicity, we have used symmetrical adjustments in the modeling done to date. As will be seen in Chapter 5.2, however, it may be worthwhile exploring a ‘causer / helper’ dual approach. Also for simplicity, we have used 1 TJ and 2 TJ ROILs, when in reality tolerances would sometimes be slightly higher (on account of the SQ-related limb of the ROIL calculation).<sup>98</sup> This creates a small artificial inflation in the projected charges and will be taken as read in the following commentary. The data set is 1 January to 30 September 2014.
- 185 Figure 4 to Figure 7 show how cash-out charges would have been allocated to Downstream Users had the Amendments been in force over the past three years. Under the first of two soft landing periods, the ROIL Multiplier would be set at 2. This would give Welded Parties a 2 TJ ROIL for the first year.<sup>99</sup> At this level, the numbers come out as follows<sup>100</sup>:

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<sup>97</sup> See section 12.12

<sup>98</sup> The ROIL calculation has two variables: a minimum GJ figure (in this case, 2 TJ) and a percentage (in this case, 2%) of an average SQ figure (over the previous 30 days). The higher of the two figures becomes the Welded Party’s ROIL.



Year\Adjustment	2%	2.50%	3%	3.50%	4.00%
2012	\$-65,000	\$-106,000	\$-147,000	\$-187,000	\$-228,000
2013	\$104,000	\$80,000	\$56,000	\$32,000	\$8,000
2014	\$206,000	\$142,000	\$78,000	\$13,000	\$-51,000
<b>Average Change</b>	\$82,000	\$39,000	\$-4,000	\$-47,000	\$-90,000

Table 4: Projected TPWP cash-outs under mbb MPOC under various percentage adjustments

186 The figures in  
 187 Table 4 above indicate that, to preserve historic levels of TPWP cash-out charges (i.e. that are passed on to Downstream Users), it would be appropriate in the first instance to set the adjustment at 3%. At this level, given that – based on these projections and all other things being equal – there would be minimal impact on cost allocation between users, it is difficult to see how there would be a need for any investment in better data quality.

188 As there is a material variation between the 2012 and 2013-14 figures, it is difficult to determine the exact percentage adjustment that would generate the best approximation of current cost distribution. Nonetheless, we can expect, pending further analysis, to start in the range between 2.5% and 4%.

189 For simplicity, we also expect to start with an equal percentage adjustment ‘on both sides’ – and not to adopt a ‘helper/causer’ variant. These options would be assessed once some experience had been gained under the new regime.

**5.2 European TSOs’ initial approaches to setting the adjustment**

190 There appears to be little commonality in how the European TSOs are approaching adjustment setting. Hungary has adopted the maximum, 10%. Denmark on the other hand has set it at 0.5%, which will (slightly more than) cover the trading fee in its domestic spot market. Germany is still discussing whether an adjustment is necessary; and if so, how it should be set. The Dutch will impose a linepack flexibility service – rather than cash-outs – which will be charged at 0.4% of the weighted average market price of the last 72 hours. The Belgians are adopting a dual approach: 5% for ‘causers’ (those with an imbalance in the same direction as the network position) and 0% for ‘helpers’ (those with an imbalance in the opposite direction to the network position).

191 MDL will continue to monitor how European practice unfolds in parallel to our observation of the primary balancing performance generated by the adjustments adopted in the first instance.

**Closing remarks**

192 We have been grateful of the opportunity to canvas in this submission our views in relation to the mbb CR and why it should be supported by GIC. Essentially, we believe implementation of the Amendments would ensure that gas is delivered to end users in a more efficient manner. Barriers to competition would be removed, incentives for investment in gas transmission facilities – flexibility tools in particular – would be enhanced. There would be downward pressure on delivered gas prices, particularly once the market responds by adapting gas contracting strategies both up- and downstream of the Maui Pipeline. Imbalance-related risks to security of supply



would be managed more efficiently. Price signals, crucially, would become clearer, signaling the full costs of transporting gas through the Maui Pipeline. And the industry would have a liquid wholesale spot market available to them, with all the benefits that this is expected to bring.

193 We find it difficult to see how any assertion that the Amendments would increase net balancing costs to end users can be supported. Only an increase in Balancing Gas transactions (and/or revised SOPs) could have that effect – although we expect that, given the Amendments would improve primary balancing incentives, the opposite would occur. Costs to end users should decrease. Social costs created by the current operational issues should also decrease.

194 The reasons and evidence for these inferences has been put forward in this submission. We look forward to further engaging with GIC on this matter.

Yours sincerely,

Jamie Patton  
Commercial Manager  
for **Maui Development Limited**





## Appendix 1: mbb CR consultation process

The genesis of and drivers for the mbb CR have been well covered in the course of this submission (in particular, in Chapter 2.3.4), the mbb CR application document and in the course of industry engagement (in particular, the MDL-led workshop on 27 August 2014). This Appendix 1 therefore deals only with the process once industry consultation began – including the feedback given during that process and how we responded to it.

Timeframe	Event
13 August	Draft document package circulated to stakeholders, including: <ul style="list-style-type: none"> <li>• marked up draft MPOC</li> <li>• application document</li> <li>• copy of the EBNC</li> </ul> Submissions invited (on the understanding they would be published unless requested otherwise).
13 – 27 August	Individual meetings held with stakeholders
27 August	Workshop to discuss the draft proposal and MDL’s approach in developing it
19 September <sup>101</sup>	Submission deadline. 12 submissions were received: <ol style="list-style-type: none"> <li>1. Contact</li> <li>2. emsTradepoint</li> <li>3. Genesis</li> <li>4. Greymouth</li> <li>5. MGUG</li> <li>6. Methanex</li> <li>7. Mighty River Power</li> <li>8. Nova</li> <li>9. SENZL</li> <li>10. STOS</li> <li>11. Trustpower</li> <li>12. Vector</li> </ol>

In combination those submissions raised over a hundred points and questions, although there was significant overlap between them. They included:

- substantive points;
- procedural points; and
- secondary points on potentially related issues and consequences.

### Substantive points

In response to substantive points raised, several changes were made to the proposal prior to it being submitted to GIC. A note on those changes was provided together with our application, as was a full comparison of the submitted mbb MPOC against the consultation draft. An overview of substantive points and our responses is set out below.

<sup>101</sup> The original submission deadline was 5 September, but this was extended in response to a request from industry for more time.



- *MDL should clarify that it will use a standard product as default for Balancing Actions, unless circumstances require a non-standard product.*
  - Agreed. This is now specified in section 3.5(d)(i).
- *MPOC should set out the circumstances or principles under which a non-standard product would be used. Reference to “cost effective manner” is too uncertain, compared with requirement that gas be purchased/sold at lowest/highest available price.*
  - We disagree. As we clarified in our final application document, using the highest/lowest price across all available gas products is not always the correct criterion to use. Cost effectiveness is the correct criterion, even though the exact procedures to achieve it cannot always be tightly prescribed in advance.
- *Section 3 should include a statement that Balancing Platform use is intended as interim measure until a Trading Platform sufficiently meets requirements of a fully mature balancing market.*
  - We can understand this view, but we do not consider it necessary or prudent. A Trading Platform may never offer support for future locational/temporal products that MDL, or indeed other market participants, would find useful (although if this need materialises, we hope Trading Platforms will rise to meet it). In that case MDL may still need to maintain a Balancing Platform to have access to gas products that are not listed on a Trading Platform.
- *MPOC should reinforce the objective of using the Trading Platform ahead of other sources.*
  - Agreed. This is now specified in section 3.5(d)(ii).
- *An RPO requirement should relate to all of 3.5; not just 3.5(c).*
  - MDL is always required to act as Reasonable and Product Operator, so we do not expect such a change to be meaningful. Nevertheless, in the final version we made this change as requested.
- *3.5(d) seems wrong. Balancing Agent should use gas price closest to market price; not a prescribed order or contracts.*
  - We amended 3.5(d) to give explicit preference, subject to cost effectiveness, to use of Standard Products listed on an eligible Trading Platform. As we explained in our final application document, and noted again above, price is not the correct criterion to use.
- *Balancing Actions should not be limited to ID cycles; even faster response times may be required.*
  - We agree, but this did not require updates to our Change Request. If it meets the balancing objective cost effectively then MDL can enter into bilateral negotiated contracts that are not limited to ID cycle times.
- *Average Market Price should include market trading fees in order to allow adjustment to initially be set at zero.*
  - We agree that the adjustment can be lower if market trading fees are explicitly included in cash-out prices. Indeed this creates a more transparent pricing methodology. To accommodate this change we introduced the concept of “Cash-Out Trading Fee Price”, which now feeds into the cash-out buy and sell prices. Refer Chapter 5 above.
- *Adjustment percentage should not be at MDL’s discretion. The need and level for an adjustment should be determined by the GIC at the end of a 12-month transitional period.*
  - We disagree – as operator of the Maui Pipeline, MDL should have control of the tools necessary to maintain it within operational limits. This includes both physical balancing tools and – particularly given the operational realities MDL faces<sup>102</sup> – some control over primary balancing incentives (which are likely to in turn affect system balance).

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<sup>102</sup> Relative to TSOs in overseas markets, MDL has relatively few balancing tools at its disposal. Moreover, the only direct control it has over Maui Pipeline flows is through the Mokau compressor. Flows through the 17 entry (Receipt) and exit (Delivery) points on the Maui Pipeline are controlled by Welded Parties.



- We proposed a limited role for GIC, with respect to setting the maximum percentage for section 12.12(e). Indications were, however, that GIC could not – or at least, did not wish to – perform such a role. Accordingly we removed the reference to GIC approval from section 12.12(e).
  -
- *Recommendation to set adjustment for calculating the Marginal Buy/Sell Price to 5% at the start.*
  - We do not agree that start values for the adjustment should be codified.
- *Maximum adjustment percentage of 10% is too high*
  - We derived the 10% maximum from the EBNC. We do not have strong views on what the maximum should be, but 10% seems reasonable. The TSO of at least one European country (Hungary) has already taken 10% as the starting point post-implementation.
- *There should be minimum volume requirements for calculating weighted average prices, with default rule to apply if those requirements are not met.*
  - Agreed. We drafted section 12.12(f)(ii) in the final version to address this, though are yet to give further thought to (the detail of) how the default rule should be set.
- *Principles for otherwise determining the default rule should be set out in the MPOC.*
  - We tend to disagree. Setting a default rule is a complex topic, and may need to adapt to changing circumstances over time. Codifying principles now may not allow enough flexibility to respond to future developments and insights. We will consult with industry on this matter in due course.
- *Section 12.12(g) needs to add provision for a reasonable notice period to be given when a default rule is introduced or changed.*
  - Agreed. Changes were made to section 12.12(g) and section 4.4 to give effect to this suggestion.
- *Duration for soft landing should consider how much time is required by industry to efficiently comply with the new regime. ROIL multiplier should be set at 2 during a 12 month transitional period. Request soft landing with a ROIL Multiplier of at least 2 until a D+1 regime is implemented and at least 1.5 for a period of 6 months thereafter.*
  - Agreed, except for the contingency (implementation of a D+1 regime). We do not believe the MPOC should be dependent on potential future changes in the regime for other pipelines, even though we agree such changes would be desirable (in order to release further efficiency gains inherent in the Amendments). We amended section 12.12(d) to provide for a longer soft landing period (as per the submitter request).
- *Receipt Points should not be exposed to Peaking Charges if the trigger is a response to a Balancing Gas Call.*
  - We expect this is an attractive concept that should be considered further. We note, however, that Receipt Point definitions in the MPOC and in the VTC are different, so implementation is not as straightforward as it may seem. We expect that changes to the peaking regime and an overall refinement of within-day obligations may be considered in the near future. Any code changes will need to be coordinated with Vector to maintain compatibility.
- *Schedule 7 tolerances for Bertrand Road (Waitara Valley) and for Faull Road should be set equal to those for other Welded Points.*
  - Agreed. Schedule 7 was amended as requested.



## Procedural points

Many submissions did not address the substance of our Change Request, but focused instead on procedural points. There was a high degree of overlap between submitters on those points. Our views of the most relevant procedural points that were put forward, and our responses to them, are set out below.

- *MDL should have used a collaborative approach using an industry working group format to develop solutions for balancing, instead of presenting its own Change Request.*
  - Refer to our comments in Chapter 2.2.4 above.
- *MDL's Change Request cannot be properly assessed because there is no agreed on problem definition*
  - There is no need for a problem definition. The only appropriate test is whether a proposed set of changes would promote the Act and the GPS.
  - Problems relating to balancing have been discussed by GIC and in industry forums since the beginning of Maui Open Access. These problems should be well understood by now, even if the advent of spot markets has introduced a new dimension to the debate.
  - In an international context, the balancing-related problems that led to the development of the EBNC have been widely discussed for many years under the auspices of the European Network of Transmission System Operators for Gas (ENTSOG) and the Agency for the Cooperation of Energy Regulators (ACER). ACER was preceded by the European Regulators Group for Electricity and Gas (ERGEG). Interested parties can review documents [here](#) and [here](#).
- *The Change Request is based on various bits that have been picked from the European model, thus compromising the model as a whole.*
  - We have indeed selected parts of the EBNC that can be implemented in New Zealand within the ambit of various constraints identified in Chapter 3.8.1 above. We believe that to have been a sensible and valid approach. We do not agree that aspects from the EBNC can only be adopted on the basis of an all-or-nothing approach.
- *MDL's Change Request needs to address all issues instead of providing partial solutions.*
  - that the original b2b CR was rejected on the basis that it sought to address too many issues at the same time. Since then, we have adopted a narrower focus which, we note, is exactly what some parties have called for.
  - We acknowledged in this submission that further changes can be made and may be desirable. We plan to initiate work on them if and once the Amendments are implemented.
- *Industry was anticipating implementation of B2B regime. Industry is not ready for change.*
  - Industry has repeatedly said it is not ready for change. When the original b2b CR was proposed, industry protested that it was premature – and that they were not ready (the same theme recurring in reactions to the b2b CR submitted almost two years later). Several years on and those preparations appear still not to have been made. If industry was ready for b2b, it is ready for mbb: the mechanisms are, in substance, the same; the only difference lies in the trigger and in the proportion of imbalance for which the Welded Party is liable to have settled.
- *MDL should consider consequential VTC impacts.*
  - We have indeed considered those. The mbb CR is designed to avoid such impacts and therefore to avoid a need for corresponding VTC amendments to be made.



## Secondary points

In addition to procedural points, many submitters pointed to secondary issues in relation to the mbb CR and its potential consequences.

- *Shippers need more information to manage their position.*
  - MDL provides hourly information at all of its (relevant) Welded Points.
  - We acknowledge that Vector shippers do not enjoy the same quality of information on the Vector transmission system (and encourage GIC to take steps to improve the situation); although, as noted in Chapter 2.2.2, the scope of the Information Gap appears to be smaller than is generally made out.
- *Shippers need daily allocation.*
  - Allocations to Shippers on the Maui Pipeline equal their Approved Nominations and are known at the end of each day. Imbalances are allocated daily to Welded Parties, who can track them at (relevant) Welded Points on an hourly basis.
  - Vector shippers do not have the same allocation mechanism. We encourage GIC in its endeavour to improve the downstream allocation arrangements. We note that the need for this has been recognised since (at least, if not prior to) the ICD process, in 2009.
  - The soft landing period provides extra leeway while the downstream allocation regime is being overhauled. This should provide industry with a reasonable amount of time to put better arrangements in place.
- *Nomination cycle times should be revised.*
  - We tend to agree. From past experience, however, it appears that different industry participants have different views on optimal timing for nomination cycles. If industry participants can agree on revisions we would be willing to support them. We will soon be consulting with stakeholders on this matter.
- *The start of the Gas Day should be amended to better align with demand profiles.*
  - This also seems sensible, in particular because it would reduce the need for LP Flex to accommodate the mismatch between Receipt Point and Delivery Point profiles that occurs in the early morning. We expect, however, that such an amendment would need to be carefully considered and should probably be matched with a corresponding amendment in the VTC as well. This will form part of the aforementioned stakeholder consultation on nominations cycle change.
- *The market-based balancing change request does not guarantee allocation of costs to causers.*
  - Our change request directly allocates imbalance charges to “causers” of excess imbalances on the Maui Pipeline. Those charges are based on market prices on the relevant day. Indeed the proposal has been designed with particular regard for the objective of cost-reflectivity, on which European policy makers have put substantial emphasis in developing the EBNC and the Framework Guidelines behind it.
  - The allocation by Vector of those imbalance charges to its pipeline users is outside the scope of the MPOC and our control.
- *Daily cash-out charges under the market-based balancing regime are not related to balancing actions.*
  - This is quite deliberate.
  - The linking of balancing actions to cash-out charges was a fundamental flaw of the b2b model. That approach contradicted the principle that TSO actions should be for residual balancing only. It also eliminates the perverse incentive on pipeline users under the b2b regime – recognised by Covec in its draft report – to take corrective actions that would have negated MDL’s balancing actions.



- *Daily cash-out charges under the market-based balancing regime can be overly punitive.*
  - Cash-out charges under the mbb are based on wholesale market prices for the relevant day (in most cases, we expect that the adjusted AMP price – as opposed to the TSO-trade marginal price) would apply). Cash-out volumes are based on ROI minus a tolerance. We do not consider this punitive.
- *MDL should provide products to assist balancing such as a paid park-and-loan facility*
  - Section 2.8 of the MPOC currently prohibits MDL from providing such products. LP Flex needs to have an inter-day value if there is to be demand for services like these.
  - We would be interested in further MPOC changes that would make such products possible, but this has been left out of the scope of the mbb CR.
- *MDL needs to consider efficient procurement of balancing gas.*
  - We expect that the required preference for procurement of Balancing Gas on a Trading Platform, subject to cost effectiveness for the intended balancing objective, will allow for efficient procurement.
- *Problems are caused by restrictions on access to BGX.*
  - We do not consider this relevant for the mbb CR. Nor do we believe that a hypothetical lifting of those restrictions would eliminate the benefits of the mbb CR.

Having considered all of the points presented above, we finalised the mbb CR in collaboration with emsTradepoint. We also executed a standard ICA with Transpower New Zealand Limited to establish new Notional Welded Points, to support a wholesale gas market operated by emsTradepoint on the Maui Pipeline. That ICA comes into effect on the date that the mbb CR comes into effect.

The mbb CR and accompanying documents were submitted to GIC on 10 October 2014.





## Appendix 2: clarifications in response to Covec’s draft report

#	Covec draft report text	Reference	MDL comment
1	Welded parties are required to make daily nominations of injections and offtakes and these must balance.	p.1, para.3	Under the MPOC, it is Shippers that make nominations (and ensure that their injections and offtakes balance), not Welded Parties. The rules governing nominations are set out in sections 8 and 9 of the MPOC. Roughly speaking there is a four-step process: shippers nominate; OATIS aggregates those nominations and proposes a Scheduled Quantity at each Welded Point; the Welded Parties at those Welded Points confirm or reject those nominations (either <i>en masse</i> or by nomination); and MDL approves or does not approve them. This process repeats at different intervals, with week-ahead nominations submitted through the Provisional Cycle, day-ahead through the Changed Provisional Cycle and on-the-day through the Intra-Day Cycles. Shippers are also required to provide 12-month-ahead Rolling Forecasts at least 6 Business Days prior to the start of each month.
2	In extreme low pressure situations the operator can declare a “critical contingency” which allows it to order particular conduct from users.	p.1, footnote 1	This footnote follows the sentence, “When imbalances threaten prudent operational limits, the pipeline operator will generally buy or sell balancing gas.” The “pipeline operator” in that case is MDL, whereas if a “critical contingency” is declared by the Critical Contingency Operator ( <b>CCO</b> ), then it is the CCO that can “order particular conduct from users”. In the footnote, therefore, the words “Critical Contingency” should be inserted before the word “Operator”.
3	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 and it appears that <u>balancing gas transactions have declined since that time</u> . [Graph]	p.2, para.5, graph on p.3	It is misleading to include in any balancing data set figures prior to 20 May 2009 (i.e., prior to final deliveries of Maui Legacy Gas). In fact the picture is also skewed until 27 September 2012, being the day on which the \$0.70 Oaonui OBG facility expired.  The underlined words could create an inference that the ‘cost of balancing’ is reflected solely by balancing gas transactions. This would be misleading and excludes, for example, the cost of cash-outs.
4	Given the history, it seems appropriate to consider [the MPOC code-change proposal promulgated by MDL] against two alternative “counterfactual” scenarios: B2B balancing; and the status quo.	p.4, para.1	The only appropriate counterfactual is the MPOC currently in force. B2B would only be a relevant counterfactual if MDL had signalled its consent to the 13 October 2011 (and 14 February 2014) Change Request(s), which it has not. See paragraph 14 above.
5	It seems that shippers and welded parties face uncertain consequences from running an imbalance.	p.5, para.7	Balancing agent actions have no impact on cash-outs, which are entirely dependent on the ILON process. To the extent that the balancing agent buys gas, the costs may be recovered from the Incentives Pool (if



#	Covec draft report text	Reference	MDL comment
	<p>There is a risk of being cashed out but this may well not occur; the outcome depends on the actions of other parties <u>including the balancing agent</u>.</p>		<p>Incentives Pool Debits were incurred on that day – either on account of Excess Daily Imbalance or Peaking at a Welded Point).</p> <p>Under the ILON process, if an imbalance is not corrected it will be cashed out (except in rare circumstances). In this respect there is very little uncertainty about the consequences of running an imbalance (save to the extent that the actions of other users can have an impact).</p>
6	<p>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.</p>	p.8, para.6	<p>Refer Figure 13, Figure 14 and Figure 15 above.</p>
7	<p>...it may be that a DCO regime will provide strong enough incentives to upstream welded parties that over-pressure frequencies are reduced by throttling back production so that it better matches demand.</p>	p.8, para.6	<p>Shippers signal ‘demand’ to producers through nominations. Evidence shows that, during high pressure situations, it is Delivery Points rather than Receipt Points which are significantly more likely to have a positive imbalance causing the issue (see graphs in comment 6 above).</p> <p>Shippers (we understand) contract with producers for flat delivery. Flexibility can either be negotiated, sourced from the spot market or provided through other sources to the extent that they exist. Production stations can and should only flow to demand as it is signalled by nominations.</p>