SUBMISSION TO THE GAS INDUSTRY COMPANY

ON THE

TRANSMISSION PIPELINE BALANCING ISSUES PAPER

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1. EXECUTIVE SUMMARY

1. Vector shares the Gas Industry Company Limited's ("**GIC's**") concern that core elements of the existing balancing regime are flawed, and will not provide efficient pipeline balancing. In Vector's view, the key problem is the inadequate incentives on pipeline network users to efficiently balance their injections with their off-take.

2. Vector submits that the GIC should discount the status quo and non-regulatory alternatives at an early stage and focus on the development of regulatory solutions going forward. Vector notes that the GIC is required to consider only those alternatives that are reasonably practicable.

3. The introduction of regulations in the form of rules is the only practicable means to implement an efficient balancing regime that meets the regulatory objectives in the Gas Act 1992 ("**Act**") and the Government Policy Statement on Gas Governance dated April 2008 ("**GPS**"). In particular:

   (a) the status quo is not an option given the core problems with the current regime (the winding down of Maui Legacy Gas arrangements is unlikely to resolve these issues); and

   (b) intermediate options such as a pan industry agreement or code are not realistic solutions as:

      (i) it is most unlikely the relevant parties will reach the consensus required for a pan industry agreement (given the diverse interests and failure to agree to date); and

      (ii) even if consensus is reached, an agreement; cannot bind new entrants; carries potential Commerce Act 1986 risks; and is likely to be difficult to enforce.

4. Vector has drawn on its experience of the current arrangements to develop a detailed workable regulatory solution, which Vector submits is most likely to achieve the desired outcomes. Vector submits that this solution should be put forward as a preferred option for discussion in the next GIC paper on this issue.

5. Vector supports the use of ERGEG principles as an evaluation framework to the extent they are consistent with the Gas Act and GPS, but cautions against strict adherence to the principles as if they were statutory requirements. Rather the ERGEG principles should be used to provide guidance only when assessing regulatory options.

6. Vector considers some adjustment of the ERGEG principles for application in New Zealand is required to ensure the regulatory objectives are not undermined, to provide greater clarity and/or to better fit with New Zealand specific issues. In particular:

   (a) Greatest emphasis should be placed on Principle 1 to the extent it provides that responsibility for balancing should rest with the users.

(b) It should not be assumed that the residual role of the transmission service operator ("**TSO**") is to ensure the safe *and* efficient operation of the system (as is suggested in Principle 1) given New Zealand's specific structure (two vertically integrated TSOs). As GIC suggests, it may be more effective for a single Balancing Agent to undertake aspects of the residual role (possibly overseen by a body that is appropriately equipped to address the wider efficiency objectives such as the GIC).

(c) The choice of mechanisms for procuring Balancing Gas should reflect New Zealand specific factors such as the size and depth of the potential market (Principle 4a).

(d) Mechanisms to allow users to manage their positions should only be introduced where it is cost-effective to do so (Principle 4c).

7. Vector submits that all aspects of the existing design should be tested to ensure that the most effective and efficient model is identified. Vector is concerned that certain elements of the current regime appear to be treated as a "given" such as the incentives pool and the liquidated damages process. However, these aspects arose under different conditions, in particular:

(a) at the time the Maui Pipeline Operating Code ("**MPOC**") was developed there was believed to be ample flexibility available and self-balancing was not a priority. This was proved not to be the case;

(b) the Vector (NGC) TSO role reflects a compromise on the part of NGC following protracted negotiations and dispute and was not necessarily the best solution, even at the time. In New Zealand, transmission service providers such as NGC are relatively passive providers of capacity with limited control over injections and withdrawals (other than to the extent that obligations can be agreed in contracts with Shippers). It is ultimately the actions of Shippers and end-users that affect imbalances and, accordingly, where obligations and liabilities would most effectively fall.

Overview of Vector's proposed model

8. Vector believes that it has developed a model that addresses the issues identified to date, meets the Gas Act and GPS objectives and outcomes and the ERGEG principles (subject to the adjustments suggested). Critically, it is also efficient and workable in a market of New Zealand's size, allowing some protection for small users who are less able to manage their imbalance position.

9. The key elements of Vector's proposed model are as follows:

(a) The primary balancing responsibility falls on Shippers as this is where the most gains can be achieved;

(b) End users fall into two groups; Large Stations and Small Stations;

(c) The Maui and Vector transmission systems are divided into Zones each with a specified linepack range;

(d) An independent single Balancing Agent is contracted by GIC (as a service provider) and carries out the balancing role with a range of tools available for undertaking a balancing action within the physical parameters established by TSOs;

(e) The TSOs have a residual safety role;

(f) Costs associated with a balancing action are allocated by the Balancing Agent to Shippers who caused the imbalance, first to Shippers supplying Large Stations, and then, if there are any costs remaining, to the Shippers supplying Small Stations;

(g) In addition, daily penalties will be charged to Large Stations for both positive and negative imbalances outside a "Daily Limit". This will not apply to Small Stations given the different daily information available to this group.

2. STRUCTURE OF SUBMISSION

10. This submission is made in response to the GIC Transmission Pipeline Balancing Issues Paper ("**Issues Paper**"). It is made in light of Vector's experience since the MPOC came into force and:

(a) briefly outlines the key aspects of the relevant background to the current arrangements;

(b) comments on the evaluation framework proposed by GIC for assessing alternative balancing arrangements (Chapter 4 of the Issues Paper);

(c) reviews the issues identified by the GIC and its Transmission Pipeline Balancing Advisory Group ("**TPBAG**") (Chapter 6 of the Issues Paper);

(d) discusses design options for the new arrangements (Chapter 7 of the Issues Paper);

(e) discusses the case for regulatory intervention, including whether the GIC has a statutory basis in the current circumstances for recommending regulations or rules (Chapter 3 and (in part) Chapter 4 of the Issues Paper); and

(f) sets out the detail of the model proposed by Vector.

(g) Provides additional comments in Appendices including: clarifications and corrections; interpretation of the MPOC and VTC provisions; and an evaluation of the proposed Vector solution against the Gas Act, GPS and ERGEG Principles.

11. Where possible, the submission identifies the specific questions asked in the Issues Paper.

3. BACKGROUND TO CURRENT ARRANGEMENTS

The advent of Maui Open Access (and the consequent end to the Master Meter Agreement) in 2005 sparked the need for balancing arrangements to be put in place by the industry. These were set out in the MPOC and the consequences flowed through into Vector's standard Transmission Services Agreements ("**TSAs**") and more recently, in the Vector Transmission Code ("**VTC**"). While Vector introduced open access in 1997, the terms of its Shipper agreements were incorporated in the VTC introduced on 1 December 2007.

12. The conditions under which these arrangements were negotiated were considerably different from those that exist now. In particular, it was perceived that ample flexibility was available for the full range of operating conditions, so self-balancing performance by Shippers was not a high priority. As a result, the balancing arrangements that were put in place did not include strong incentives on Shippers. The Operational Balancing Agreement ("**OBA**") adopted by Maui Development Limited ("**MDL**") placed most of the incentives on Welded Parties rather than on the network users who have the most control over the creation (or otherwise) of imbalances.

13. However, even at the time, it was recognised that changes to the arrangements were likely to be needed in the future. This was because MPOC and VTC were the subject of difficult and protracted negotiations between all affected parties and necessarily involved compromises in order for agreement to be reached.

14. Gas balancing issues have increasingly emerged over the years since Maui Open Access, and it has become recognised by the industry that the existing arrangements are incomplete, and that a move to a more causer pays approach is warranted.

15. The challenge is to develop effective new arrangements that recognise and address factors that are specific to New Zealand, in particular the;

    (a) difficult background behind the existing negotiated solutions;

    (b) ongoing impact of Maui legacy issues;

    (c) current balancing structure which includes two TSOs;

    (d) relatively small size of the New Zealand market.

16. As part of its work to date in addressing pipeline access issues, and following the 2006/2007 overpressure incidents, the GIC decided to take a more active leading role in addressing balancing issues. Its work to date, which Vector supports, has culminated in the release of the Issues Paper for consultation.

4. ERGEG PRINCIPLES AS AN EVALUATION FRAMEWORK

17. Vector generally supports the use of the ERGEG principles (as laid out in full in Appendix A of the Issues Paper) to provide a framework to evaluate alternative balancing market design options for New Zealand[1].

18. Vector considers the ERGEG principles are, at a high-level, consistent with the Act and GPS objectives and outcomes and agrees that these principles will provide a useful framework for assessing and determining the most effective alternative arrangements. However, the ERGEG should be viewed as guidance and not applied as if they were mandatory statutory criteria.

19. Vector notes that, while the ERGEG principles are largely generic, there are aspects that do not sit comfortably with New Zealand specific circumstances (outlined in section 3 and referred to throughout the submission). This includes the definition of the residual role, and the extent to which this should be a TSO responsibility. Specific comments on principles needing refinement, together with suggested amendments or caveats, are provided below.

Principle 1

20. Allocates primary responsibility for balancing to users, with a residual role for TSO's. Given the issues with the New Zealand regime, Vector considers this aspect of the principle should receive the greatest emphasis. In particular, network user obligations and incentives to balance need to be strengthened, in recognition of the need to improve balancing performance.

21. This principle also refers to the residual role of the TSO. It provides that "the TSO retains the overall responsibility for the economic and efficient operation of its system and therefore should retain a residual role to maintain physical balance to ensure the efficient and safe operation of the system".

22. This aspect of the principle assumes a single, non-vertically integrated TSO which is not the position in New Zealand. In New Zealand a regulated single Balancing Agent model is likely to be more effective, as suggested by GIC. As a separate, independent party the Balancing Agent would be best placed to carry out the residual role working within physical standards set by the TSO. Such alternatives could be unnecessarily and prematurely discounted if this principle is strictly applied as worded.

23. Vector accepts that the economic aspect of this residual role is an important part of new balancing arrangements that meet industry and government objectives. However, under a single Balancing Agent model this responsibility is necessarily transferred from the TSO to the Balancing Agent.

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[1] Vector notes that the summaries in the GIC paper are not always consistent with the full text of the principles in Appendix A of the paper, for example there is no reference in the summary of principle 1 to the TSO responsibility for economic operation of the system (in addition to the efficient operation).

24. Further, as a TSO, Vector's primary concern is with managing physical system integrity: currently its residual role (under the VTC) is to ensure linepack is maintained within acceptable operational limits, i.e. its focus is on safe operation of the system. In contrast, Principle 1 suggests that the residual role should aim to ensure both safe and efficient and economic operation of the system.

25. It is likely that a single Balancing Agent will carry out this role across all balancing zones on both the Maui and Vector systems. The role will need to be defined, implemented, and operated centrally. Therefore Vector questions the appropriateness of the Principle 1 requirement that the TSO retain overall responsibility for the economic and efficient operation of its system. The GIC is better equipped to address the economic aspects (and the GIC may be responsible for contracting with the independent Balancing Agent, so would have an oversight role). Vector proposes that Principle 1 be reworded to reflect this.

26. In summary, Vector supports Principle 1, but notes that the wording of Principle 1 should be amended to clarify that:

    (a) the TSO responsibility extends only to safe operation of the system; and

    (b) efficient and economic outcomes are the responsibility of the Balancing Agent or a body overseeing the Balancing Agent such as the GIC (Vector in its model proposes that this role fall to the GIC who is best placed to address the economic objectives and policy).

Principle 4a

27. Vector supports the use of transparent market-based mechanisms in general. However, it notes that any arrangements need to fit-for-purpose for New Zealand: features of the New Zealand sector such as the size and depth of potential markets should be considered when evaluating potential options for procuring flexibility.

28. As outlined in its discussion on Principle 1, Vector also has some concerns regarding the assumption that the TSO should be responsible for procuring flexibility.

29. In summary, Vector broadly supports Principle 4a but proposes it be amended:

    (a) to clarify that the choice of mechanisms for procuring Balancing Gas should be mindful of New Zealand specific factors such as the size and depth of the potential market.

Principle 4c

30. Vector broadly supports this Principle. However, it suggests that such mechanisms should only be developed if cost-effective to do so, which may well not be the case in a small market such as New Zealand. It is also unclear as to who is intended to be responsible for the introduction of these mechanisms.

31. In summary, Vector is not opposed to Principle 4c, but proposes the following amendments:

32. addition of a caveat that the introduction of such mechanisms would only occur where it was cost-effective to do so.

33. Finally, while not necessarily an additional principle, Vector submits that it is critical that the roles and responsibilities of the various parties are clearly identified and defined in relation to any arrangement. This would include, for example, identification of the party responsible for introducing alternative flexibility mechanisms (Principle 4c) and the party responsible for procuring flexibility tools and services (Principle 8). Vector notes that Shippers, who cause the need for flexibility and stand to benefit from it most, should be collectively responsible and the necessary incentives put in place.

5. ISSUES WITH THE CURRENT BALANCING ARRANGEMENTS

34. Vector considers that the key problem with the current arrangements is that they place weak incentives on pipeline users and, to a lesser extent TSOs, to achieve an optimal balancing outcome, largely because:

(a) balancing obligations under the Maui Pipeline Operating Code ("**MPOC**") and, as a result, the Vector Transmission Code ("**VTC**") are insufficiently defined;

(b) imbalance charges are not cost-reflective under the current arrangements creating greater incidences of imbalance situations. Much of the balancing cost is socialised with no direct recovery;

(c) aspects of the arrangements require inefficient behaviour, for example, the ILON process which extends the balancing period over a number of days;

(d) enforcement mechanisms are sub optimal. There is a perception that OFO's are a last resort, however in future they may be more cost effective than alternatives as long as the Balancing Agent has effective enforcement mechanisms. New Zealand common law is also perhaps unclear as to the rights of pipeline companies to refuse to provide transmission services for non-compliance with contract;

(e) there is no direct (nominations) linkage between Shipper supply and demand, nor corresponding mechanism to match the two;

(f) there is a lack of any clarity around the scope of the residual balancing role of the TSOs, including security of supply obligations; and

(g) the existence of two balancing agents under the current arrangements leads to sub-optimal outcomes where Maui and Vector could potentially act in conflict with each other (for example, when tendering and purchasing Balancing Gas).

35. Vector also agrees with the main balancing issues indentified by GIC in Chapter 6 of the Issues Paper and by the TPBAG (which largely reflect the above). Vector considers that the issues lists, taken together, are comprehensive, and does not suggest inclusion of any further issues. (Vector has some further comments as set out below).

36. As set out above, the current arrangements were developed to enable Maui Open Access, at a time when it was perceived that ample flexibility was available in the Maui Pipeline. This has proved not to be the case: in the current environment, where pipelines have become increasingly constrained, the balancing arrangements set out in the MPOC and VTC are no longer adequate.

37. Given the nature of (and background to) the issues identified, Vector submits that a first principles approach should be taken to developing new arrangements. The continuing relevance or otherwise of existing design elements can then be considered in light of the overall design. Vector is concerned that the Issues Paper appears to treat certain

elements of the current regime (such as the incentives pool, liquidated damages process) as "given", for example, the Issues Paper questions whether compensation through the incentives pool should be comprehensive, whereas Vector believes the fundamental question is whether it should even be part of a new regime.

Inability to reform

38. Vector agrees GIC's assessment that the approaches to address the pipeline balancing issues have not been successful. Vector notes that this is because there are fundamental barriers which have prevented (and which will continue to prevent) the industry from developing a solution that is acceptable to sufficient market participants so that it can be implemented as an industry agreement or code. In these circumstances a regulatory solution is inevitably required.

39. In particular, the diverse interests of the various participants mean that it is extremely difficult to reach any agreement, let alone an agreement that meets the objectives of the Gas Act and GPS.

40. Where producers might be expected to seek arrangements that enable them to maximise the value of the condensate by injecting gas at a steady rate, Shippers are concerned with meeting the demands of end users of gas, while managing their take-or pay and other contracts. Pipeline owners' must manage their assets to meet the needs of all parties, firm capacity long term and flexibility short term, but their primary objectives are more around safe physical management of the system. Harmonising these competing commercial interests into an effective balancing arrangement is not possible through an industry agreement.

41. In this context Vector does not agree the comment in the Issues Paper[2] that TSOs have been unable to resolve balancing issues. It is the industry participants rather than the TSOs in isolation that have been unable to resolve the balancing issues.

Insufficient incentives to balance

42. Vector strongly agrees that the incentives in the MPOC and VTC are weak, where they exist at all. Currently the incentives and responsibilities on pipeline users to balance comprise the "reasonable endeavours" obligations in the MPOC and VTC, together with some allocation of costs through mechanisms such as the incentives pool.

43. Vector does not consider that either of these tools provides a sufficiently strong incentive to balance: The reasonable endeavours "obligation" creates an impression that an obligation exists, but this has proved difficult to enforce; and the existing allocation of costs is not sufficiently comprehensive or targeted to deliver the required behaviour. Information inadequacies may also exist. Each of these is discussed further, below.

[2] Page 30 of the consultation paper.

Obligations

44. Vector notes that the Issue Paper assessment focuses solely on incentives for balancing without also referring to the sufficiency (or otherwise) of obligations on users.

45. Vector submits that cost allocation incentives and obligations are complementary – they are not substitutes for one another, and both are needed to achieve efficient and safe outcomes.

46. Cost incentives alone may be sufficient in a situation where Shippers are able to make purely economic decisions on whether to be in balance. However, physical limitations of the transmission system mean that the size of the residual role is not unlimited. In this case, obligations are appropriate.

47. Currently the MPOC and VTC contain "reasonable endeavours" obligations on Welded Parties and Shippers (respectively) to maintain balanced positions. It is difficult to enforce these obligations. Vector considers that all reasonable endeavours obligations, backed up by an enforcement/compliance regime are essential for safe operation of the system. This need is unlikely to be met through a voluntary approach.

Extent of the residual role

48. As discussed previously (refer ERGEG principle 1), Vector agrees that the scope of the balancing role is unclear. The Issue Paper does not yet clearly explain what the residual role will encompass, including the extent to which procurement of Balancing Gas should be the responsibility of the TSO. The role needs to be clearly specified, including in relation to other roles such as the critical contingency operator, and TSOs.

Information

49. The Issues Paper suggests that, obligations and incentives aside, the information available to some Shippers is inadequate to enable them to maintain a balanced position.

50. Vector agrees that the available information may be less than perfect, but believes it is important to also recognise the contribution of retailers to the situation, and how much of the issue may be due to their own information and forecasting practices. Vector also questions whether the available information is used as effectively as it might be. Unfortunately, the situation will be compounded in the future by the excessive tolerances in the downstream allocation processes.

Mass market demand and information issues

51. The TPBAG suggests that the balancing arrangements need to be flexible enough to accommodate some variability of demand from forecast.

52. Vector agrees there needs to be some flexibility for that segment of the market which does not have time of use metering or telemetry, and where the benefits do not outweigh the costs. Equally however, it suggests that incentives to improve forecasting, nominating, and balancing behaviour need to be strengthened.

53. Vector proposes that stronger incentives be imposed on Large Stations with controllable demand, and the available flexibility in the system be used for the benefit of Small Stations, to help mitigate the risk they face due to demand uncertainty and less sophisticated metering. This submission proposes, in the section on Option Design Elements, how this might be achieved.

Potential cost of a balancing regime

54. An issue was raised by the TPBAG regarding the potential cost and complexity of a balancing regime.

55. Vector considers it is important to recognise transaction cost as a fit-for-purpose design issue – not a rationale for doing nothing. The costs and complexity of any proposed system need to be balanced against the benefits of more orderly Shipper behaviour. It is likely that the current arrangements are costly in terms of (unmeasured) efficiency losses, as large swings and imbalance trends are being accommodated but causers are not bearing the costs.

6. OPTION DESIGN ELEMENTS

56. In this section, Vector provides its views on the key design elements of an effective balancing regime. The following section then explains why the new regime must be implemented by regulation. Vector also provides a proposed balancing model, which it submits should be included by GIC as a preferred option in GIC's subsequent options paper (and other work).

Framework

57. Vector considers that the key elements of a balancing regime are as follows:

(a) Balancing definition – encompasses factors such as the balancing period, balancing zones, etc.

(b) Allocation of responsibility for balancing:

(i) Primary responsibility with Shippers, achieved by regulatory obligations and/or incentives (via cost allocation/penalties) to balance; and

(ii) Residual role with Balancing Agent/TSOs.

(c) Means for Shippers to manage risk: includes both tools (such as trading of imbalances) and information that Shippers can use to improve their balancing performance and manage the risks associated with imbalance. Where possible, this also includes tools to reduce risks where these cannot be managed in a cost effective manner.

(d) A governance regime to define processes for designing, implementing, and enforcing operational contracts for balancing, and for development of operational rules.

58. Vector's comments on the option design elements are provided within this framework.

Balancing definition

Balancing period

59. Vector supports the proposed daily balancing approach. It does not consider that strong arguments exist for a different balancing period.

60. Vector agrees with the GIC's view (p42) that the ILON arrangements in the MPOC are not consistent with daily balancing. Vector does not consider that a new regime can be established that is consistent with the ERGEG principles and yet encompasses daily ILONs.

Balancing zones

61. The Issues Paper states that "The New Zealand pipeline system can be treated as two physical balancing zones, based on gas odorisation. It also observes that "the New Zealand pipeline system is characterised by at least two commercial zones", on the basis of ownership, and finally notes

that there are in fact six commercial balancing zones comprising the Maui Pipeline and the five Vector BPPs. No conclusions are reached regarding the number of zones considered appropriate, but it does posit that more zones lead to more transaction cost, etc.

62. The discussion in the Issues Paper includes a number of inaccuracies in Vector's view. As this discussion is intended to inform the choice of balancing zones, Vector considers it important to clarify and correct some of the points made in the Issues Paper.

63. Creating balancing zones on the basis of odorisation is inappropriate. Odorisation has nothing to do with balancing, and Vector's pipelines are odorised due to a historic decision taken by Vector for the convenience of the industry as a whole, and which may one day be reversed. Hence "odorisation status" is not necessarily a fundamental or irrevocable distinction – and not an appropriate basis for determining balancing zones.

64. Further, Vector's balancing zones (North, BOP, SKF3, Te Awamutu North, and Minors) are defined as they are because (a) they represent physical conditions; and (b) they are compatible with Vector's contract carriage transmission regime. In particular:

(a) Vector's major pipelines are not physically connected. For example, the only way that gas can move from the SKF to the North pipeline, or the SKF to the Te Awamutu North pipeline, is via the Maui Pipeline;

(b) It is not possible to consider Vector's pipelines as a single balancing zone. If a Shipper could address mismatch on Vector's North pipeline by injecting additional gas at Kapuni, without being required to arrange for the gas to be transported from the SKF to the North pipeline it would not bear the full costs of the imbalance it created. Vector considers that Shippers' should be able to stipulate the locations they wish to ship gas between, and strongly opposes arrangements that provide incentives for Shippers to act in an inefficient manner and allows them to avoid costs;

(c) Under contract carriage Shippers are required to reserve capacity from a receipt point to a delivery point. Such a system works most simply and transparently when there is a single receipt point within a zone. As far as practicable, this is the case with Vector's existing zones: Rotowaro for the North, Pokuru for the BOP and Pirongia for Te Awamutu North.[4]

65. Vector strongly submits that the choice of balancing zones should be based on physical characteristics relevant to balancing, and in its

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[3] Note that Vector has considered splitting the Frankley Rd – Kapuni pipeline out of the SKF into a zone of its own, and may yet do so.

[4] The single exception is the SKF Pipeline, where in addition to Frankley Rd there are also the Kapuni and Mokoia receipt points. Vector has commercial arrangements in place to deal with this situation.

balancing solution suggests 6 physical zones, which are as currently defined in Maui and Vector arrangements.

66. Finally, Vector notes the comment in the Issues Paper that more balancing zones lead to higher transaction costs. Vector suggests that any such costs be considered as part of a cost benefit analysis for the proposed regulatory solution, and, not considered in isolation at this stage in the process.

Balancing responsibilities and approaches

67. Vector strongly agrees that the primary responsibility for balancing belongs with Shippers. In addition, to ensure safe and efficient outcomes, one or more parties must have a residual responsibility for balancing.

68. In this section, Vector outlines its views regarding the responsibilities of each of these parties, and how they may best be achieved, while ensuring that, to the extent possible, neither party faces undue risks that cannot be managed with the available tools and information.

Residual Role

69. TSOs are responsible for maintaining physical system integrity/ operating the system in a safe manner to meet the needs of pipeline users. This necessarily involves each TSO undertaking a residual balancing role.

Vector strongly agrees that the "safe" aspect of the residual balancing role should remain the responsibility of the TSOs. However, as discussed earlier, it is less comfortable with the assumption that TSOs will also be responsible for the "economic" objective.

Definition of the Residual Role

70. Vector's key issue regarding the residual role is the lack of a clear definition. The Issues Paper recognises that further definition of the role is needed (p39), including the extent of the role ("coordination" or also an "intervention" role).

71. The Issues Paper also discusses the Balancing Agent role, but it is not clear how this is related to the full residual role. Vector considers the Balancing Agent role:

(a) will be a subset of the full residual role. In particular, the TSO cannot pass linepack management responsibilities in their entirety to a Balancing Agent, but must retain, at a minimum, the right to set balancing parameters;

(b) should be a separate, ring-fenced entity, in order to address issues such as conflicts of interest; and

(c) must be appropriately funded for the tasks and risks it faces.

72. Vector would like to see a much clearer definition of the residual/Balancing Agent roles (possibly defined in terms of "operating objectives") developed as part of the next stage of work including how this is defined in relation to:

(a) the role of critical contingency operator (CCO). Where tools and processes (for example, issuing OFOs) will be used by both parties, it is important to clearly define the role of each party; and

(b) the set of tools available to the Balancing Agent. Reference is made to the possible mechanisms the Balancing Agent may use to procure and dispose of Balancing Gas, and to the use of OFOs. Vector considers that, prior to considering aspects such as the mechanism to be used to procure Balancing Gas, or the pricing approach to be used, it is important to clearly define the balancing objective, the set of tools that might be used for residual balancing, and how and when each might be used.

Single Balancing Agent

73. Vector supports the concept of having a single Balancing Agent carry out balancing activities across all pipeline zones, including both the Maui and Vector Transmission Systems. It agrees that, provided this arrangement can work operationally and contractually, it would be expected to deliver more efficient outcomes relative to having two balancing agents. Vector considers more work should be carried out on developing the practical arrangements.

Other issues related to the residual role

74. Vector considers the issues outlined above need to be resolved before significant time is spent considering mechanisms for procuring or disposing of Balancing Gas, or the cost allocation approach. However, in response to the Issues Paper, Vector provides the following preliminary comments.

Mechanisms for procuring or disposing of Balancing Gas

75. There is a range of possible mechanisms for procuring or disposing of Balancing Gas, from long term contracts for flexibility to short term trading through established or specific markets. Vector considers it desirable that the Balancing Agent arrangements allow it flexibility to select from a full range of options.

76. While it supports the "key requirements" for a procurement mechanism set out on page 43 of the Issues Paper, Vector notes that the design of any mechanism will need to be mindful of New Zealand-specific factors, for example, lack of depth in the market of Balancing Gas providers or buyers. It proposes adding a further requirement to that effect.

Recovery of balancing costs

77. Vector notes that the choice of pricing approach (i.e. average or marginal) will depend on the objectives of the allocation (to recover actual balancing costs, to encourage entry into the balancing market by providers, etc), which are not yet clear. It will also depend on the mechanism(s) available to the Balancing Agent to procure or dispose of Balancing Gas, for example, whether resources have a fixed cost component.

Determining cause

78. A point that is not raised in the Issues Paper is whether the requisite information is available to determine the causers of an imbalance. If the balancing status of users is not known, then balancing actions cannot be allocated to the causers.

79. Vector notes that, in its role as TSO, it deals with balancing only at the aggregate level and neither knows, nor has the means to determine, the "balancing status" of any Shipper on the day. Vector proposes consideration be given to development of a nominations regime across all pipelines, in order to provide part of the necessary information to enable the Balancing Agent to determine daily balancing status by Shipper.

Primary responsibility to balance with users

80. While a residual role is needed to ensure safe and efficient outcomes are achieved, the primary responsibility for efficient balancing belongs with Shippers. Vector is concerned that this obligation was not stated strongly enough in the Issues Paper.

81. This primary responsibility must be provided for through clear obligations, and incentives on pipeline users. It is of concern to Vector, as discussed earlier in this submission, that the role of obligations is not discussed in Chapter 7 of the Issues Paper; rather, the focus is on the use of price signals as the "main mechanism" to incentivise the desired balancing behaviour.

82. As stated above, cost allocation incentives and obligations are complementary – they are not substitutes for one another, and both are needed to achieve efficient and safe outcomes. Cost incentives alone may be sufficient in a situation where users' decisions about whether to be in balance or not are purely economic. However, the physical limitations imposed by the transmission system mean that the size of the residual role is not unlimited, and obligations are also necessary to contribute to achievement of the "safe" outcome.

Cost incentives

83. Vector very strongly agrees that cost-reflective imbalance pricing is needed to create incentives for users to self-balance to an efficient level, but also recognises a need to be cognisant of the existence of practical limitations to achieving good balancing performance.

84. The Issues Paper recognises (p45) that issues exist with the current liquidated damages/incentives pool regime and proposes reviewing the incentives pool arrangements to ensure it works with any new balancing arrangements, and to determine whether it should also apply in an under pressure situation.

85. Vector submits that these existing arrangements are of an interim nature rather than part of a comprehensive regime. A comprehensive long term solution requires a fresh start, as the current regime is incomplete and unlikely to fulfil all parties' requirements. Vector believes the GIC's proposed review should include the possibility of discarding the current regime and transitioning to a new one rather than trying to work around the existing set of arrangements if the objective is to develop a

comprehensive balancing regime where most or all costs will flow to causers.

86. Even supposing cost-reflective/causer pays pricing mechanisms are developed, Vector questions whether these will provide sufficiently strong incentives for Shippers to be in balance. This question arises because imbalances will, reasonably, only be cashed out when this is necessary to maintain linepack within limits. Many Shipper imbalances will occur which do not result in a balancing action being taken. To encourage more active balancing by Shippers to Large Stations, Vector suggests consideration be given to an additional cost incentive in the form of a penalty or fine, payable on all daily imbalances (in either direction) regardless of whether they result in a balancing action. Smaller users without daily metering information could be exempted from such a regime. Penalties collected could be used to offset some of the costs of the balancing regime.

Tools to manage imbalance and mitigate risk

87. ERGEG principle 3 notes that Shippers should not be exposed to undue risks they cannot manage and/or inefficient costs that could create a potential barrier to entry.

88. Vector agrees that, to the extent possible, Shippers' should not be exposed to risks they cannot manage. However, Shippers should take responsibility for managing risks where they can and it is cost effective to do so. For example, while Shippers' have long argued that they do not have sufficient information to maintain a balanced position, arguably it is the responsibility of Shippers to obtain the necessary information and to use it.

89. There are two elements to assisting Shippers to maintain balanced positions: provision of tools and information to enable management of risk that can be managed cost-effectively; and assistance with managing risk that cannot, such as that faced by mass market retailers without daily telemetry. We discuss each of these in turn.

Tools to manage risk

90. One tool proposed in the Issues Paper is allowing (p47) trading of imbalance positions. Vector suggests that, if the current system were to continue, more flexibility in trading operational imbalance may be helpful (as long as Maui transmission charges are not avoided by those causing the imbalance). Changes in the treatment of mismatch in the BPP would be required when such trades occur.

91. Lack of mechanisms for Shippers to hedge their positions will also be a key issue for those facing higher (less socialised) imbalance costs, and means to address this should be considered further.

Information for pipeline users

92. The Issues Paper raises the question of whether information that is currently available to Shippers' is sufficient for making good balancing decisions, and managing risks associated with imbalance. It proposes that some further information may be of use for these purposes.

93. Vector questions whether existing information is used as effectively as it might be and whether there is, or will be, value in providing additional information.

94. From where it sits, Vector observes that Shippers currently appear to be reticent to take responsibility for understanding and managing their imbalance positions. This is not surprising, given the very weak incentives for balancing under the current arrangements and the natural incentives on Shippers to hold out. On the other hand, there are also some questions about the timing and availability of information, though questions also arise over Shippers being prepared to pay for the systems that provide that information. Vector agrees with the suggestion made by the GIC that current arrangements probably have promoted underinvestment in forecasting capability, and the situation will likely improve if clearer price signals are put in place to allow investment decisions to be more clearly made. Similarly, clearer price signals will encourage user investment in additional telemetry or other equipment where this assists with balancing and is cost-effective.

95. Developments in modelling capability and information systems by Shippers in response to clearer price signals and balancing obligations may illustrate a need for further market information to be made available. Provision of further information should focus on improving Shippers' ability to maintain a balanced position, not on providing Shippers with information for second guessing the Balancing Agent (e.g. aiming to be out of balance in the opposite direction to any balancing action).

96. The Issues Paper discusses potential provision of information on balancing prices, and on other Shippers' imbalance positions. Vector generally supports publication of information that will assist participants (including those to whom the cost of a balancing action is allocated) to manage the risks they are exposed to. However, Vector considers it would be more useful to start by focusing on improving Shippers' incentives to self balance rather than providing information on other Shippers' imbalance positions.

97. Vector believes that Shippers are capable of improving on historical balancing performance by investing in forecasting and other tools. It strongly opposes any suggestion that centralised forecasting of non-daily metered load might be considered, as an alternative to Shippers' doing so. Suggesting TSOs should be made responsible for forecasting demand for Shippers simply because Shippers have not themselves utilised the available information and incurred the cost of developing tools and models is not appropriate or consistent with allowing Shippers to manage their own risks. While Vector recognises that developing the necessary tools may be costly for individual Shippers, it considers that the benefits of allowing each business to manage risk as it sees fit – thereby promoting a wide variety of business models – is of greater importance than shielding individual Shippers from the costs.

Residual risk

98. Some risks ("**residual risks**") exist that cannot be mitigated by users at a reasonable cost. A particular risk faced by Shippers to mass market customers which are not metered daily is that a balancing action may be taken which is attributable to them, but they did not have the complete

information to manage their position in advance of the balancing action being taken.

99. The pipeline system has limited flexibility. Vector is of the view that a number of mechanisms could be developed to allocate flexibility amongst Shippers such as tolerances, imbalances and other safe harbour mechanisms. It is also appropriate, in Vector's view, that flexibility should be allocated to those who face the residual risks or are unable to respond. Little or no flexibility should be provided to those who are able to respond quickly, regardless of whether they are prepared to pay. Finally, a tolerance should not result in parties who did not cause costs to be incurred cross-subsidising those that did.

100. An alternative to the use of tolerances is incorporated in the balancing model proposed by Vector (refer section 8). This approach involves the Balancing Agent taking balancing actions as normal, but allocating the actions (cost and gas title) first to Shippers to Large Stations, then sharing any residual amount amongst Shippers supplying Small Stations. This approach is possible because the aggregate balancing action will generally be smaller (or at least no larger) than the sum of individual imbalances. It places greater incentives on good balancing performance by users that have the information to do so, and provides somewhat of a "safe harbour" for those end users that do not. Over time as the balancing behaviour of Shippers to Large Stations improves, the incentives on Shippers to Small Stations will be stronger.

7. GOVERNANCE

101. Vector very strongly agrees that a robust governance framework is required for gas balancing. An effective balancing regime is the central foundation of the gas supply system, so it is the key element to get right.

102. The current MPOC/VTC arrangements were necessary at a point in time to enable open access on the Maui Pipeline. However, experience has shown them to be sub-optimal, and Vector does not consider they fully meet the regulatory objectives set out in the Gas Act and the GPS.

Overview - A Regulated Solution is Required

103. Vector strongly submits that regulatory intervention is the only reasonably practicable means for addressing the current issues and, thereby, achieving the regulatory objectives. In particular:

(a) the status quo is not an option given the core problems with the current regime. The winding down of Maui Legacy Gas arrangements is unlikely to resolve these issues; and

(b) intermediate options such as a pan industry agreement or code are unlikely to resolve issues with the status quo given: the inability of the relevant parties to reach any consensus to date; the diverse interests and commercial incentives of parties; the inability of any agreement to bind new entrants; possible Commerce Act risks and the difficulties in enforcing compliance.

104. In these circumstances, Vector submits regulatory intervention is required. Vector has proposed a detailed workable solution, which it submits is most likely to achieve the desired outcomes. This solution would be best implemented as rules given the likely need for a relatively flexible structure, the technical nature of issues and the fact that binding arrangements would only be on industry participants rather than the wider public.

Power to regulate

105. Section 43F of the Act provides that:

> (1) The Governor-General may, by Order in Council made on the recommendation of the Minister in accordance with sections 43I to 43P, make regulations for all or any of the purposes in subsection (2).
>
> (2) The purposes are—
>
> (a) providing for the establishment and operation of wholesale markets for gas, including for—
>
> (i) **protocols and standards for reconciling and balancing gas**:
>
> . . .[emphasis added]

106. Section 43Q(1) of the Act provides that the Minister may make a rule for all or any of the purposes for which a regulation may be made.

107. The Act therefore empowers the Minister to recommend regulations or rules relating to balancing arrangements (effective balancing being a fundamental requirement for the effective operation of the wholesale market for gas). The Minister is expressly empowered to include protocols and standards for reconciling and Balancing Gas in any such regulations or rules.

108. The Act also sets out what can be covered by the regulations or rules (without limitation) including providing for (among other things):

(a) person(s) or bodies to carry out functions in relation to those regulations or rules, and for matters concerning their establishment, constitution, functions, members (including their appointment, removal, duties, and protection from liability), procedures, employees, administration and operation, funding by industry participants, and reporting requirements; and

(b) systems, processes, and procedures (including dispute resolution procedures), and the keeping, supply, and disclosure of information...

109. Vector submits that the Minister is empowered to recommend regulation or rules covering the matters set out in its proposed option, including the establishment of a single Balancing Agent.

110. Under section 43J of the Act, the Minister can only recommend an Order in Council under section 43F if it implements a GIC recommendation. Section 43N requires that, before making a recommendation, GIC must:

(a) seek to identify all reasonably practicable options for achieving the objective of the regulation; and

(b) assess those options by considering—

(i) the benefits and costs of each option; and

(ii) the extent to which the objective would be promoted or achieved by each option; and

(iii) any other matters that the industry body or the Commission considers relevant; and

(c) ensure that the objective of the regulation is unlikely to be satisfactorily achieved by any reasonably practicable means other than the making of the regulation (for example, by education, information, or voluntary compliance); and

(d) prepare a statement of the proposal for the purpose of consultation under section 43L(1).

111. Section 43Q(3) of the Act requires the same for rules.

112. In broad terms the available options are to continue with the status quo, pursue a pan industry agreement or introduce rules and regulations. Vector submits that the introduction of regulations or rules is the only practicable means for achieving the regulatory objective as set out in

further detail below. Further, rules are the most appropriate option for implementing the necessary substance of changes required.

Are the regulatory objectives being met?

113. The relevant regulatory objectives are set out in the Act and the GPS and are as discussed in Chapter 4 of the Issues Paper. They include the underlying objective to provide a safe, efficient and reliable gas supply system.

114. Vector believes the current arrangements are inconsistent with this underlying objective and the other relevant objectives as set out in the Act and the GPS. In particular the current arrangements:

(a) are unlikely to achieve efficient outcomes, largely due to lack of clarity about rights and responsibilities. For example, the Commercial Operator and a Shipper may simultaneously take independent action to remedy an imbalance, resulting in an inefficient double-up;

(b) do not ensure that risks relating to security of supply are properly and efficiently managed: The probability of curtailment being needed and the likelihood of over-pressurisations situations occurring (requiring Gas to be vented) is higher than it need be due to the unclear allocation of rights and responsibilities;

(c) provide inadequate incentives for users to invest in balancing flexibility (a key aspect of transmission);

(d) do not ensure delivered gas costs and prices are subject to downward pressure (the current arrangement being inherently inefficient in various ways as found by TPBAG);

(e) do not best manage risks relating to security of supply, including transport arrangements (given the risks of imbalances disrupting production or breaching safe operating limits); and

(f) do not ensure that flexibility resources are used efficiently: looking at the system as a whole is more likely to achieve this.

115. Vector submits that its proposed solution meets the purposes and objectives in the Act and the GPS referred to above. In addition, this solution more effectively promotes open access to essential infrastructure and competitive market arrangements and ensures that barriers to competition are minimised including by ensuring arrangements are feasible for small users. In addition, the proposed solution also:

(a) clarifies the roles of pipeline owners relative to Shippers (a GPS outcome);

(b) provides for more effective management of security of supply risks (by allocating responsibilities);

(c) may, by more efficiently allocating costs, improve incentives for demand side management; and

(d) better meets the GPS outcome of ensuring gas governance arrangements are supported by compliance processes.

116. A detailed evaluation of the Vector proposal against the regulatory objectives and the ERGEG principles is set out in Appendix C.

Status quo is not an option

117. In Vector's view, a key failure of the current voluntary arrangements is the lack of incentives for users to balance. Vector submits that there is strong evidence of market failure in this respect; in particular, the large swings in Operational Imbalances evidence of free riding by pipeline users.

118. Vector notes and agrees with the GIC's conclusions in Chapter 3 of the Issues Paper that there is evidence of significant shortcomings in the current balancing arrangements. The Issues Paper, however, refers to theoretical market failure in addition to actual evidence of market failure and notes that the "theory is reinforced by [the] evidence". Vector respectfully submits that it is unhelpful and/or unnecessary to focus on the theoretical considerations as a basis for intervention where there is compelling evidence of problems with the existing arrangements. A focus on the problems identified (rather than theoretical concerns) provides a sound basis for intervention and ensures a robust cost benefit analysis for the proposed regulation.

119. GIC notes that, to the extent problems are caused by the Maui Legacy Gas arrangements, these will disappear over time. Vector does not disagree with this assertion, but suggests that the identified problems are bigger than this, and are unlikely to disappear without regulatory intervention. The divergent interests of TSOs and Shippers provide a fundamental barrier to any effective voluntary agreement to address these problems, irrespective of the Maui position. To the contrary (and as acknowledged in the Issues Paper) balancing is likely to become more volatile over time given the potential changes in gas supply and expected growth in peaking electricity generator demand, thereby strengthening the case for mandatory arrangements.

120. Vector submits that analysis and evidence to date provides sufficient basis for concluding that the status quo is not an option.

Non-regulatory options

121. The GIC concludes that the regulatory objectives may not be achieved without regulatory intervention but also notes caution is warranted because TSOs and Shippers are fully aware of the problems and it is possible that they may agree to make the necessary changes without regulatory imposition. GIC goes on to note that, despite industry efforts, there has been limited progress to date although does not discount such an approach.

122. Vector submits that GIC should discount at an early stage any possibility of any pan industry agreement resolving these issues, largely for the same reasons that the status quo will not work. GIC is not required to consider every option in detail - only those that are reasonably practicable.

123. Experience has shown us that balancing obligations clearly need to be mandatory in order to be effective. However, the GIC does not have the power to make a pan industry agreement or code binding. A mandatory industry agreement or code, however, is unlikely to be realised, and even if it is, would be impractical and unworkable for the reasons set out below (in addition to the reasons why the status quo is not an option - many of these reasons are acknowledged in the Issues Paper):

(a) the industry has been aware of the issues for some time but has been unable to voluntarily agree a way forward;

(b) the inability to agree to date reflects the numerous barriers to agreement including:

(i) the diverse interests of industry participants, including producers, pipeline owners, and Shippers, and also within each of those groups; and

(ii) the limited ability to change the existing MPOC and VTC:

(c) in order to be mandatory, any industry agreement reached (which is unlikely as set out above) must be included in the parties' contractual arrangements. This creates gaming issues and relatively asymmetric bargaining power between larger and smaller Shippers;

(d) any industry agreement between competitors potentially breaches the Commerce Act where, for example, the arrangement affects price (here the price for Balancing Gas and costs of balancing services) and information sharing and/or raises issues of barriers to market entry. In these circumstances, there is a real risk that the Commerce Commission would investigate the arrangement. In order to address such a risk, the industry may need to seek a finding of "no jurisdiction" (i.e. that the arrangement does not breach the Commerce Act by substantially lessening competition) or an authorisation from the Commerce Commission (this may be granted where there is a breach of the Commerce Act but a net public benefit in the arrangement). There are significant risks, delays and costs associated with an authorisation application that are likely to counteract the regulatory objectives under the Act and the GPS; and

(e) negotiation between parties is more expensive and the outcomes less certain than GIC consultation on regulation or rules.

Regulatory intervention

124. Vector submits that an efficient balancing regime (and therefore successful open access) can only be effectively implemented by way of regulations or rules.

125. The key advantages of regulations or rules are that:

(a) consensus from parties with divergent interests is not required (albeit GIC is required to consult in order to obtain industry

views) and, in this context, GIC will not have to make compromises that could weaken the arrangements;

(b) regulations or rules are mandatory and enforceable;

(c) the Commerce Act risks are avoided as section 43ZZR of the Act authorises, for the purposes of the Commerce Act, anything done by an industry participant for the purpose of complying with regulations or rules under the Act;

(d) clarity and certainty is provided, including for participants entering the market, particularly on the scope of the residual balancing role, the level of security or supply required, and which users are responsible for imbalances;

(e) compliance and enforcement is more effective (which is critical for the right incentives to be in place);

(f) previous analysis suggests that regulation is likely to be cheaper or at least only slightly more expensive than voluntary options, whereas the benefits of having a more efficient balancing regime are likely to be significant.

126. Vector submits that regulatory intervention should be the focus of GICs discussion going forward. The key issues then for consideration are as follows:

(a) whether the arrangements should be implemented as rules or regulations; and

(b) the detail of the appropriate regulatory model (as stated, Vector has developed a workable model for consideration).

Rules or regulations

127. Under section 43Q of the Act, the Minister may make a rule for all or any of the purposes for which a gas governance regulation may be made. In deciding whether to make a rule rather than a regulation, the Minister must have regard to only:

(a) the importance of the rule, including whether the rule has a material effect on the rights and interests of individuals:

(b) the subject matter of the rule, including whether the rule contains detailed or technical matters rather than matters of general principle:

(c) the application of the rule, including—

(i) whether the rule applies principally to a particular group (eg, industry participants) rather than the general public:

(ii) whether the benefits of publication in accordance with section 43R rather than the Acts and Regulations Publication Act 1989 outweigh the costs of publication by that method:

(d) the expertise and rule-making procedures of the recommending body.

128. Vector submits that gas balancing arrangements would most appropriately be implemented by way of rules as:

(a) the issues mainly effect the industry participants only (unlike, say, the critical contingency management arrangements where curtailment would potentially involve wider sectors of the public);

(b) the matters are largely technical and within the expertise of the GIC;

(c) while matters of general principle that provided a framework for the rules (such as the ERGEG principles) could potentially be included, their inclusion would not be critical to the effective operation of the rules (although helpful to the extent they would guide future changes). The rules would remain primarily technical and should not require the status of regulations solely on this basis;

(d) rules enable greater flexibility through a more accessible change mechanism in relation to publication and other implementation requirements and this would ensure that the arrangements are more cost effective and suitable for the purpose.

8. PROPOSED BALANCING MODEL

General Approach

129. The Proposed Balancing Model ("**Model**") has been developed to:

(a) address the issues identified to date with the design and implementation of the current transmission system balancing regimes;

(b) meet the objectives set out in the Gas Act and GPS; and

(c) be as consistent as possible with the ERGEG principles.

130. For it to work most effectively, the Model must be implemented via regulation. This will facilitate the appointment of a service provider (a Balancing Agent) and enable the use of a compliance regime – ensuring the enforcement of obligations (which evidence has shown might otherwise be difficult under contract).

131. The Model is premised on the Shippers of gas on both transmission systems having the primary responsibility for balancing their nominated gas injections with their gas demand (inclusive of trades). The only exception to this is at Injection Points, where Injecting Parties will have an absolute obligation to match injection quantities with the aggregate Shipper nominations from the Injection Point.

132. The Model focuses on promoting a causer pays approach so as to increase the incentives on Shippers to improve their forecasts and to monitor their imbalance positions. It further recognises that:

(a) some degree of central balancing will be optimal/ efficient; and

(b) the ability of some causers to improve their actions may be limited by information availability issues – however the Model seeks to encourage more/ better use of the information that is available to these parties.

Summary of Model

133. Shippers are shippers of Gas on the Maui and/or the Vector Transmission Systems.

134. End Users of Gas are split into two groups: Large Stations and Small Stations.

135. Shippers have an all reasonable endeavours obligation (the parameters of which will be expressly defined) to balance on a daily basis, and an absolute obligation to balance over time. Injecting Parties have an absolute obligation to match injection quantities with the aggregate Shipper nominations from the Injection Point. [*Consistent with ERGEG Principles 1,2,3*].

136. A single service provider – the Balancing Agent – is appointed to carry out a residual balancing role. The Balancing Agent will take balancing actions (with a full suite of options available to it), determine which Shippers caused the need for balancing actions, allocate costs (and gas

title (if any)) to those Shippers and arrange for the recovery of those costs.

137. The Maui and Vector Transmission Systems will be divided into Zones (6 suggested for discussion), each of which will have a specified linepack range – enabling the use of aggregate linepack flexibility.

138. The physical linepack for a Zone must stay within the specified linepack range. If a limit is hit, the Balancing Agent will take a balancing action to return the physical linepack to a mid-point. The Balancing Agent will have a suite of tools available to it so that it is able to make efficient and cost effective decisions in line with the objectives of the Gas Act and GPS. These tools would include: moving Gas between Zones (and then replacing it); procuring or selling Gas, requiring the use of compression (or not) and using Operational Flow Orders ("**OFO**s"). Any pricing approach should be mindful of the likely thin market for balancing gas. [*Consistent with ERGEG Principle 4a, 4b*]

139. Nominations will be required on both the Maui and Vector Transmission Systems – with nominations to be made by Shippers:

(a) from Injection Points on the Maui Pipeline to:

(i) Large Stations for load in Zones 1 and 2;

(ii) TP Welded Points; and

(iii) Small Station Pools for load in Zones 1 and 2;

(b) from Injection Points on the Vector Transmission System to:

(i) Large Stations for load on the Vector Transmission System (Zones 3 - 6) and on all Distribution Systems;

(ii) TP Welded Points; and

(iii) Small Station Pools for load in Zones 3 - 6;

(c) from Receipt Points (that are not Injection Points – i.e. TP Welded Points) on the Vector Transmission System to:

(i) Large Stations for load on the Vector Transmission System (Zones 3 - 6) and on all Distribution Systems;

(ii) TP Welded Points; and

(iii) Small Station Pools – for load in Zones 3 - 6.

140. Imbalance Positions will be created. Nominations will form half of the equation for calculating Imbalance Positions for Shippers at Large and Small Stations (and in respect of Injection Points, for Injecting Parties). Metering and allocation information will form the other half of the calculation. There are no tolerances.

141. Costs associated with balancing actions will be allocated to Shippers (and, where relevant, Injecting Parties) who the Balancing Agent has determined caused the need for the balancing action. Amongst causers,

these costs will first be allocated to Shippers at Large Stations (and where relevant, Injecting Parties) with an Imbalance Position in the opposite direction to the balancing action, and then if there are any remaining costs/GJs, to Shippers at Small Stations where the aggregate Imbalance Position at the Small Station is in the opposite direction to the balancing action. Small Stations thus, to some extent, have a safe harbour afforded by Large Station Imbalance Positions during the month, with the expectation that they will fix these positions quickly once their Imbalance Positions become known as part of the end of month ("**EOM**") allocation process.

142. Costs associated with balancing actions will not be "washed-up" relative to the initial allocation as alternate allocation or metering information becomes available.

143. Where Balancing Gas is purchased/sold it will be at a market price, with costs flowing and title amended accordingly.

144. In addition to the possibility of paying the costs associated with a balancing action and losing/gaining title to Gas, daily penalties are charged to Large Stations for both positive and negative imbalances outside a "Daily Limit". Neither Daily Limits nor penalties apply to Small Stations – recognising that different information is available to this group on a day (and throughout a month).

Medium Level Detail

Shippers and End Users

Current Situation

145. Currently, with respect to balancing obligations there is a distinction between Welded Parties and Shippers on the Maui Transmission System, but there is no real distinction on either Transmission System between types of end user.

Proposal

146. Shippers are shippers of Gas on the Maui and/or the Vector Transmission Systems.

147. The term Welded Party could be retained (for other purposes) – but the only Welded Parties with balancing obligations would be Injecting Parties, whose balancing obligation would be to match their injection quantities with Shippers' aggregate nominations from the relevant Injection Point.

148. End Users will be divided into two groups:

(a) Large Stations (on both Maui & Vector Transmission Systems, and on all Distribution Systems): these are all Receipt Points, all Interconnection Points, and all Delivery Points where there is only one end user (with maximum design flow rate greater than or equal to 5,000 standard m^3/hour); and

(b) Small Stations (on both Maui & Vector Transmission Systems, and on all Distribution Systems): these are all stations that are not Large Stations.

149. The reason for differentiating between these groups is that Large Stations have significantly better information available to them and they (and their suppliers of Gas) are better placed to use that information to manage risk than Small Stations are.

150. In recognition of this, the Proposal allocates different rights and obligations to Shippers who are shipping (and when they are shipping) Gas to Large Stations as opposed to Small Stations.

151. It will be necessary to regulate provisions into End User (and perhaps into Injecting Party) contracts to ensure that Shippers are able to meet their obligations under this Balancing Model and are able to pass appropriate costs on, thereby assisting in the overall process of ensuring that proper incentives are in place and costs flow to causers.

152. Injecting Parties have been carved out and given a balancing obligation because under- or over-injection by them creates balancing issues and they are the party with the most ability to influence this. Nonetheless, it is important to note that Injecting Party performance to date has been very good when compared to Shipper performance.

Obligation to balance

Current Situation

153. On the Maui Transmission System, Welded Parties have an obligation to balance, with Shippers being "deemed" to be in balance by virtue of the OBA (except in certain exceptional circumstances).

154. On the Vector Transmission System, Shippers have an obligation to balance.

155. Further, and more specifically:

(a) On Maui, Welded Parties are required to use reasonable endeavours to manage daily positions and Running Operational Imbalance ("**ROI**") within defined limits. In respect of ROI, Welded Parties are to use reasonable endeavours to manage the flow of Gas at their Welded Points so that the ROI at each Welded Point tends to zero over a reasonable period of time.

(b) On Vector, Shippers have an all reasonable endeavours obligation to maintain a balanced position on a Day however it is acknowledged that balance within a Day may not be possible where the Shipper is taking action to cause its Running Mismatch position to tend towards zero.

156. To date, balanced positions on both Transmission Systems have not been maintained. Whilst it is difficult to determine precisely how much of this is due to the Maui Legacy Gas arrangements under the MPOC, Vector nonetheless believes that changes need to occur to ensure an efficient set of balancing arrangements that reflect New Zealand's market conditions with strong incentives on Shippers to maintain balanced positions.

Proposal

157. The term "Imbalance Position" ("**IP**") will be introduced (replacing the terms Operational Imbalance ("**OI**") and Mismatch) with an IP existing for:

(a) each Injection Point and Large Station on the Maui Pipeline, on a Vector Pipeline and on a Distribution System;

(b) each TP Welded Point on the Maui Pipeline; and

(c) each Small Station Pool,

and, in respect of each Shipper (being the sum of the Shipper's IP at each Large and Small Station that it supplies) and, in respect of each Injecting Party.

158. No tolerances will apply.

159. The Proposal places an all reasonable endeavours obligation (the parameters of which will be specifically defined) on all Shippers to be in balance (i.e. to match their nominations to, with their off-take at, a point (or to, and at, a pool, in the case of Small Stations)) on a Day, and an absolute obligation to be in balance over a period (to be defined) (i.e. to take actions that return the Running Imbalance Position ("**RIP**") to zero). This applies equally to both Large and Small Stations. Further, it places an absolute obligation on Injecting Parties to match injection quantities with aggregate Shipper nominations from an Injection Point.

160. To the extent that: (i) a Shipper has a non-zero RIP at a Large Station that it supplies (or in the Small Station Pool) on any Day; or (ii) an Injecting Party has a non-zero RIP at an Injection Point, it may face being cashed out in the event that a balancing action is taken by the Balancing Agent.

Nominations

Current Situation

161. On the Maui Pipeline:

(a) Shippers make matching nominations at injection and delivery Welded Points. Shippers are not directly held to account for the integrity of these nominations as the OBA states that Welded Parties are responsible for any difference between these nominations and injections/off-takes at Welded Points.

162. On the Vector Transmission System:

(a) For the most part, Shippers do not make nominations. Nominations are required at Kapuni, Pokuru No. 2, in certain circumstances, at Frankley Road and for some users, for information purposes.

Proposal

163. Nominations are a useful input for defining what constitutes an imbalance at a point.

164. Accordingly:

(a) Specifically, nominations will be required from:

(i) from Injection Points on the Maui Pipeline to:

- Large Stations for load in Zones 1 and 2; and
- TP Welded Points; and
- Small Station Pools for load in Zones 1 and 2;

(b) from Injection Points on the Vector Transmission System to:

(i) Large Stations on the Vector Transmission System (Zones 3 - 6) and on all Distribution Systems;

(ii) TP Welded Points; and

(iii) Small Station Pools for load in Zones 3 - 6;

(c) from Receipt Points (that are not Injection Points – i.e. TP Welded Points) on the Vector Transmission System to:

(i) Large Stations on the Vector Transmission System (Zones 3 - 6) and on all Distribution Systems;

(ii) TP Welded Points; and

(iii) Small Station Pools for load in Zones 3 - 6.

(d) The sum of a Shipper's receipt nominations will equal the sum of its delivery nominations (including trades).

(e) All nominations will be all reasonable endeavours' estimates of injections and off-takes (as the case may be) and they will form part of the imbalance calculation.

(f) Injection Points and Large Stations must be remotely monitored via SCADA enabling the provision of hourly information.

(g) Nominations will be able to be updated during the Day via intra-day nomination cycles.

(h) Large Stations will have a Daily Limit. If on a Day, the imbalance associated with a Large Station is outside of that Daily Limit, the Shipper who supplies that Large Station will be charged a penalty – see further detail below.

Imbalance Positions

Current Situation

165. On the Maui Pipeline:

(a) the OBA means that Shippers are deemed to be in balance, except in exceptional circumstances, when a Shipper may attract a Mismatch position;

(b) Welded Parties have an OI position – the quantum of this is the difference between nominations to (or from) a Welded Point and the metered flow at that Welded Point.

166. On the Vector Transmission System:

(a) Shippers have a mismatch position on each Pipeline – the quantum of this is the difference between receipts of Gas into, and deliveries of Gas from, that Pipeline.

Proposal

167. As discussed above, the term "Imbalance Position" ("**IP**") will be introduced (replacing the concepts of OI and Mismatch) with IP existing:

(a) for each Shipper (except in the case of the TP Welded Points) and associated with:

(i) each Large Station:

- on the Maui Pipeline;
- on a Vector Pipeline; and
- on a Distribution System;

(ii) each TP Welded Point on the Maui Pipeline;

(iii) each Small Station Pool; and

(b) for each Injecting Party and associated with each Injection Point.

168. These Imbalance Positions will then determine the share of costs that the Shipper (and, where relevant, an Injecting Party) will bear in respect of that balancing transaction.

169. Although Shippers (and, where relevant, Injecting Parties) bear the costs of imbalance, an IP will exist at the TP Welded Points as this will assist in the attribution of balancing costs to Shippers.

Balancing Agent

Current Situation

170. Presently, the owners of the Maui and Vector Transmission Systems arrange for balancing services, and in the case of Vector the operation of

a Balancing and Peaking Pool ("**BPP**") to attribute the costs of imbalance on the two systems to Shippers.

Proposal

General

171. While Shippers (and Injecting Parties) have an obligation to balance, it is prudent to make arrangements for those circumstances in which they do not and as a result a physical balancing action needs to be taken.

172. A single Balancing Agent ("**BA**") will be appointed as a service provider to manage both Transmission Systems (and more specifically, all Zones) within specified physical linepack ranges (determined by each Pipeline Owner, acting in a reasonable and prudent manner). Its service provider status will be similar to that of the Allocation Agent and Critical Contingency Operator.

173. The BA role is bigger than a "last resort" balancing role, as it recognises the economic benefit of a central role. The BA is to look at the two systems as a whole, to take action and to attribute the costs associated with that action to causers.

174. The BA will have a full suite of tools available to it. For example: the ability to move Gas between Zones, to procure/sell Gas, to require the use of compressors and to use OFOs. All actions taken by the BA will have an associated cost, and this cost will be passed on to causers – for more detail on this, see the section below entitled "Allocation of Costs of Balancing Actions".

175. Criteria around the use of the tools will need to be defined – however a good deal of flexibility/discretion will need to be retained by the BA if we are keen to ensure costs are minimised.

Balancing Actions Taken

176. The two Transmission Systems will be divided into several Zones for balancing purposes. As a starting point for discussion Vector suggests the following Zones:

(a) Zone 1: Maui Pipeline (and associated Vector Pipeline) south of the Mokau compressor station;

(b) Zone 2: Maui Pipeline (and associated Vector Pipeline) north of the Mokau compressor station;

(c) Zone 3: Vector Pipeline north of Rotowaro, and including the Morrinsville pipeline and all that part of the Kapuni to Rotowaro pipeline between Rotowaro and the Temple View main line valve;

(d) Zone 4: Vector Pipeline east of Pokuru;

(e) Zone 5: Vector Frankley Rd to Kapuni pipeline, that part of the Kapuni to Rotowaro pipeline between Kapuni and the Temple View main line valve and Vector Pipeline south of the Kapuni Gas Treatment Plant; and

(f) Zone 6: Vector Pipeline between the Pirongia Offtake on the Maui Pipeline

(g) and the Te Awamutu Cogeneration Plant Delivery Point.

177. By "associated Vector Pipeline" in Zones 1 and 2, Vector is referring to the pipelines between the Opunake Delivery Point, Okato Delivery Point, Oakura Offtake, Pungarehu Offtake, Te Kuiti South Offtake, Te Kuiti North Offtake, Otorohanga Delivery Point, Ngaruawahia Offtake, Huntly (Town) Offtake and the corresponding Vector Delivery Points (where the Welded Point itself is not also a Vector Delivery Point) being the Opunake Delivery Point, Pungarehu No.1 Delivery Point, Pungarehu No.2 Delivery Point, Okato Delivery Point, Oakura Delivery Point, Te Kuiti South Delivery Point, Te Kuiti North Delivery Point, Otorohanga Delivery Point, Ngaruawahia Delivery Point, Huntly (Town) Delivery Point.

178. Physical linepack ranges within each of these Zones will be determined by each Pipeline Owner, acting in a reasonable and prudent manner, and it is only when these ranges are breached that a balancing action will be taken by the BA. The balancing action taken by the BA would be that required to bring the physical linepack back to the mid-point of the specified range – and could be any one or more of the actions described above (for example: movement of Gas, procurement/sale of Gas, use of compression, or use of OFOs).

Procuring Balancing Gas

179. This Proposal does not suggest a specific mechanism for procuring/selling Balancing Gas. An approach that is consistent with the Gas Act and GPS objectives will be able to be developed.

180. It is however noted that a number of procurement approaches are possible, e.g. contracting for availability in advance (similar to electricity market arrangements for instantaneous reserves), short term procurement with posted terms and backstop arrangements, long term procurement of flexibility, procurement through a wholesale trading platform.

181. Further, the procurement approach may be different for each of the different Zones to reflect the potential physical differences between the Zones.

182. In determining and/or evaluating approaches to procuring (and paying for) Balancing Gas, the industry should consider the likely limited market of buyers and sellers of Balancing Gas. Vector believes that the 'market' is likely to be relatively thin, which could result in the exercise of market power, to which users would be exposed, particularly in a marginal pricing environment. Vector does not consider that marginal pricing will bring forward more providers/buyers of BG, rather, BG capability is likely to be provided as a secondary product when oil fields are developed, or electricity companies need more gas to fuel power stations.

Allocation of Costs of Balancing Actions

183. Each balancing action will have a cost. The BA will determine who caused the need to take the balancing action - this may be one or more

Injecting Parties and/or Shippers and may include parties across a number of Zones.

184. Once these causers have been identified, the costs associated with the balancing action will be allocated amongst them:

(a) first, to Shippers supplying Large Stations where the RIP attributable to the Large Station is in the opposite direction to the balancing action (and this RIP contributed to the need to take the balancing action) – pro-rated on the basis of RIP, to a maximum of the Large Station RIP (and similarly for Injecting Parties);

(b) second, if there is any remaining cost (and/or Gas) to allocate, to Shippers supplying Small Stations where the aggregate RIP attributable to the Small Stations is in the opposite direction to the balancing action (and this RIP contributed to the need to take the balancing action) – pro-rated amongst the Shippers on the basis of individual RIPs, to a maximum of the Small Station RIP.

185. Allocation to individual Small Station Shippers would not occur until the end of the calendar month but would be based on Shipper RIPs at the time of the balancing action.

186. Where the balancing action involves the purchase or sale of Gas, title will also pass and RIPs will be amended accordingly. If Injecting Parties and Shippers to Large Stations have a combined RIP equal to or greater than the quantum of a BG purchase or sale, all of the BG, with the associated costs, will be attributed to them – with nothing flowing to Shippers to Small Stations.

Simple Allocation Example: BG Purchase

187. Assume the BA purchases 10TJ of BG, and assume that Shippers A, B, and D are supplying Large Stations – but that Shipper D's Large Station does not cause the balancing action to be taken. Shipper C is the aggregate of Shippers supplying small stations. Allocations of BG would be as follows:

Shipper	Contributing Station	RIP (before)	Allocation of BG	RIP (after)
A	Large	-10 TJ	6.66 TJ	- 3.33 TJ
B	Large	-5 TJ	3.33 TJ	-1.66 TJ
C*	Small	-5 TJ		-5.00 TJ
D	Large	+10	-	+10 TJ
Sum		-10 TJ	10 TJ	0 TJ

Result: Physical linepack has been returned to the midpoint - however all individual Shippers have non-zero RIPs.

188. Over a month, if Large Station RIPs are continually managed through the allocation of BG and their own actions, then the aggregate IP in a Zone

will be caused primarily by Small Stations. It would be expected that larger proportions of BG be allocated to Small Stations later in the month – as Shippers to these stations have less information available to them to accurately self-correct during the month. The result is that Shippers to Small Stations retain some incentives to better manage their IP, but are also protected to some extent without imposing undue responsibilities on others.

189. For example, consider the situation later in the month where Large Stations have incurred the same size daily imbalance as in the above example but the aggregate Small Station RIP has got much larger – because balancing actions haven't yet affected their RIP to any great degree. In this case, 35TJ of BG is procured, with the first 15TJ allocated to Shippers A and B, and the remainder to Shipper C:

Shipper	Contributing Station	RIP (before)	Allocation of BG	RIP (after)
A	Large	-10 TJ	10 TJ	0
B	Large	-5 TJ	5 TJ	0
C*	Small	-30 TJ	20 TJ	-10 TJ
D	Large	+10	-	+10 TJ
Sum		-35 TJ	35 TJ	0 TJ

Recovery of Balancing Costs

190. The BA will be responsible for the allocation, invoicing and recovery of all costs associated with balancing actions. The BA may choose to run a pool similar to the BPP (on the Vector Transmission System) or to adopt another mechanism.

191. It is proposed that these allocations will not be unwound as different metering (or allocation) information becomes available (if any).

Penalties

192. It is proposed that penalties are charged for both positive and negative RIP outside a "Daily Limit" (perhaps 1-3%) for Large Stations. This penalty may replace the daily incentive concept that is dealt with through the Incentives Pool on the Maui regime and:

(a) is intended to provide initial encouragement to improve balancing – it may be removed in time;

(b) does not alter title to gas;

(c) may be used to fund the BA role; and

(d) is not charged in respect of Small Stations, on basis that significant gains can be achieved most efficiently from Large Stations, which also have the required information to self-balance.

Mass market EOM allocation

193. Small Stations (in aggregate) may receive an allocation of the costs associated with a balancing action, which must then be allocated to individual Shippers at EOM. As wash-ups occur (as more metering information becomes available), there are multiple data streams on which this allocation could be based. It is proposed that allocation is based on the EOM numbers for each day on which a balancing action occurred (and would not be unwound as different metering (or allocation) data becomes available (if any)).

APPENDIX A

Clarifications and corrections

Table 1 provides a number of clarifications and corrections identified in Vector's consideration of the Issues Paper.

Table 1: Clarifications and corrections

Reference	Comment
Section 1.2	Four of the bullet points were not initiatives aimed at solving the current issues we face. Accordingly, it is incorrect to start the last paragraph with "Despite these initiatives, Gas Industry Co has continuing concerns…."
Section 2.4	The measures listed include a number that are largely, if not entirely hypothetical for New Zealand. Storage has been mooted only in the producing area of the country (i.e. Ahuroa storage in Taranaki), not near the main demand centres further north. There is also little likelihood of being able to "sculpt" producers' inputs to the pipeline, assuming this were desirable.
Section 5.1, footnote 7	Te Kowhai interconnection has been dismantled. While the Morrinsville pipeline was originally supplied from the Maui Pipeline, that interconnection was last used in 1992. Maui gas is not available at sufficient pressure and is not odorised. The Morrinsville system was connected to the Kapuni-Rotowaro pipeline (normally with supply coming from Rotowaro) precisely to increase the pressure to, and therefore the capacity of, the Morrinsville pipeline, and because gas in the Kapuni-Rotowaro line is odorised. Gas is <u>always</u> (not "commonly") supplied to the Morrinsville pipeline from the Kapuni-Rotowaro line and <u>never</u> (not "rarely") from the Maui Pipeline. This is not likely to change any time soon.
Section 5.1, page 20, second last paragraph	The Vector system connecting to the Maui Pipeline at Rotowaro only has an 86 bar maximum allowable working pressure until the Papakura East Pressure Reducing Station, it then reduces to 66 bar.
Section 5.1, page 21, paragraph 3	The key reason balancing was straight forward was the Maui Master Meter Agreement arrangement, whereby one party took the imbalance from the Maui field.
Section 5.2	Definition of system operator is inaccurate. Vector considers the system operator functions would be better defined as: • Approving nominations and scheduled quantities, coordinating forecasts; • Monitoring and managing linepack and imbalance; • Managing contingent events, executing curtailments and sending OFOs.
Section 5.4, page 24, paragraph 1	The description of the confirmation process is not strictly correct: Under the MPOC, the nominations are aggregated to a scheduled quantity (SQ) which then goes to the Welded Party for approval, possibly resulting in a lower approved SQ.
Section 5.4,	"These are the primary obligations on Welded Parties to balance"

page 24, paragraph 4	should read "These are the primary balancing obligations on Welded Parties". There is no absolute obligation on Welded Parties to take to the Scheduled Quantity
Section 5.4, page 24, paragraph 6	Note that this is the case despite the fact that Shippers are responsible for the creation of the imbalance in the first place by not matching their nominations with demand.
Section 5.4, page 25, paragraph 7	MDL cannot issue OFO's to Shippers on its pipeline, only to Welded Parties.
Section 5.4, page 26, paragraph 1	Regarding the comment that "….trading imbalance between Vector Welded Points is problematic since the Vector Shippers responsible for the imbalance at one Welded Point could be different from those at another Welded Point", Vector notes that Vector Shippers have been clear that Vector is not to trade any imbalance attributable to a Shipper. Shippers believe these are their positions to correct (or otherwise) themselves.
Section 5.4, page 27	Vector balancing arrangements are, as stated, substantially influenced by the introduction of Maui Open Access, because the Vector regime was designed to pass through MPOC charges. If the MPOC charges don't recover all costs then neither will the Vector arrangements. The set of arrangements across both pipelines are incomplete including costs being displaced in time from causers (at best D+2) and potentially avoided (i.e. socialised in Maui charges).
Section 5.4, page 28, paragraph 2	The BPP is really all about passing on the costs MDL allocates to Vector (cash outs, incentive pool payments etc) and should be characterised this way.
Section 5.4, page 28, paragraph 4	Receipts at Kapuni are <u>currently</u> determined by summing upstream quantities. It is possible this could move to daily if the information were provided by Shippers'.
Section 7.6, page 49, paragraph 1	Vector's tender process has in fact been used on a number of occasions.

APPENDIX B

Interpretation of Relevant MPOC/VTC Provisions

Vector has also reviewed Appendix B of the GIC Transmission Pipeline Balancing Issues paper, and a mark up of suggested changes is. The changes are intended to either ensure accuracy or to provide further detail where considered useful.

The wording in the following table (Table 2) is a paraphrase of the actual wording. The original wording should be used for strict interpretation of requirements. No party to either Code will be bound other than by the provisions of the relevant Code as incorporated in their relevant ICA.

Table 2: Interpretation of Relevant MPOC and VTC Provisions

	Maui Code	Vector Code
RPO	Notwithstanding any other provision, MDL and each shipper and welded party shall at all times during the term of its TSA or ICA act as a RPO in all of its operations under such agreements (2.3).	Vector and shippers shall act as RPOs when exercising any of their rights, powers, obligations and duties under a TSA (2.7 and 2.8).
Provision of services	MDL shall provide and each shipper shall accept transmission services on the terms and conditions set out in the MPOC (2.4). MDL shall, acting as a RPO: • on a 24 hours per day basis receive, transmit and deliver approved nominations (2.5(b)); and • use reasonable endeavours to provide Maui pipeline capacity consistent with its 12 month capacity forecast (2.5(e)). MDL will not individually contract storage services with specific shippers or welded parties, other than to maintain a contingency volume (2.8).	Vector shall provide transmission services on the transmission system on a 24 hours per day, 7 days per week basis (2.1). Subject to qualifications as to uneconomic transmission service, interruption of transmission and termination or suspension of a TSA as set out in other provisions of the VTC, Vector shall receive gas at the specified receipt point and make an equivalent quantity of gas available for that shipper to take or transfer at the specified delivery point, to the extent the quantity of gas is not in excess of the shipper's maximum daily quantity or maximum hourly quantity for the delivery point (2.2).
Users promise	Shippers must ensure the sum of their nominated quantities at receipt points equal, the sum of their nominated quantities at delivery points (MDL will not confirm any nominated quantity that does not comply with this clause) (8.2) and shippers warrant that all forecasts, notifications and requests are made in good faith (8.3). Welded parties shall inject or off-take a quantity of gas from a welded	Shippers shall use all reasonable endeavours to ensure that, in respect of each day, receipt quantities match delivery quantities on each pipeline, but shippers may cause receipt quantities to be different from delivery quantities for the purpose of causing their running mismatch to tend towards zero (8.1) Where shippers have more than one TSA they may aggregate their

	Maui Code	Vector Code
	point equivalent to the scheduled quantity for that welded point, but it is acknowledged that a welded party may inject or off-take more or less than the scheduled quantity and that (subject to section 27 (Force Majeure)) the sole consequence for imbalance is as per section 12 (12.1). Welded parties shall use their reasonable endeavours to manage flows so that Running Operational Imbalance (ROI) tends towards zero over a reasonable period of time, except to the extent that in the welded parties reasonable opinion it is attributable to legacy gas (12.9).	mismatch on a pipeline on making a request in writing to Vector (until 30 September 2009) (8.8). Shippers shall enter Gas Transfer Agreements (2.9 and 2.10), which must set out rules for determining the quantity of gas transferred by the transferor to the transferee(schedule 6).
Linepack management	MDL will act as a RPO to maintain sufficient total linepack necessary to delivery legacy gas and approved nominations and to provide the posted flexibility for daily operational imbalance limits, peaking limits and contingency volume (18.1). MDL will make gas available for off-take at not less than 31 bar (unless the welded party agrees to a lower pressure) (18.2). Other than for maintenance, MDL shall not knowingly schedule operations which would: • result in pressures falling to operationally unacceptable levels; or • otherwise jeopardise the integrity of the Maui pipeline or a connected transmission pipeline or the ability of MDL or a welded party which controls a connected pipeline to provide transmission services. (18.3). MDL shall, acting as a RPO and subject to maintaining the Taranaki pressure within 42 and 48 bar except in certain circumstances (2.19), use reasonable endeavours to manage the Taranaki pressure as low as practical while maintaining sufficient line pack to meet its obligations, and not more than the safe maximum (2.5(c) and (f)).	Vector will use its best endeavours to manage linepack within the acceptable operational limits for each pipeline which shall be set by Vector at levels that are sufficient to enable Vector to comply with its obligations to make gas available (8.3). If the line pack reaches or is outside of the relevant acceptable operational limit, Vector will: • take steps to ensure the line pack is returned within the acceptable operational limits; • use reasonable endeavours to minimise costs; • if there is time, follow a defined tender process (see below) (8.4). Note the Vector delivery point interconnection agreements have a best endeavours obligation to deliver between the defined maximum and minimum delivery pressures. The receipt point agreements have a maximum operating pressure and obligations on the parties to ensure pressure remains below the defined maximum.
Excess imbalance	MDL may, at its sole discretion, give an Imbalance Limit Overrun Notice	In respect of an ILON notified to Vector, shippers shall use

	Maui Code	Vector Code
	(ILON) to a welded party if the welded party has an accumulated excess operational imbalance (AEOI), and the welded party will comply (12.10). If the welded party fails to comply with the ILON within the ILON notice period (not less than one day or not less than seven days in certain circumstances such as force majeure) MDL may, at its sole discretion, sell gas equal to the AEOI at the negative mismatch price where there is a negative ROI or buy gas equal to the AEOI at the positive mismatch price if there is a positive ROI, and title to the gas will be deemed to pass from seller to buyer on the day the ILON expires (12.11).	reasonable endeavours to manage running mismatch towards zero on the relevant pipeline over a reasonable period of time (8.2). When receiving an ILON Vector shall: • post it on OATIS; and • post an estimate of Vector's contribution to the ROI at the welded point and the accumulated excess operational imbalance specified in the ILON (8.5).
Constraints on balancing costs	The negative and positive mismatch prices (as above) will reflect the balancing agent's costs in accessing and disposing of gas. If a liquid gas market develops, these prices will reflect the buy and sell spot prices in that market. MDL undertakes that, as pipeline operator, it shall not seek to make a profit or loss from its activities in relation to the sale and/or purchase of balancing gas, or settling mismatches or ROI (11.10).	Vector shall only recover direct costs of sale or purchase of balancing gas or a MDL cash-out and may not add a margin. However, Vector may recover costs paid to a third party for the administration of the BPP account from shippers in proportion to each shipper's aggregate deliveries (8.20). When managing linepack outside limits, where there is time, Vector will (8.4(c)): • issue a request for tenders to shippers and relevant gas industry members seeking tenders to buy or sell gas which it estimates to be sufficient to return the line pack within acceptable operational limits; • post on OATIS the price, quantity and delivery point of each tender (bur not who submitted the tender); and • if it accepts a tender at all, accept the lowest priced tender if buying or highest price if selling, and apply such gas to return the line pack within the acceptable operational limits. Vector shall be entitled to include the direct cost of transporting gas

	Maui Code	Vector Code
		to the relevant welded point in evaluating the price tendered for and determining the cost of balancing gas and such transportation costs shall be allocated to the BPP along with the cost of the balancing gas (8.6). Vector shall use standard tender terms posted on OATIS (8.7).
Interruption of flow	MDL may without incurring any liability under the relevant TSA or ICA: • interrupt or reduce transmission and curtail approved nominations and associated scheduled quantities; and/or • give a welded party notice of an OFO to curtail or shutdown transfer of gas and the welded party shall comply, for any period which in MDL's opinion is necessary for various defined reasons, including where the welded party has an excess daily imbalance or exceeds its peaking limit and MDL considers delivery of gas may impair MDL's ability to deliver gas to any other customer, provided that MDL must act as a RPO and in a non-discriminatory manner (15.1). Welded parties may also acting as a RPO interrupt flow for certain reasons by giving notice to MDL via the system operator (15.2). Where transmission is interrupted by MDL or a welded party approved nominations will be curtailed in accordance with section 8.29 and balanced in accordance with section 8.30 and the scheduled quantity deemed reduced (15.1 and 15.2).	Vector may curtail or shutdown receipts or deliveries without incurring any liability to a shipper under the relevant TSA, to the extent and for the duration that it (acting as a RPO) for various reasons determines is necessary, (including where Vector's ability to deliver gas is impaired as a result of a shipper exceeding its MDQ or MHQ, an operational imbalance between a pipeline and the Maui pipeline or a depletion in line pack outside the acceptable operational limits) with conditions (10.1). Vector may for any of the specified reasons issue a shipper with an OFO to ensure that its off-take is curtailed and/or its nominated quantities are reduced and the shipper shall use its best endeavours to immediately comply (acknowledging in the case of major plant the need to shut down in accordance with safe operating procedures). Vector will minimise the period of curtailment or shutdown required under an OFO to the extent reasonably practicable (10.2).

	Maui Code	Vector Code
	For interruptions MDL and welded parties will use reasonable endeavours to notify, consult and cooperate with affected parties (15.3 and 15.4). Where an OFO is breached MDL may suspend injections or offtakes to the extent necessary and for the duration of any non-compliance provided that in MDL's opinion acting as a RPO such action is necessary to protect the operational integrity of the Maui pipeline or the wider NZ gas pipeline system (2.24). MDL will use reasonable endeavours to maintain a contingency volume of gas for use during a contingency event, maintenance or Force Majeure (15.5). MDL may use the contingency volume or part of it to assist a welded party or shipper where interruption under section 15.1 or 15.2 has occurred. That party is responsible for replacing the contingency volume by clearing any operational imbalance or mismatch as soon as reasonably practicable (15.9).	
Small Welded Points5	[Very small stations are grand-fathered pre-existing metering standards and do not have real time telemetry. This means imbalance is only determined at month end.] This is background rather than an actual provision At these small stations welded parties shall remove any accumulated excess operational imbalance by transferring it to one or more large stations within 5 business days of receiving notice from MDL (12.5).	When required by MDL, Vector will transfer an amount of operational imbalance equivalent to the shipper's running mismatch to a large welded point on a pipeline used by the shipper (8.9 to 8.11).
Damages	The parties have created an Incentives Pool to provide a system of liquidated damages (14.1) which is the sole and exclusive remedy for any inability by a welded party to take full scheduled quantity on a day as a result of an operational	To the extent Vector pays under MPOC 12.13 indemnity and Vector has been an RPO, shippers who have a negative running mismatch at the relevant time shall pay into the BPP account their portion of the payment

[5] The MPOC defines small welded points as a special class of interconnection points that are very small and do not meet the real time metering requirements of the major welded points.

	Maui Code	Vector Code
	imbalance or exceeding a peaking limit (14.5). Welded parties incur liability to the Incentives Pool to the extent flow exceeds peaking limits (13.3) or daily imbalance depletes linepack in excess of the daily operational imbalance limit (12.7). If another welded party incurs an incentives pool debit on a day which results in a welded party being unable to off-take its scheduled quantity or having its scheduled quantity curtailed then that welded party may claim via the Incentives Pool at the defined daily incentive price and shall not incur any incentives pool debits for exceeding the peaking limit in respect of any affected welded point (12.16). The balancing agent may make a claim on the pool to meet the costs of buying any gas on the day up to the sum of all incentives pool debits for that day, provided that the balancing agent will not recover more than the daily incentive price for each GJ of gas or derive any profit or suffer any loss and will account to the incentives pool trustee (14.4). The Maui mining companies may make a claim, within limits, for an inability to deliver legacy gas on the day (14.9). The trustee shall invoice each welded party that has incurred a liability in proportion to their contribution (14.11) and pay incentives pool claim as soon as it receives payment for all incentives pool debits and will pay on a pro rata basis if payment of all incentives pool debits is not made (14.12).	calculated pursuant to the shipper allocation formula (8.12). If Vector makes a payment to the MDL Incentives Pool arising from excess daily imbalance then Vector is paid out of the BPP account. Such amount will be allocated to Vector and its shippers on the relevant pipeline in proportion to their contribution to the aggregate negative mismatch who will pay the amount so allocated to them into the BPP account (8.13(a)). If Vector makes a payment to the MDL Incentives Pool as a result of exceeding a peaking limit then Vector is paid out of the BPP account. Vector, acting reasonably, determines the allocation of the cost to shippers in proportion to their contribution or where Vector is unable to identify which of them then to all shippers in portion to their gas delivered on that pipeline on the day, except Vector pays to the extent it contributed to the peaking limit being exceeded by failing to act as a RPO. (8.13(b)).
	Welded Parties indemnify MDL for direct costs incurred by the balancing agent outside of its supply arrangements to replace accumulated excess operational imbalance, but only to the extent that MDL has acted as a RPO to mitigate such costs (12.13(c)).	Shippers not able to take their gas entitlement (prior to any OFO reducing their entitlement) who consider acting reasonably that they have a bona fide claim may claim damages from the BPP account, and Vector shall verify damage claims and action any verified claim (8.14).

	Maui Code	Vector Code
		Any recovery of payment from the incentives pool in respect of a verified claim that arises as a result of the same event on the Maui pipeline shall be allocated between shippers in the proportion that such verified claim bears to the aggregate of all such verified claims in respect of that same event or circumstance on the Maui pipeline. Vector shall use all reasonable endeavours to pursue recovery of payments from the Maui Incentive Pool. Any payment recovered from the Maui incentives pool shall be paid into the BPP account and the BPP Trustee shall pay each shipper who made a verified claim in the proportion that it bears to the aggregate of all such claims (8.15). Verified damage claims are paid to shippers at the Maui daily incentive price reduced by the Maui pipeline contribution to the claim and limited to the recovery from shippers causing non-delivery. If the amount received from such shippers is less than the amount payable to all shippers with verified claims, each shipper will receive payment based on the proportion that their claim bears to all such claims (8.16). Where, in respect of a pipeline and a day on which a shipper has a verified claim, Vector has a negative Vector imbalance or a shipper has a negative mismatch, the shippers and/or Vector shall pay an amount to the BPP account, based on the proportion that their negative mismatch on that day bears to the total negative mismatch (8.17). Where Vector buys balancing gas, the BPP trustee shall make such payment out of the BPP account and where Vector sells gas, Vector shall pay the proceeds of such sale into the BPP account. The contributing shippers will

	Maui Code	Vector Code
		purchase the gas or sell a quantity of gas to Vector (as applicable) in proportion to their running mismatch on the relevant pipeline at the relevant price (8.18). If payment is required as a result of a cash-out, where Vector purchases gas the BPP trustee shall make such payment out of the BPP account and where Vector sells gas Vector shall pay the proceeds of the sale into the BPP account and the contributing shippers (and Vector if it has running mismatch) will purchase the gas or sell a quantity of gas to Vector (as applicable) in proportion to their contributing running mismatch on the relevant pipeline at the relevant price (8.19). Vector shall not correct balancing allocations if it becomes aware that information on which it was relying was incorrect, but Vector will adjust receipt and delivery quantities and the Vector Imbalance to take into account the effect of incorrect or deficient information (8.21).

APPENDIX C

Test of Vector's Solution Against Gas Act and GPS Objectives and ERGEG Principles

The following table (Table 3) provides comment on the extent to which Vector's model achieves the objectives in the Gas Act, the Government Policy Statement on Gas Governance 2008, and the ERGEG Principles.

Gas Act objectives	Vector model
'…ensure that gas is delivered to existing customers in a safe, efficient, and reliable manner'	Vector's proposed model focuses on clarifying the roles and responsibilities of each participant, through the use of obligations and incentives. • With regard to the 'safe' component of this objective, it clarifies that the primary **obligation** to balance lies with Shippers, while recognising that a residual safety role is required which is the responsibility of TSOs (and which will be managed to the physical capabilities defined by TSO's). The proposed implementation of the model as Rules will allow for effective enforcement of these obligations; • With regard to the 'efficient' component of this objective, the model clarifies that the residual role also has an economic component. It uses cost reflective / causer pays allocation of costs to provide **incentives** to Shippers, as the party best able to influence their positions, to manage their imbalance positions. This improved clarity around the roles of each party should be expected to reduce inefficient balancing actions, such as when a Shipper and the Balancing Agent both take actions to reduce imbalances. The approach of considering the entire gas pipeline system as a whole is expected to achieve more efficient use of limited resources that provide flexibility. It will also avoid the creation of inefficient competition for balancing resources. The model also proposes increased transparency on aspects such as the parameters defining when the balancing agent will carry out balancing actions, and how any balancing gas procurement or disposal will be priced. This, together with increased information provision to assist Shippers to manage their positions, will further contribute to the efficiency objective.
The facilitation and promotion of the ongoing supply of gas to meet New Zealand's energy needs, by providing access to essential infrastructure and competitive market arrangements	Vector considers that its proposed solution more effectively promotes open access to essential infrastructure and competitive market arrangements by clarifying roles, responsibilities and accountabilities in both of these areas. An effective balancing regime is the foundation for an efficient market.

Gas Act objectives	Vector model
Barriers to competition in the gas industry are minimised	Vector considers its proposed solution minimises barriers to competition, including by ensuring arrangements are feasible for Shippers to Small Stations (recognising differences in terms of information availability etc. relative to Shippers to Large Stations), and by providing clarity as to the costs and obligations on new entrants.
Incentives for investment in gas processing facilities, transmission, and distribution are maintained or enhanced	Vector considers the existing arrangements do not provide adequate incentives for Shippers to invest in balancing flexibility (a key aspect of transmission). While it has not proposed a specific pricing regime for Balancing Gas (and notes that that marginal pricing is unlikely to bring forward investment in flexibility such as storage), it believes that the cost-reflective / causer pays focus of its proposed model will provide incentives for investment in forecasting, metering and telemetry, etc. (where these are cost effective), which will enable existing transmission to be used more efficiently.
Delivered gas costs and prices are subject to sustained downward pressure	Vector expects that its proposed solution will achieve more efficient use of resources, including transmission capacity and flexibility resources, by allocating the costs to those best able to manage them. Having a single Balancing Agent across all pipelines will avoid fragmenting the market which could potentially lead to less competitive circumstances.
Risks relating to security of supply, including transport arrangements, are properly and efficiently managed by all parties	Vector considers that clarifying the allocation of rights and responsibilities of participants (including relative to the Critical Contingency Operator) is likely to reduce the probability of curtailment being needed and over-pressurisation situations occurring. In addition, Vector would expect that, over time, the confidence of TSOs in the accuracy of nominations will improve, which will also contribute to efficient security of supply management.
Consistency with the Government's gas safety regime is maintained	Clarifying and simplifying the TSO role on safety issues will assist in this area.
Energy and other resources used to deliver gas to consumers are used efficiently	See rows (1) and (3) above.
Competition is facilitated in upstream and downstream gas markets by minimising barriers to access to essential infrastructure to the long-term benefit of end users	In addition, Vector considers that its proposed model supports the presence of a variety of business models, which in turn promotes competition through innovation.

Gas Act objectives	Vector model
The full costs of producing and transporting gas are signalled to consumers	Vector considers that allocation of costs to Shippers on a causer pays basis (reflected into End User contracts) will improve signalling of the full costs of transporting gas to consumers. In addition, clarifying the Balancing Agent role and explicitly funding it will recognise this cost of balancing that has previously been obscured, or socialised.
The quality of gas services where those services include a trade-off between quality and price, as far as possible, reflect customers' preferences	By placing responsibility for balancing arrangements in the hands of Shippers, they are then in the primary position to make decisions regarding the extent to which they wish to find solutions to reduce those costs.
The gas sector contributes to achieving the Government's climate change objectives as set out in the New Zealand Energy Strategy, or any other document the Minister of Energy may specify from time to time, by minimising gas losses and promoting demand-side management and energy efficiency	Vector considers that its model will, by more efficiently allocating costs, improve incentives for demand side management (and the investment required to enable this) where this provides a cost-effective means of balancing.

Relevant GPS Outcomes	Vector model
Accurate, efficient and timely allocation and reconciliation of downstream gas quantities	Vector's model proposes that: • Large Station imbalance is measured on a daily basis, consistent with the telemetry and metering they have in place; and • Small Station imbalance is measured on a monthly basis (recognising the metering that is in place in most cases) – but efficient allocation of costs will promote investment in improved metering and telemetry where this is cost-effective. The model also improves certainty for End Users by proposing that, to the extent appropriate, downstream allocations of balancing gas are not washed up if new information becomes available.
An efficient market structure for the provision of gas metering, pipeline and energy services	Vector believes that the proposed causer pays allocation of costs will promote efficient investment in cost-effective telemetry and metering, which will contribute to an overall lower cost outcome. The improved balancing performance by Shippers that is likely to occur as a result of the causer pays focus will efficiently defer the need for investment in new transmission capacity.
The respective roles of gas metering, pipeline and gas retail	The proposed model clarifies the roles of pipeline owners relative to Shippers. It recommends that definition of the

Relevant GPS Outcomes	Vector model
participants are to be clearly understood	role of pipeline owners relative to the balancing agent and the CCO be pursued in the next stage of work.
Efficient arrangements for short-term trading of gas	Vector recognises that mechanisms for short term trading of gas are likely to be a key tool for procuring and disposing of balancing gas, as well as for risk management by participants. While its model does not go so far as to propose such arrangements, it recognises the need for these and expects they will be developed in time, as needed. Vector sees a clear relationship with short term gas trading. Balancing Gas may be more cost effectively obtained if short term gas trading is improved (assuming this is feasible), and demand for short term trading may potentially increase (or decrease) as a result of greater clarity of balancing roles and responsibilities.
Accurate, efficient and timely arrangements for the allocation and reconciliation of upstream Gas quantities	Vector's proposed nominations regime will enable more timely and accurate determination of imbalance positions. The proposed model provides incentives for balanced positions to be maintained at injection points as well as delivery points. Further enhancement could include daily determination of downstream positions for balancing purposes.
Gas industry participants and new entrants are able to access the following physical assets and services: • *third party gas processing facilities;* • *transmission pipelines;* • *distribution pipelines;* *on reasonable terms and conditions*	The proposed model enables this outcome relative to other solutions which have the potential to increase barriers to entry, or increase costs to smaller or less flexible Shippers (Large versus Small Stations).
Sound arrangements for the management of critical gas contingencies	The model proposes that clarity around the roles of the TSO, Balancing Agent, Shippers and CCO, and the tools available to each, be sought as a next step in this work.
Good information is publicly available on the performance and present state of the sector	Vector's model supports greater transparency in information that will assist Shippers to more transparently manage their balancing positions.
Gas governance arrangements are supported by appropriate compliance and dispute resolution processes.	Vector considers its proposal to implement the balancing model as Rules, improves the situation in this regard.

ERGEG Principles (with proposed amendments)	
Principle 1 - Balancing responsibilities: The primary responsibility for balancing should be with the users to balance their own inputs and offtakes; but the TSO will still retain the overall responsibility for the ~~efficient~~ safe operation of its system, and thus should retain a residual role to maintain physical balance. A Balancing Agent or other body should retain responsibility for the efficient and economic operation of the system	Vector's proposed model is consistent with this principle, as amended: • Vector considers its model clarifies balancing responsibilities. It places an obligation on Shippers to use all reasonable endeavours to maintain a balanced position (being the primary responsibility) as well as providing cost incentives for an economic level of balancing. • The proposed model also clarifies the existence of a residual role. While the ERGEG principle allocates this responsibility to the TSO, Vector suggests this should be carried out by a central balancing agent – not necessarily the TSO - operating across the entire pipeline system under contract to the GIC.
Principle 2 - General requirements for balancing rules: Balancing rules should be designed in a fair, non-discriminatory and transparent manner, based on objective criteria and analysis. Balancing rules should minimise the residual physical balancing role of the TSO subject to the safe and economic operation of the network, and they should facilitate competition and avoid undue barriers to entry	Vector's considers its model is consistent with this principle: • The model is fair, non-discriminatory (except as required and appropriate for risk mitigation purposes), and transparent. • The model clarifies that the primary responsibility to balance lies with Shippers, with the remaining balancing requirements will be dealt with under the residual role. • It endeavours to avoid undue barriers to entry by recognising the metering and information capabilities of Small Stations relative to Large Stations, and providing a workable means to deal with this, while still avoiding cross-subsidisation.
Principle 3 – Frequency of balance: The choice of an appropriate balancing period needs to consider a number of objective criteria [detail omitted]. Daily balancing is preferred unless hourly balancing is needed for operational reasons. Shippers should not be exposed to undue risks that they cannot manage or inefficient costs that create a barrier to entry. However, where it is not possible to provide appropriate information and access to flexibility within the balancing period, then the users risks should be mitigated in some way (eg tolerances or through imbalance charge limits)	Vector's proposed model is consistent with this principle, proposing daily balancing be used. It uses incentives based approaches to encourage self-balancing to an economic level, and provides assistance for Small Stations to mitigate risk that cannot be self-managed cost effectively.

ERGEG Principles (with proposed amendments)	
Principle 4a - Balancing costs and incentives for the TSO: While TSOs should have commercial incentives to ensure residual balancing actions are efficient~~. TSOs should,~~ it should not be assumed that TSOs should also procure flexibility. <u>This role may be more efficiently managed by a BA. Flexibility should be procured</u> in a transparent and non-discriminatory manner using market based mechanisms where possible	Vector's proposed model promotes this principle. • The model does not propose an approach to undertaking balancing actions, other than to suggest that a full range of tools should be available to it. However, it agrees that the Balancing Agent should have commercial incentives to ensure that costs of balancing actions and operational costs are efficient, and considers this would be consistent with the model it has proposed. • The model also proposes transparency of costs of balancing actions.
Principle 4b - Charges for imbalances: Imbalance charges should not result in a distortion of competition and/or trading in wholesale, storage and flexibility markets. Imbalance charges shall be, as far as possible, cost-reflective, whilst providing appropriate incentives on network users to balance their position such that, in aggregate, the participants face strong incentives to physically balance the system in an efficient way. Balancing and operation costs should be charged to causers. Any costs that can't be targeted to causers should be allocated back to users in a non-discriminatory manner	Vector's proposed model is consistent with this principle: • It focuses is on causer pays, cost-reflective imbalance charges to the extent possible and, while it treats Large Stations and Small Stations differently, avoids cross-subsidisation between network users and does not hamper the entry of new market entrants. • The incentives provided by this allocation of costs collectively provide strong incentives for efficient physical balancing, and avoid inefficient balancing actions by clarifying the roles of various parties.
Principle 4c – Trading of imbalance positions: Where flexibility tools, information, or a well functioning/liquid within-day market are not available, then other mechanisms should be introduced to allow users to manage their positions including ex-ante trading, pooling of imbalance positions, and ex-post trading <u>provided this is cost-effective</u>	Vector's proposed model is not inconsistent with this principle: • The introduction of mechanisms to allow market participants to manage their positions effectively is not specifically included in the model, as Vector considered this a second-order consideration; However, Vector supports such developments where cost effective to do so, and the model it has developed does not preclude such developments in any way.
Principle 5 – Tolerance services: Tolerance levels weaken balancing incentives and should only be used where access to flexibility or information is such that risk mitigation is necessary	Vector's proposed model is not inconsistent with this principle: • It proposes that no tolerances be allowed, but does provide an alternative mechanism to allocate available linepack flexibility to Small Stations which require a

ERGEG Principles (with proposed amendments)	
to ensure that barriers to entry and competition are not created. As markets develop it should be possible to reduce (and minimise) the size of tolerance levels. Where offered, tolerance levels should reflect the technical capabilities of the transmission system, but arrangements should avoid situations where users cause balancing costs that are subsequently socialised. The secondary trading of tolerances should be facilitated by TSOs	degree of risk mitigation to avoid creating barriers to entry and competition. • As it does not propose to have tolerances, no secondary trading is required. In any case, linepack flexibility is to be used for the benefit of those least able to manage their imbalance positions. • The aggregate flexibility utilised by Shippers will be consistent with technical capabilities of each pipeline, as determined by the relevant TSO.
Principle 6 – Information and transparency: TSOs shall provide sufficient, well-timed and reliable on-line information on the balancing status of network users, reflecting the level of information available to the TSO *Information should be provided to all participants in a format which is meaningful, quantitatively clear, and easily accessible. Where necessary TSOs shall use provisional allocations in the calculation of imbalance charges to reduce the risk for shippers*	Vector's proposal supports the provision of information to Shippers, where this assists them to efficiently manage their imbalance positions. Contrary to the principle, it does not propose provisional allocations of balancing costs. However, Vector believes that the improved information availability and greater incentives for balancing should enable Shippers to Small Stations to determine their position during the month with greater accuracy than is currently the case. This could be further enhanced with daily downstream allocation. In addition, Small Stations are allowed a safe harbour which will reduce the quantum of balancing actions allocated to them.
Principle 7 – Harmonisation of balancing rules: TSOs should ensure compatibility of balancing regimes to facilitate gas trade across different TSO systems. TSOs shall endeavour to harmonise balancing regimes and streamline structures and levels of balancing charges in order to facilitate trade	Vector's proposed model is consistent with this principle. It: • Proposes a single Balancing Agent operating across all pipeline Zones. • Improves the consistency of roles, obligations and cost allocations across the pipeline systems.
Principle 8 – Provision of flexibility: A balancing regime needs to provide an appropriate balance of risk and incentive for market participants to manage their imbalance positions to avoid barriers to entry and competition. Flexibility services and tools should be made available on a non-discriminatory basis reflecting the underlying technical characteristics of the	Vector's proposed model is broadly consistent with this principle. • While it could be argued that the flexibility services (in the form of the 'safe harbour' for Small Stations) are discriminatory, Vector considers this to be justified on the basis of addressing the limitations faced by Small Stations. • The available flexibility will be based on the technical characteristics of the pipeline in each Zone.

ERGEG Principles (with proposed amendments)	
transmission system. Market participants should have access to appropriate flexibility tools (including the associated information) to manage their risks efficiently (eg provision of linepack on an unbundled basis)	