

Information Paper

Introduction and Purpose

Gas Industry Co now has three years experience of policy development. During this time we have received a number of submissions on our processes as well as substantive policy issues. As a result, Gas Industry Co has carried out over the past few months a comprehensive review of its policy development process, both to ensure that the process reflects best practice and to take account of the experience gained since our establishment.

The main outcome of the review is a revised set of processes and policy approaches for internal guidance. However, we think it would help the process of consultation on future policy projects if our updated approach was set out and explained for industry information. Amongst other things, this would reduce the need for submissions to comment on general and process issues, and provide a tighter focus on the particular policy project. We have accordingly produced this information paper.

The Gas Act enables Gas Industry Co to recommend to the Minister of Energy that he make rules or recommend regulations for governance of the gas industry. Rules and regulations must be for the purpose of achieving the objectives in section 43ZN of the Act and in the GPS issued under section 43ZO of the Act. However, regulations and rules are the most formal means of achieving gas governance. The effect of the co-regulatory model under which Gas Industry Co operates is that other less formal means of achieving gas governance objectives may also be explored, particularly where mandatory compliance is not required.

The process for recommending rules and regulations to the Minister is set out in sections 43I to 43P of the Act, and for the Minister to make rules in sections 43Q to 43R of the Act. The process set out in the Act is quite explicit and includes the following stages:

- Identifying the reasonably practicable options for achieving the objective of the rules or regulations (s43N(1)(a));
- Assessing those options (ss 43N and 43Q(3));

- Consulting with potentially affected parties including giving the opportunity to make submissions and the consideration of those submissions (s43L(1)); and
- The forwarding of a recommendation to the Minister.

Where practicable, Gas Industry Co follows a similar process for considering non-regulatory governance arrangements, including making a formal recommendation to the Minister. (Different processes are followed where the output is advice to the Minister on matters affecting the gas industry.)

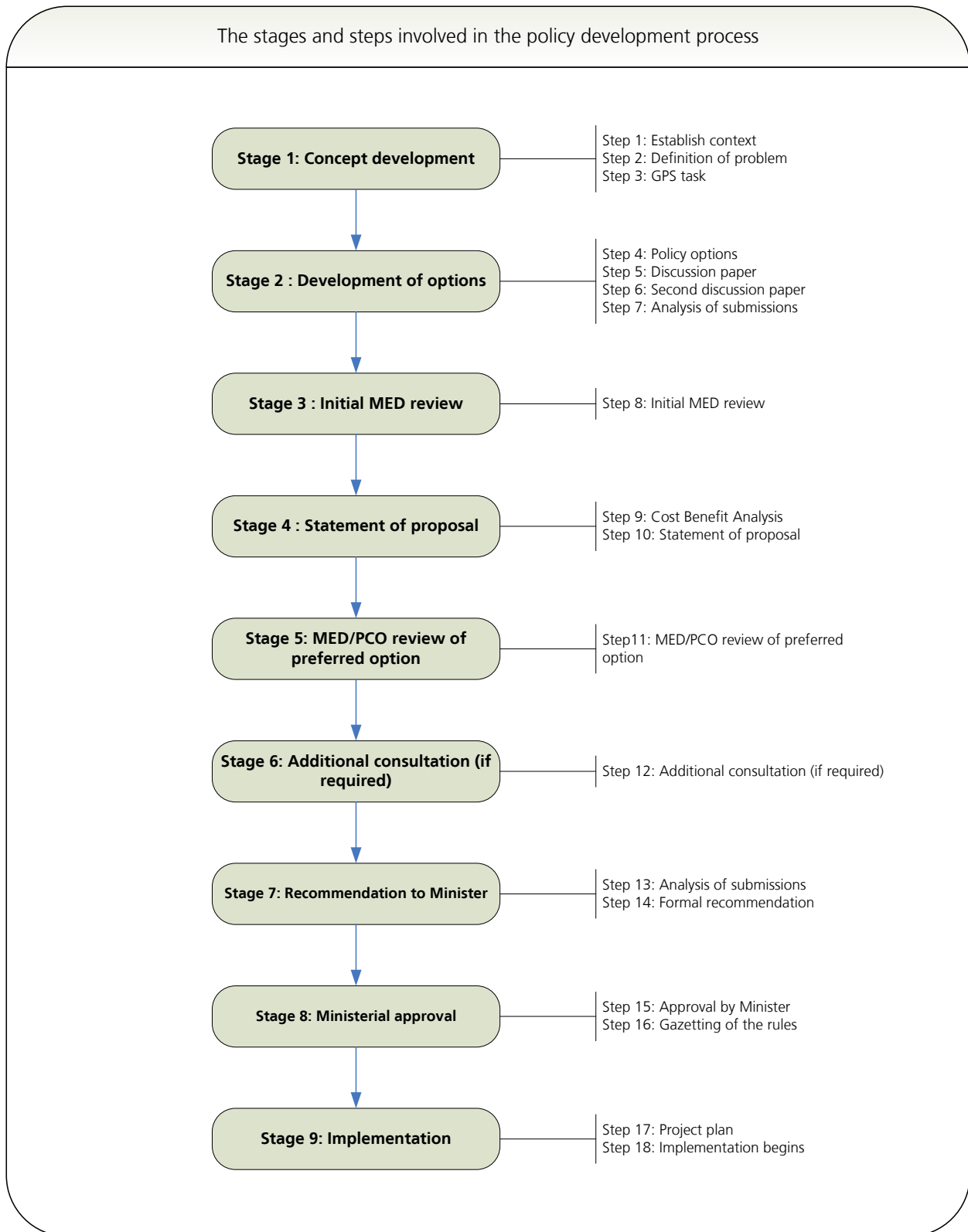
Overall policy development process

The overall policy development and implementation process has been extended and redefined. These modifications take account of the content of industry submissions and Board discussions since the establishment of Gas Industry Co.

The key points are as follows:

- The policy development process has been explicitly extended to include the incorporation of work on establishing the context for policy development, defining the problem to be solved, and managing the interaction between this and any specific tasks in the GPS.
- A staged approach to policy development is to be followed. The first stage focuses on concepts and the high level description of options, while subsequent stages provide the necessary detail for full assessment. However, the stages are interlinked so that the connection between high level concept and policy detail is kept visible.
- Options for gas governance range from full regulation to contractual arrangements. All practicable options should continue to be considered, but guidelines are provided for applying the statutory test for the consideration of contractual (non-regulatory) solutions.
- The process sets out key points at which interactions should occur with MED and PCO, to ensure timely input on any legal difficulties with likely or proposed solutions.
- The existing principles for cost allocation are reconfirmed. An approach to systematically applying these principles to particular cases is set out.
- An improved consultation process is set out including a clearer statement on consultation requirements, revised timelines, and more attention to planning.
- A comprehensive approach to policy implementation will be ensured by requiring the development and approval of an implementation project plan. Details of implementation planning are not included in the present information paper.

The process can be conveniently divided into 9 major stages. Within some stages there are a number of steps. This is illustrated below:



Stage 1: Concept development

Concept development

Step 1: Establish context
Step 2: Definition of problem
Step 3: GPS task

Step 1: Establish context

Establishing the context for policy development includes consideration of:

- the nature of the existing market structure, the effectiveness of the existing market arrangements, issues arising from market deficiencies that point to the need for a pan-industry solution, the development of the market itself having regard to factors such as the size of the market, and the strategic direction of change;
- the relevance to the objectives, outcomes and tasks set out in the Gas Act, the GPS and Gas Industry Co's Strategic Plan (if the issues lie outside this scope then a decision to proceed beyond this step will lie with the Gas Industry Co Board); and
- interactions with other Gas Industry Co work streams, and with related work by other agencies.

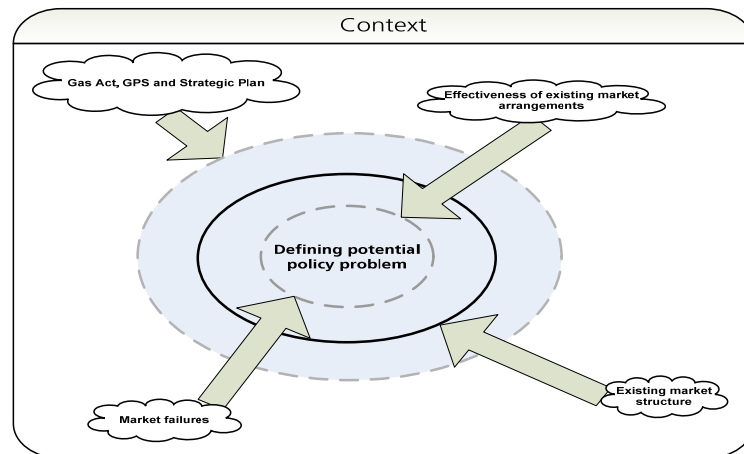
Gas Industry Co's position on statutory and GPS objectives:

Gas Industry Co's position on the statutory and GPS objectives is as follows:

- The objectives, outcomes and tasks set out in the Act and in the GPS, especially the tasks in the GPS, are a very clear statement of work priorities for Gas Industry Co.
- The GPS defines high level outcomes (which are largely but not wholly common with the objectives in the Act) and specific tasks. The outcomes are sufficiently high level to not be a significant constraint on the policy development process. The appropriate approach is to explore issues and possible problems in giving effect to these outcomes – in the absence of any other guidance.
- The tasks in the GPS are quite explicit. There would need to be compelling reasons for Gas Industry Co not to pursue these tasks as specified.

Step 2: Definition of problem

The policy problem to be addressed needs to be defined in lay terms and in terms of the nature of the market failure. Problem definition should be informed by analysis of the context where the cause of the problem is explained and analysed, and its relationship with the wider operation of the gas markets is described. Statutory and GPS objectives are also a part of that context as the market failure may relate to the achievement of efficiency, social or environmental outcomes.



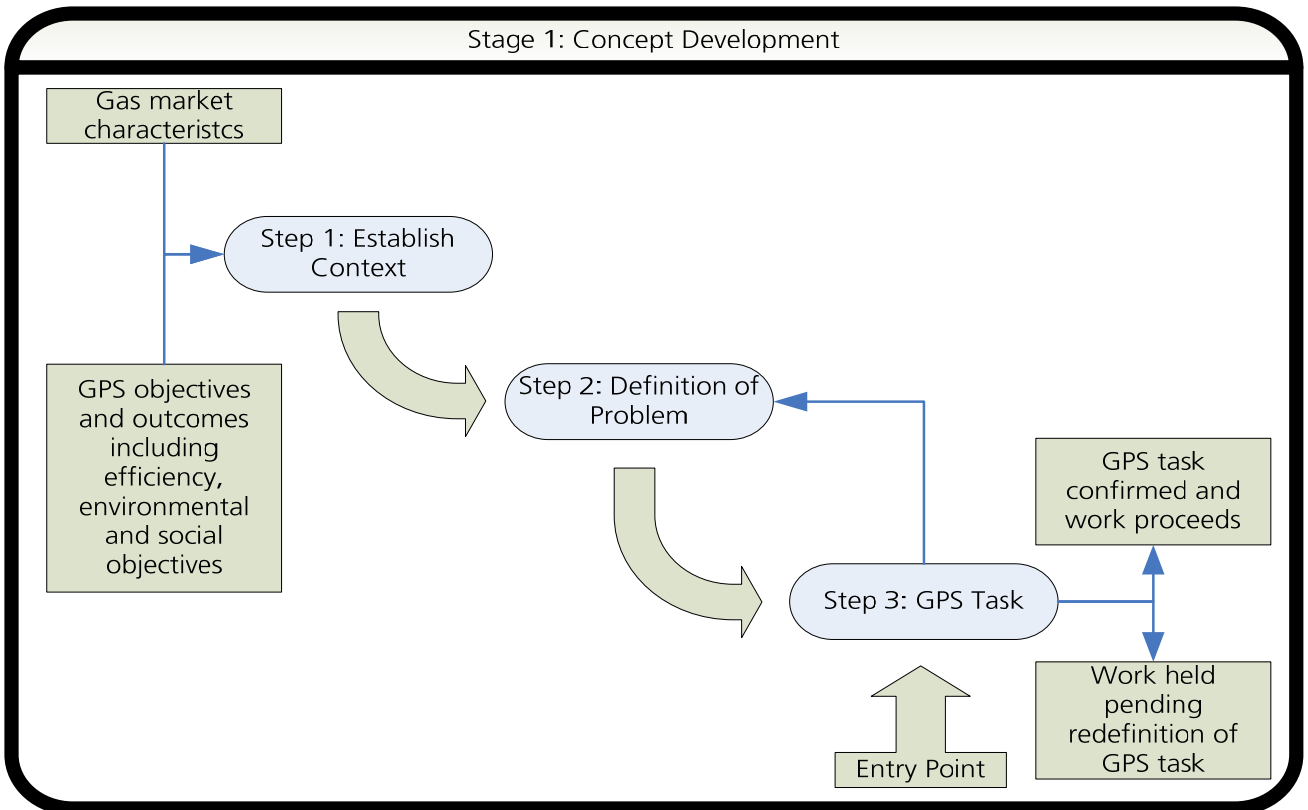
Step 3: GPS Task

When work in an area covered by a GPS task is being contemplated, then the GPS task is a parallel starting point for the policy development process. The following process will be followed:

- The GPS task will be reviewed against the context, i.e. the underlying gas market issues, and the problem defined. If the rationale for work in the area defined by the task is confirmed the process proceeds to step 4.
- If the contextual analysis and problem definition indicates a serious flaw with the framing of the GPS task, then the options are:
 - Defer any further work, either indefinitely or pending the periodic reissue of the GPS subject to any necessary agreement from the Minister.
 - In exceptional circumstances, propose to the Minister an immediate revision of that task in the GPS.

Note: The circumstances would need to be compelling to do other than proceed with the implementation of the GPS task.

This approach is illustrated by the diagram below:



Stage 2: Development of options

Development of options

Step 4: Policy options
Step 5: Discussion paper
Step 6: Second discussion paper
Step 7: Analysis of submissions

Step 4: Policy options

All feasible high level policy options from non-regulatory to regulatory should be identified, unless a GPS task already defines the acceptable options.

Gas Industry Co position on contractual versus regulatory options:

Gas Industry Co does not consider that the co-regulatory model implies a preference for contractual (non-regulatory) solutions. Both contractual and regulatory solutions will be considered in the first instance. The following provides some guidance on when a contractual (non-regulatory) solution may be preferred:

- The contractual option is estimated to be more cost-effective than the other practicable options available (to establish this all practicable options need to be considered) and is capable of being implemented within the time frames agreed with the Minister in the Strategic Plan.
- The contractual option has an effective level of industry commitment. In some cases this may require a commitment of 100% of all involved industry participants while in other cases a level of commitment less than this might be acceptable when it can be demonstrated that the option will still be fully effective at this lower level of commitment.
- The detail of the proposed intervention is expected to evolve rapidly after the start of implementation (frequently or where interests are common contracts can be adjusted more rapidly than rules and regulations).

Step 5: Discussion Paper

Board approval will be sought for the release of an initial discussion paper which incorporates the outcomes of steps 1 to 4 and invites submissions. Submissions will be allowed a wide scope. Four weeks will be allowed for consultation on a discussion paper. Gas Industry Co's policy on consultation is detailed at "Attachment A".

Gas Industry Co's approach to the assessment process at the early discussion stage, i.e. before a formal statement of proposal is developed, will be focused on concept rather than detail:

- The options examined will represent significantly different approaches to dealing with the "problem". Gas Industry Co will also seek extensive involvement from the industry at the options definition stage.
- The justifiable depth of analysis in order to reach a robust conclusion, particularly if hard data is lacking, will be progressively dealt with in the policy development process. In general, there will be a progression from concept to detailed analysis as the process moves from discussion paper stages to the statement of proposal.

Accordingly, Gas Industry Co will follow a more explicit two phase approach to development and consultation to ensure that industry participants get a sense of the detailed implications at the concepts/principles phase, and are reminded of the underlying concepts/principles at the detailing of options phase. The following approach will be applied:

- the first phase sets out at high level options for addressing the defined problem, with only sufficient fleshing out of the detail to enable industry participants to provide a robust response; and
- the second phase provides more detailed assessment as required by the Act, but is restricted to a more limited range of options based on first stage feedback. This second stage might come before, or be merged with, the statement of proposal, depending on how clear cut the conclusions are from the first stage.

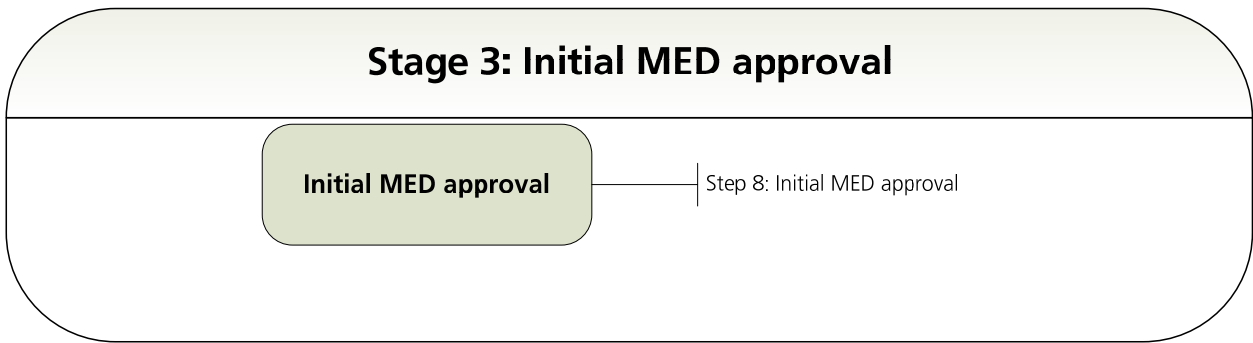
Step 6: Second discussion paper

If necessary, and subject to Board approval, Gas Industry Co may decide to release a second discussion paper which redefines the options for consideration and provides a more detailed analysis of the options. This process will use the assessment framework provided in the Act. Submissions should have a narrower scope at this point, i.e. focused on selecting preferred options.

Note: In straightforward cases it may be appropriate to skip this step and go straight from step 6 to step 8

Step 7: Analysis of submissions

Following the receipt of submissions on discussion paper(s) Gas Industry Co will prepare an analysis of submissions for the Board to consider. This is likely to lead to the selection of a preferred option. The analysis of submissions will be made available to all submitters and will be made publicly available by posting on the Gas Industry Co website.



Step 8: Initial MED approval

An initial MED review and endorsement of the development to this point will be sought. This will include a review to ensure that development at this point is consistent with the GPS and that any high level legal issues are identified e.g. vires issues with possible solutions. This is the first formal checkpoint with MED. However, informal liaison will be maintained throughout the policy development process.

Stage 4: Statement of proposal

Statement of proposal

Step 9: Cost benefit analysis
Step 10: Statement of proposal

Step 9: Cost benefit analysis

Gas Industry Co will undertake a cost benefit analysis (CBA) as required by the Gas Act as part of the assessment process. Subject to Board approval the CBA assumptions will be incorporated into the assessment process in the statement of proposal.

Gas Industry Co position on cost benefit analysis:

Gas Industry Co has developed a general CBA policy to enable a standard approach to be taken, and to provide a vehicle for determining the most appropriate approach for key aspects of the analysis. Gas Industry Co's CBA policy is attached as "Attachment B".

Step 10: Statement of proposal

A formal statement of proposal for consultation will be released subject to the approval of the Board. The statement of proposal will contain a preferred option and at least (other options may be included as well) a “counterfactual” i.e. a substantially different approach included for comparative purposes. The analysis will follow the assessment process set out in the Act.

As well as defining a preferred option the statement of proposal will state how the cost of implementing the proposal will be funded i.e. from whom and on what basis. Gas Industry Co’s policy is for implementation costs to be funded by special fees. Where the proposed solution is a regulation or rule the funding arrangements will be set out in the regulations or rules.

When appropriate, the statement of proposal will contain a draft of the proposed rules or regulations. Six weeks will be allowed for consultation on a statement of proposal.

The statutory assessment process:

The process for the identification and assessment of regulatory options is set out in section 43N(1) of the Gas Act. Gas Industry Co practice is to act in accordance with the Act irrespective of whether regulatory or non-regulatory options are being proposed. The Act requires that Gas Industry Co:

1. seek to identify all reasonably practicable options for achieving the objective of the regulation; and
2. assess those options by considering-
 - (a) The benefits and costs of each option.
 - (b) The extent to which the objective would be promoted or achieved by each option
 - (c) Any other matters that the industry body...considers relevant.
3. ensure that the objective of the regulation is unlikely to be achieved by any other reasonably practicable means other than the making of the regulation; and
4. prepare a statement of proposal for the purpose of consultation under section 43L(1).

Step 10: Statement of proposal (continued)

Gas Industry Co's position on cost allocation:

Regulatory solutions to market problems will have costs external to gas industry participants. An essential part of the process is to determine how these costs should be allocated and to whom. The principles for cost allocation are, in summary:

- Economic efficiency
- User (beneficiary)/causer pays
- Rationality
- Simplicity
- Equity
- Revenue sufficiency.

The process for applying these principles is as follows:

- The principles that are applicable to the situation being analysed should be identified.
- The relative significance (or weighting) of the principles should be determined. It is important that this is initially done before considering solutions, so that weightings are not influenced by a specific desired outcome.
- Alternative solutions or potential outcomes should be assessed against the applicable principles and an overall assessment made taking weightings into account. It is sufficient for this to be done qualitatively, although quantitative scoring can be adopted if desired.
- A preferred outcome should be chosen and characterisation against the principles confirmed. If the choice implies a shift in the weighting of the principles, then this should be acknowledged and the reasons for the shift explained.

Gas Industry Co's position on the funding of implementation:

Implementation often involves two phases of activity: firstly, development and establishment (e.g. creation of IT platforms for implementation and appointment of service providers for related functions), and secondly, ongoing operations.

Gas Industry Co's approach to funding the development and establishment component of implementation costs is:

- Where development and establishment costs are relatively low, and/or largely internal to Gas Industry Co, the cost should be funded by the general levy. Possible benchmarks are \$50,000 and 75% respectively, although these benchmarks are to be taken as a guide only.
- Where the costs are substantial, e.g. above the benchmark suggested above, they should be funded through a dedicated development fee. However, within this there might sometimes be scope to negotiate with the chosen developer to apportion development costs between upfront and ongoing charges to provide an optimum solution for all parties.

Gas Industry Co's approach to funding ongoing costs is to fund these through a dedicated ongoing fee.

A dedicated fee is preferred for on-going costs for the following reasons:

- The fee can be more transparently and directly linked to the costs and parties involved, and amongst other things, this would enable a more obvious comparison with the monetary benefits of the arrangement
- Because on-going costs will extend over several years at a relatively stable level, dedicated fees are a better match to the requirements than the gas levy, which must be separately regulated for each year.

Stage 5: MED approval of preferred option

MED approval of preferred option

Step 11: MED approval of preferred option

Step 11: MED/PCO approval of preferred option

A formal check with MED (and where regulations are involved, PCO) on the legal acceptability of the proposed solution, including the proposed rules or regulations, will be undertaken. This should be completed prior to step 13 and may need to include revised solutions developed as a part of step 12.

Stage 6: Additional consultation (if required)

**Additional consultation
(if required)**

Step 12: Additional consultation
(if required)

Step 12: Additional consultation if required

A further consultation round may be required if consideration of the submissions on the statement of proposal results in substantial changes to the proposed solution. In this event the modified solution will be issued in the form of a decision paper.

There may be occasions when technical changes are made as a result of consultation on the statement of proposal. Under these circumstances, where technical changes do not alter the policy basis for the solution, options other than full and formal consultation may be adopted. For example, the issue of an updated proposal followed by an industry workshop may be sufficient, as in the case of downstream reconciliation.

Stage 7: Recommendation to the Minister

Recommendation to the Minister

Step 13: Analysis of submissions
Step 14: Formal recommendation

Step 13: Analysis of submissions

An analysis of submissions will be provided to the Board together with a recommended policy solution. A draft recommendation to the Minister may also be included for Board approval.

Step 14: Formal recommendation

A formal recommendation will be provided to the Minister. Ministerial approval will be sought if a regulated solution is proposed, and Ministerial endorsement if a non-regulatory solution is proposed. The recommendation should include:

- The proposed solution and the reasons for the choice;
- A summary of the assessment process and result;
- The process and results of consultation on the proposal;
- The proposed rules or regulations (if a regulatory solution is proposed);
- A summary of the proposed implementation plan.

The recommendation should be simultaneously made available to stakeholders for their information.

Stage 8: Ministerial approval

Ministerial approval

Step 15: Approval by Minister
Step 16: Gazetting of the rules

Step 15: Approval by Minister

The Minister will approve the proposed solution, based on the recommendation put forward and advice from MED. If the proposed solution is regulations then Cabinet approval is required as well as finalisation of the drafting of the regulations by Parliamentary Counsel (PCO).

Step 16: Gazetting of the rules

The rules or regulations are gazetted and come into effect after 28 days.

Stage 9: Implementation

Implementation

Step 17: Project plan
Step 18: Implementation begins

Step 17: Project plan

A formal implementation project plan will be established. The key elements of the plan will include programme milestones and schedule, key decision points, and reporting commitments.

Gas Industry Co position on implementation project plans:

The details of policy implementation will vary from case to case, but a standard approach helps in ensuring that the implementation process is well constructed and comprehensive. The following elements need to be considered in all cases:

- statement of clear objectives for the implementation;
- definition of key deliverables;
- detailed implementation programme and timetable;
- management of implementation risks;
- governance arrangements including management, reporting and communications;
and
- resourcing.

These elements should be brought together in a formal project plan, which is compiled by the responsible work stream leader and signed off by the project sponsor. The project sponsor will normally be the Chief Executive.

Step 18: Implementation begins

Implementation begins.

Note: The point at which implementation begins will depend on the circumstances of the case, but will in all cases be no later than the date at which any rules or regulations come into effect. In straightforward cases implementation might start when the recommendation is finalised for the Minister, i.e. in advance of formal approval.

Attachment A

Gas Industry Co policy on consultation

Introduction

1. Consultation on regulatory proposals is a requirement in section 43L(1) of the Gas Act. Gas Industry Co practice is to act in accordance with the Act irrespective of whether regulatory or non-regulatory options for new gas governance arrangements are being proposed.

Meeting consultation requirements

2. There is extensive case law around meeting consultation requirements and Gas Industry Co takes the view that consultation has to be sufficient to meet the commonly understood requirements. This means that if solutions are modified to a significant degree (most commonly as a response to submissions), then consultation must be repeated so that all those consulted have an opportunity to comment. However, this is sensibly constrained by:
 - Having a realistic threshold for what constitutes a “significant” modification.
 - Not repeating consultation on changes that are unavoidable for technical or legal reasons, unless there is a fundamental impact on the justification for, or character of, the solution. In cases like this it is sufficient to inform industry participants with ample notice, rather than consult.

Consultation Process

3. Consultation will be based on the issue of a written paper which may be a discussion paper or a statement of proposal. The paper will be published on Gas Industry Co’s website and also emailed to all potentially interested stakeholders.
4. Gas Industry Co’s forward planning should ensure that the scheduling of consultations across work streams is spread out as far as possible. A consultation plan for each year will also be published on Gas Industry Co’s website as part of its annual work programme planning process. If the issue of a consultation document is likely to differ from the date indicated in the consultation plan, advice of this will be given in the next available Gas Industry Co monthly update.
5. Submissions will normally only be accepted in electronic form. If submitters wish to submit in some other way, this must be agreed with Gas Industry Co beforehand.

6. Confidential submissions will not normally be accepted. All submissions received will be published on Gas Industry Co's website as soon as possible after the closing date. The analysis of submissions will also be available on the website soon after completion.
7. Consultation timelines will allow 4 weeks for discussion papers and 6 weeks for statements of proposal. However, there will still be the flexibility to shift those timings where warranted.
8. Gas Industry Co reserves the right not to accept late submissions
9. Gas Industry Co will normally hold a workshop for prospective submitters no more than two weeks after the issue of the consultation document. The purpose of these workshops is to exchange information – not to receive submissions.

Response to Submissions

10. The Gas Industry Co response to submissions will always be made available to submitters, through publication on the Gas Industry Co website. The responses may be a part of a formal recommendation to the Minister, or in another form, depending on the stage of the process.

Attachment B

Policy for Cost Benefit Analyses under the Gas Act

Introduction and Scope

1. Sections 43I to 43P of the Gas Act set out the process for the Gas Industry Co to make recommendations for gas governance rules or regulations. In particular these sections set out the processes for assessing and then consulting on a proposed rule or regulation, before a recommendation is made to the Minister. Sections 43ZN and 43 ZO also require Gas Industry Co to have regard to statutory and Ministerial objectives and outcomes, when making recommendations for gas governance.
2. This policy is concerned principally with one part of the overall process, that of carrying out a cost benefit analysis (CBA). The requirement to carry out a CBA is set out in Section 43N (1) of the Gas Act. Under that section Gas Industry Co must:
 - 2.1 Seek to identify all reasonably practicable options for achieving the objective of the regulation; and
 - 2.2 Assess those options by considering-
 - (a) The benefits and costs of each option.
 - (b) The extent to which the objective would be promoted or achieved by each option
 - (c) Any other matters that the industry bodyconsiders relevant.
3. This policy includes the interaction between CBA and the steps to: (a) identify reasonably practicable options for assessment (Section 43N (1)(a)); and (b) assess the extent to which each of those options meets the regulatory objective (Section 43N (1)(b)(ii)). These steps are strongly interlinked.
4. The primary reference for this policy is the Treasury Cost Benefit Analysis Primer¹. Material has also been taken from CBAs carried out for or by Gas Industry Co to date. Consultant input for these CBAs has come from CRA International, Concept Consulting and, in particular, NZIER.

¹ "Cost Benefit Analysis Primer" The Treasury, Wellington, New Zealand, December 2005.

The Definition and Scope of CBA for Gas Governance Recommendations

- Using the classical definition provided by Treasury¹, CBA is an economic assessment tool that enables the net benefits (or costs) of a proposal to be determined by quantifying all costs and benefits in monetary terms and discounting these to today's dollars. For gas governance recommendation purposes, the scope of CBA is extended to include qualitative analysis, leading to judgements rather than calculation of net benefits (costs), and CBA in this context is always comparative i.e. the aim of the analysis is to choose preferred options rather than to calculate an absolute result.

The Overall Process and Interlinking of Steps

- An iterative process should be initially applied to the following steps, and in the following order:

Step 1: Identification of reasonably practicable options.

Step 2: Assessment of the extent to which the regulatory objective will be met by the options identified.

Step 3: The carrying out of CBA on each option.

Step 4: Review of the options against the results from Steps 2 and 3 to select those that warrant continued consideration and to provide an opportunity for further or modified options to be considered.

- Iteration should continue until there is a stable outcome. The stable outcome must comprise at least two options – the preferred option, and an alternative practicable option (the “counterfactual”) which will normally be the “next best” option that can be clearly distinguished, i.e. that is not just a minor variation. The counterfactual should only be the status quo if this is genuinely an option for meeting the regulatory objective. However, the status quo is the default option if there is no alternative to the preferred option which meets the test in section 43N(1)(a).

Categories of CBA for the Purposes of Simplified Analysis

- Ideally both costs and benefits should be quantified so it is possible to carry the analysis through to a calculated net benefit (or cost). This is generally feasible for costs but often difficult or infeasible for benefits. If quantification of benefits is either infeasible or subject to very high levels of uncertainty, then a qualitative approach should be adopted. This leads to the following categories of CBA for analysis purposes:

Category A: Both costs and benefits are able to be quantified to a reasonable degree of certainty.

¹ “Cost Benefit Analysis Primer” The Treasury, Wellington, New Zealand, December 2005.

Category B: The determining benefits associated with the options either cannot be quantified or the estimates are subject to excessive uncertainty. Benefits which rely on market effects such as improved price efficiency or improved competition are likely to be in this category.

9. The CBA applied to category A situations should be quantitative leading to quantitative results.
10. In category B situations the following simplified approach can be adopted:
 - 10.1 Overall benefits are described in qualitative terms, including any minor (not determining) benefits which can be quantified. However, the description of benefits must clearly distinguish between the merits of the proposed and other options being assessed. In some instances it may also be appropriate to support the qualitative analysis with some case study or scenario calculations, e.g. calculations of the dollar impact of a set % decrease in price through efficiency gains.
 - 10.2 Cost should still be quantified if possible, but the test to be applied is a judgement as to whether differences in cost between the options are large enough to make the outcome of comparing net benefits significantly uncertain. If the outcome is that uncertain then the conclusion must be that the CBA analysis is indeterminate and that choices should be made on other grounds.

Guidelines for the Elements of CBA

Admissible Benefits and Costs

11. Following the Treasury Cost Benefit Analysis Primer, analysis should be undertaken from a national economic perspective. This sets aside the issue of where costs and benefits fall, e.g. benefits accruing to consumers through price reduction are not distinguished from benefits taken by suppliers through increased profit. However, if distributive effects are likely to be significant, this should be identified and discussed.
12. Analysis should be based on marginal rather than average costs and benefits.
13. The following items should be excluded from the costs and benefits considered:
 - (a) Financing/capital charge costs
 - (b) Depreciation
 - (c) Transfer payments, where there is no change in societal welfare
 - (d) Sunk costs.
14. Tax inclusive prices should be used but the analysis should be adjusted for tax if proposals being compared contain differences in tax treatment.

15. The following items should, in principle, be included in the analysis, but may be difficult to estimate. They should only be included in practice if they are considered to be sufficiently significant to potentially alter the choice of preferred option:
 - (a) Deadweight losses being the cost of a move away from a competitive position resulting from the imposition of a proposed regulation.
 - (b) Intangibles
 - (c) Externalities, i.e. cost and benefits borne by parties other than the direct participants in the area being analysed.

Period for Analysis

16. The period for the analysis should reflect the economic life of the regulatory system proposed. This may be as short as 5 years if, for example, the major regulatory cost is the development of a new IT platform. The default period is 10 years. Periods beyond this should not normally be selected particularly for market development initiatives. However, a longer period may be appropriate if long terms infrastructure is involved, eg arrangements for transmission access.
17. The same time period should be applied to all of the options being compared. The time period should be chosen to most accurately represent the preferred option. If other options being compared have costs and benefits that lie outside the chosen time frame then an adjustment should be made to represent residual costs and benefits at the end of the analysis period.

Identifying and Assessing Costs and Benefits

18. Costs and benefits can be monetary or non-monetary, qualitative or quantitative. The default preference is to state costs and benefits in monetary, quantitative terms. However, as indicated by paragraph 10 above, if quantitative estimates are likely to be very uncertain or hypothetical, a well reasoned qualitative analysis is preferable.
19. Because the analysis is comparative costs and estimates should be calculated from a defined baseline. This baseline may be the "counterfactual" or the status quo.
20. For **quantitative** estimates, the source of the estimating information should be identified and assumptions set out. If the estimates are uncertain, the degree of uncertainty should be stated. If there are risks associated with the cost or benefit, (or with the option being analysed as a whole) the risk should be briefly described and any resulting change to the estimate stated (see paragraph 25).
21. For **qualitative** assessment, the source of the cost or benefit should be stated and a description given of how the particular cost or benefit is generated. The size, uncertainty and risks of the

cost or benefit should be stated using a set of descriptors which is consistently applied across all costs and benefits and all options. A typical set of descriptors is as follows:

Negligible
Minor
Moderate
Large
Very large
Massive

22. For gas governance CBAs, at least the following categories of benefits should be considered. Other types of benefit may be applicable in particular cases:
- (a) Competitive benefits in the form of improved allocative efficiency, which may include pricing efficiency
 - (b) Competitive benefits in the form of improved productive efficiency
 - (c) Competitive benefits in the form of improved dynamic efficiency
 - (d) Reduced operating costs for participants
 - (e) Efficiency improvements for participants including reduced transaction costs
 - (f) Improved quality and timeliness of information.
23. For gas governance CBAs, at least the following categories of costs should be considered. Other types of cost may be applicable in particular cases:
- (a) Regulation development including planning and consultation.
 - (b) Regulatory platform development including any IT and software development required.
 - (c) Establishment costs for participants e.g. training, participant systems, data preparation
 - (d) Establishment costs for the Gas Industry Co
 - (e) Ongoing operating costs for participants
 - (f) Ongoing regulatory operating costs, including periodic review and updating of the regulations, monitoring and audit, and compliance.

Dealing with Uncertainty and Risk

24. Uncertainty and risk are different although they may be represented through similar mechanisms. Uncertainty is the result of insufficient knowledge or information (about an option, a cost, or a benefit) so that it is not possible to precisely and accurately state an outcome. Risk is

about the natural or inherent variability in events in the future and is normally represented by two parameters – probability of occurrence and magnitude of consequences.

25. In dealing with **risk** it is necessary to determine the “position on risk”, i.e. how risk-averse or how much of a risk-taker to be. For regulatory analysis a risk-averse position is appropriate. The default position is that risk should be taken account of by either or both of adding a contingency provision to costs, and taking a cautious (reduced) view of the benefits likely to occur. This analysis should be applied to all of the options, not just the preferred option. The results of doing this may not be obvious, e.g. if the “counterfactual” is considered to have considerable risk, the relative benefits of the preferred option might increase.
26. There are several techniques available for dealing with **uncertainty** and they include sensitivity analysis, scenario analysis and Monte Carlo analysis. Monte Carlo analysis is a sophisticated technique requiring more extensive data than is generally available for gas governance CBAs. However, both of the first two techniques may be applicable.
27. **Sensitivity Analysis** is applied by varying the values of costs and benefits and other parameters, either individually or collectively, and recalculating the overall or net benefit. The extent of variation is normally represented by a plus and minus percentage on the ‘expected’ value. Sensitivity analysis is only applicable to quantitative analysis. In this regard:
 - (a) Sensitivity analysis should always be applied to the discount rate (see paragraph 32)
 - (b) Sensitivity analysis on costs and benefits should preferably be applied collectively i.e. modifying both costs and benefits at the same time, effectively creating a small number of scenarios
 - (c) The basis for the chosen variations should be explained.
28. **Scenario Analysis** is applied by defining a small number of scenarios which represent possible variations in outcomes due to uncertainty or risk. In this regard:
 - (a) The default approach is to have three scenarios – base, optimistic and pessimistic. (An optimistic scenario would have relatively high benefits and low costs)
 - (b) The preferred approach (that is more likely to inform quality decision-making) is to supplement the base scenario with alternative scenarios which represent significantly different but plausible variations in circumstances from the base scenario but which are not necessarily either optimistic or pessimistic
 - (c) Whatever the approach taken the basis for each scenario should be explained
 - (d) Scenario analysis is the required approach for all Category B CBAs (see paragraph 8).

Overall Evaluation including Discounted Cash Flow Analysis and the Discount rate

29. If the major benefits (most usually) or costs require qualitative estimation, then the overall evaluation of net benefit (cost) will also be qualitative. The qualitative estimation of net benefit (cost) should use the same set of descriptors as is used for qualitative estimation of costs and benefits (see paragraph 20).
30. Quantitative estimation should be based on the calculation of net present value (NPV) generated from discounted cash flow analysis.
31. The default discount rate to use for discounted cash flow analysis is 10% per annum. This is the standard Treasury rate. If an alternative discount rate is preferred the rate should be stated and the reasons explained.
32. Sensitivity testing should be carried out using rates of 6% (the social rate of time preference to reflect a public policy perspective) and 12% (the general weighted average cost of capital reflecting a commercial perspective).

Presentation of Results

33. A guideline format for presenting the results of CBA is set out below. This format assumes that the CBA forms a part of a Statement of Proposal for a proposed Regulation. Additional explanatory material may have to be added if the CBA is a stand alone document.

Guideline Format

Assessment of Reasonably Practicable Options

Statutory Requirements

Description of the Reasonably Practicable Options Selected for Assessment

Cost Benefit Analysis of Options

Methodology

Estimation of Costs, Benefits, Uncertainty and Risk for Each Option

Overall Assessment of Net Benefit (Cost) for the Base Case/Scenario for the Options

Scenario/Sensitivity Analysis

Conclusion from Cost Benefit Analysis

Assessment of Extent to which Options Achieve the Regulatory Objective

Assessment of Options Against Other Relevant Matters

Overall Results of Assessment

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