

Decision-making and economic framework for distribution pricing methodology review

Consultation Paper

7 May 2012

Executive summary

Introduction

1. The Electricity Industry Act 2010 (Act) provides for the Electricity Authority to amend the Electricity Industry Participation Code 2010 (Code) to determine the pricing methodologies applied by distributors.
2. The Authority has in place a regulatory framework for oversight of distributors' pricing methodologies, originally put in place by the Electricity Commission in 2010, which consists of:
 - (a) The pricing principles, which are voluntary and intended to guide distributors in developing their pricing methodologies;
 - (b) Information disclosure guidelines (guidelines), which specify the information that distributors should provide in relation to their pricing methodologies; and
 - (c) Regular reviews of distributors' pricing approaches, which would include use of objective scoring criteria, to determine the extent to which the outcomes sought were being achieved.
3. Because the pricing principles and guidelines were developed under the Electricity Act 1992 rather than the Electricity Industry Act 2010 the Authority considers it should confirm that the pricing principles and guidelines align with the Electricity Industry Act and, in particular, the statutory objective. This is "to promote competition in, reliable supply by, and the efficient operation of, the electricity industry for the long-term benefit of consumers."¹
4. The Authority has decided to develop an economic framework that is consistent with its statutory objective that it intends to use as the basis for making decisions in relation to distribution pricing.
5. This purpose of this paper is to describe and consult on:
 - (a) the application of the statutory objective with respect to distribution pricing;
 - (b) the economic framework that the Authority proposes to use to assess distributors' pricing methodologies; and
 - (c) the Authority's assessment of the distribution pricing principles in light of the proposed application of the statutory objective and economic framework for distribution pricing.

¹ Electricity Industry Act 2010, section 15.

Decision-making framework

6. Consistent with its interpretation of the statutory objective, the Authority considers that decision-making about distribution pricing should focus on promotion of efficiency of the electricity industry for the long-term benefit of electricity consumers. This focus on efficiency recognises that competition is an important tool to promote efficient outcomes, and that measures that impact on reliability outcomes should encourage efficient trade-offs between the costs and benefits of reliability.
7. Efficiency refers to both efficient use of distribution networks and efficient investment in the electricity industry, including in distribution and transmission networks, generation and demand-side management:
 - (a) Efficient use of distribution networks focuses on least cost production and charging customers the efficient marginal costs of production; and
 - (b) Efficient investment focuses on lowest cost development of the industry over time.

Economic framework

8. The Authority's preliminary view is that distributors should use pricing methodologies that give preference to market-based distribution charges, wherever such charges are efficient and it is practicable to implement them.
9. By a market-based approach to charges the Authority means either charges established by the interaction of buyers and sellers in a workably competitive market or charges which are likely to mimic or replicate such charges. The Authority's preliminary view is that charges established by the interaction of buyers and sellers should be preferred over charges seeking to mimic or replicate such charges.
10. The main market-based mechanisms applicable to distribution pricing are long-term contracting and contracting for the capital costs of connection to distribution networks.
11. The preliminary view of the Authority is that where an administrative approach to setting distribution charges is necessary:
 - (a) the first preference should be for charges that apply to exacerbators and the second preference should be for charges that apply to beneficiaries;
 - (b) users of assets should only be targeted as a proxy for beneficiaries. The Authority notes that when use is voluntary it is reasonable to assume users are beneficiaries, although their benefit may not exceed the costs of provision if they are not being charged; and
 - (c) a related party that is not an exacerbator or beneficiary (e.g. the retailer rather than the consumer) should only be targeted when it is clear that it will pass the

economic impact of the charge on to exacerbators or beneficiaries, as the case may require.

12. Making exacerbators face the costs of their decisions would mean the good or service is only provided when the benefits exceed the costs to exacerbators, and so improves the performance of the economy as a whole by reducing wasteful activities.
13. Charging beneficiaries only ensures that those that would be willing to pay are required to do so. If use is not voluntary, the user may not be a beneficiary.

Exacerbators pay

14. Under exacerbators pay, the party or parties whose actions or inactions led to the cost in question is responsible for mitigating that cost. To ensure exacerbators have incentives to make efficient decisions, in theory the price they should face should be based on the long-run marginal cost (LRMC) for the network of their actions or inactions. However, the implementation of pricing based on LRMC is not straightforward in practice. In particular, efficient augmentation of a distribution network may be “lumpy”, in which case the LRMC is likely to fluctuate over time.
15. Alternatively, exacerbators should be charged a price based on long-run incremental cost (LRIC). In the context of exacerbators pay, LRIC is the additional cost of augmenting the network, over and above that already planned, because of an exacerbator’s actions or inactions.
16. Applying an exacerbators pay approach requires a methodology for identifying exacerbators that can be applied reasonably consistently over time and across a distribution network. This is to ensure that all parties face equivalent incentives to act efficiently so that the efficiency benefits of applying an exacerbators pay approach are obtained throughout the network.
17. As with other charging approaches, before applying exacerbators pay it would be important to confirm that the resulting charge is efficient.

Beneficiaries pay

18. A beneficiary can be defined as a party for whom the private benefits of the investment proceeding exceed its share of the costs, and would therefore be willing to pay if that were the only means by which they could acquire the benefit.
19. Applying a beneficiaries pay approach requires a reasonably robust method for identifying beneficiaries that can be applied consistently over time and across a network. The benefits of improved investment efficiency and durability will be compromised if beneficiaries cannot be cost-effectively and clearly identified.
20. Ideally, the price that should apply to beneficiaries should reflect the lesser of the charge which will fully recover the costs of the network being paid by beneficiaries and

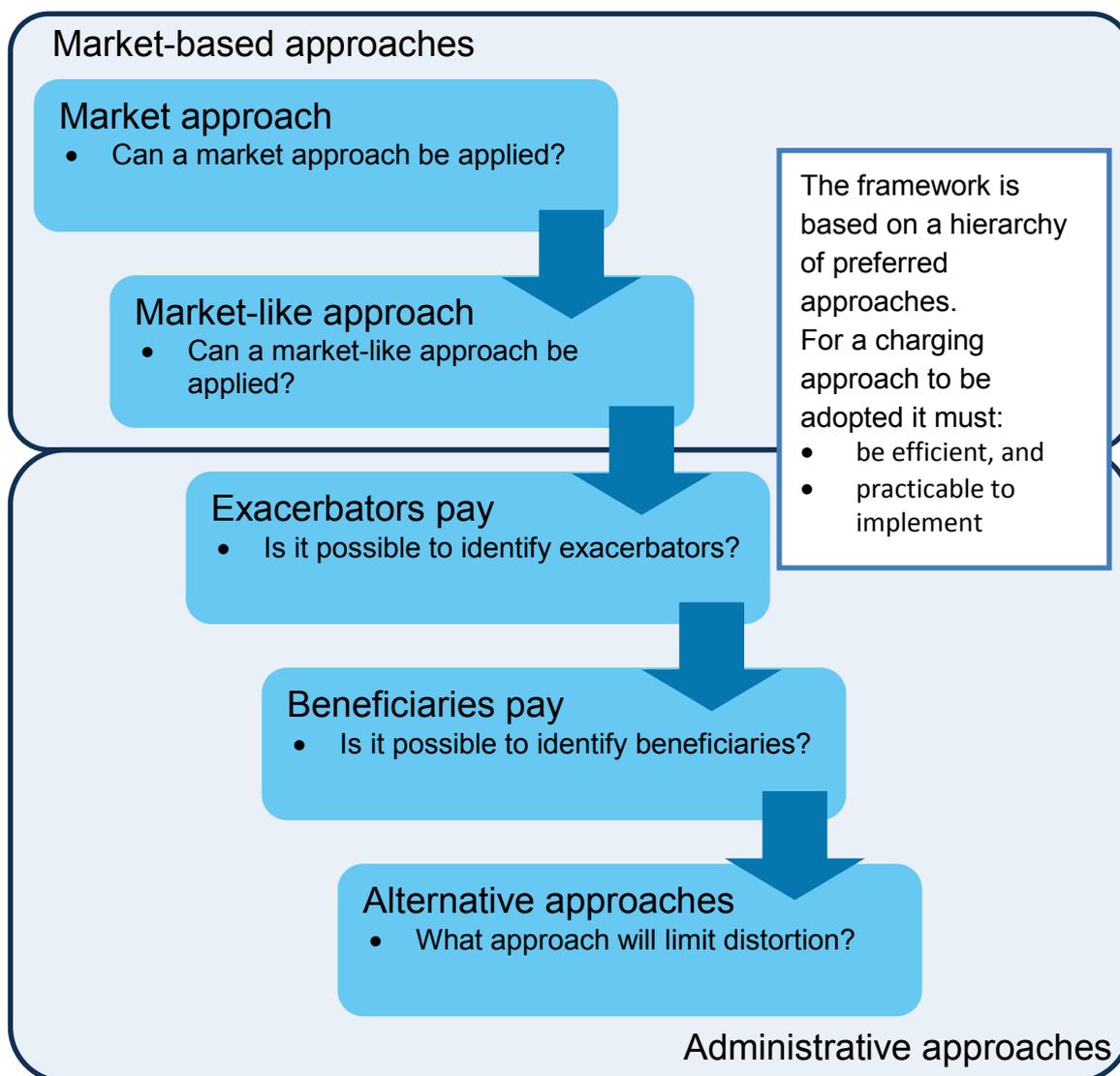
the anticipated (*ex ante*) value to them from the services provided by the network. It is preferable that the cost allocation to beneficiaries is fixed at a point in time, as this avoids the problem of the method of cost allocation influencing their use of the asset.

21. Application of beneficiaries pay requires a method for determining what parties are willing to pay. Ideally, it is preferable that parties reveal their willingness to pay directly, rather than using a proxy method such as use of an asset.
22. Determining the extent to which a party or group benefits from the network involves considering the costs of any alternatives available to it because the benefit cannot exceed the cost of its next best alternative.

Alternative charging options

23. If it is not possible to achieve a market-based charging method or charging based on exacerbaters or beneficiaries pay, an alternative charging option may need to be applied. Any such option would need to:
 - (a) limit the distortion in use resulting from the imposition of charges; and
 - (b) ensure the costs of providing the network are fully covered, so future investment in the network is not inhibited by investors fearing they will not receive a return on their capital.
24. Approaches that would fit into a regime that would meet these requirements include:
 - (a) setting the charges to cover costs fully, but levying the charges on an 'incentive-free' basis; that is, on a basis unrelated to the current level of usage of the network; and
 - (b) setting the charges to achieve full coverage of costs, but spread out evenly across as broad a base as possible. This is to ensure the amount per unit of the base subject to the charge is as low as possible. A postage stamp approach is an example of such a charge. Such charges seek to limit the impact on usage of the network and, hence, inefficiency.
25. A flowchart set out in Figure 1 outlines and summarises the Authority's preliminary view as to the decision-making and economic framework that would apply for distribution pricing.

Figure 1: Preliminary view of decision-making and economic framework for distribution pricing



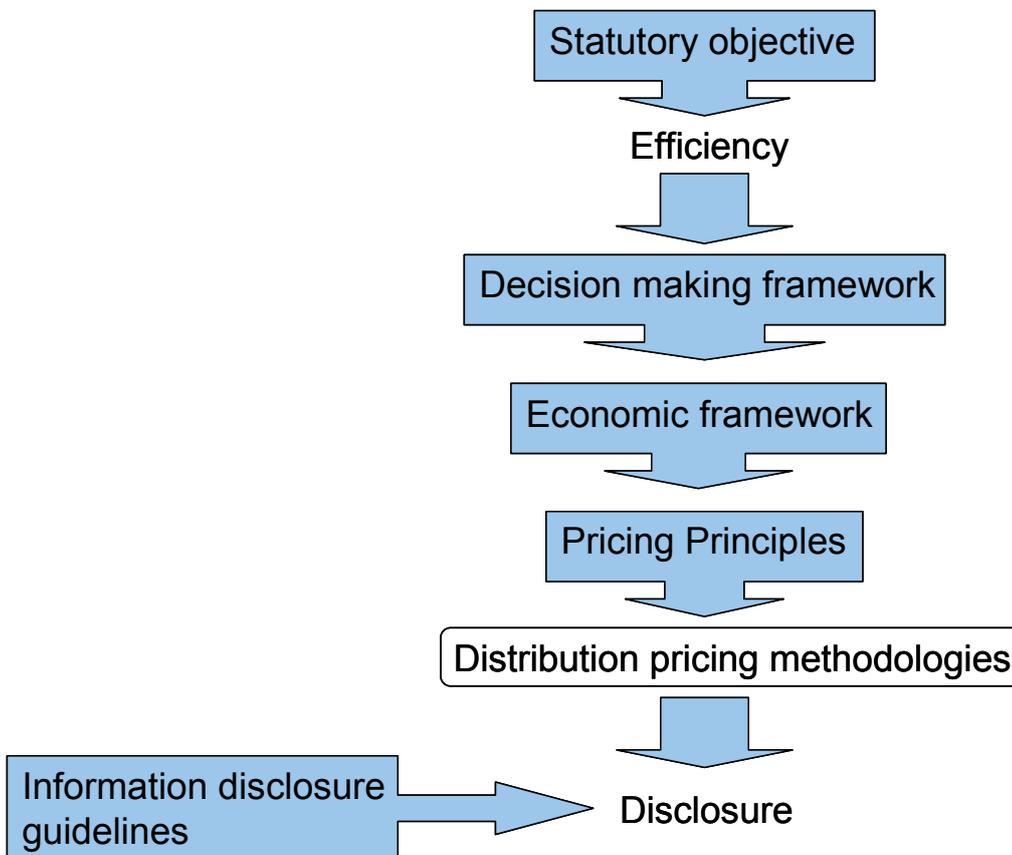
Implications of framework for pricing principles and information disclosure guidelines

26. The Authority considers that the proposed decision-making and economic framework does not require changes to the information disclosure guidelines. This is because the purpose of the guidelines is to guide distributors about the information that they should routinely make available to enable parties to determine if a distribution pricing methodology is efficient.
27. The Authority considers that the pricing principles are consistent with the decision-making framework as they have an economic efficiency focus and, in particular, seek to

promote efficient use of distribution networks and efficient investment in the industry and by consumers.

- 28. The Authority considers that the principles can be incorporated into a hierarchy that is consistent with the Authority’s economic framework. Further, the Authority considers that each principle individually is consistent with economic efficiency.
- 29. Accordingly, the Authority proposes to retain the pricing principles and information disclosure guidelines unaltered.
- 30. The Authority therefore considers that, in developing their distribution pricing methodologies, distributors should continue to be guided by the pricing principles. However, in identifying which pricing approach should be preferred, the Authority proposes that distributors should follow the hierarchy established by the framework. For this reason the Authority proposes to use the framework as criteria for assessing distributors’ application of the pricing principles.
- 31. The inter-relationship between the statutory objective, decision-making and economic framework, pricing principles and guidelines is summarised in Figure 2.

Figure 2: Relationship between statutory objective, decision-making and economic framework, pricing principles and information disclosure guidelines



Next steps and review process

32. Following submissions on this consultation paper, the Authority will consider:
 - (a) whether to confirm the economic framework; and
 - (b) depending on its decision in relation to (a), whether to confirm its application of the framework to the pricing principles and guidelines, or whether any changes are required to the pricing principles and guidelines;
 - (c) the process and timetable for the 2012 review of distribution pricing methodologies. The Authority is planning to start the review in September/October 2012.
33. The Authority notes that some distributors have completed documentation and disclosure of their 2012 distribution pricing methodologies.
34. In addition, the Authority notes concerns expressed by distributors about the Authority reviewing distributors' pricing methodologies on the basis of a decision-making and economic framework that distributors subject to the review had yet to see.
35. The Authority emphasises that the review of distribution pricing methodologies is an ongoing process. The Authority will therefore be looking for distributors to align their pricing with the pricing principles and the economic framework in as timely a manner as they are practically able to achieve.
36. If the consultation did result in changes, the Authority would take this into account when undertaking the review. Further, the Authority intends to take into account the context of the timing of consultation on the framework and implications for the guidelines and pricing principles in its consideration and commentary on disclosed information.

Glossary of abbreviations and terms

Act	Electricity Industry Act 2010
Authority	Electricity Authority
Code	Electricity Industry Participation Code 2010
EDB	Electricity distribution business
ICP	Installation control point
LRAIC	Long-run average incremental cost
LRIC	Long-run incremental cost
LRMC	Long-run marginal cost
Minister	Minister of Energy and Resources
PAWG	Pricing Approaches Working Group
SRMC	Short-run marginal costs

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2. Introduction and purpose of this paper

2.1 Introduction

- 2.1.1 The cost characteristics of electricity distribution mean that it is effectively a natural monopoly, and distributors are subject to regulatory oversight because competition cannot be relied upon to deliver efficient outcomes.
- 2.1.2 The Electricity Industry Act 2010 (Act) provides for the Authority to amend the Electricity Industry Participation Code 2010 (Code) to determine the pricing methodologies applied by distributors. In particular, section 32(2) of the Act states that: “The Code may not... (b) purport to do or regulate anything that the Commerce Commission is authorised or required to do or regulate under Part 3 or 4 of the Commerce Act 1986 (other than to set quality standards for Transpower and set pricing methodologies (as defined in section 52C of that Act) for Transpower and distributors).”
- 2.1.3 The Authority has in place a regulatory framework for oversight of distributors’ pricing methodologies, which was introduced by the Electricity Commission in 2010. This framework was designed to facilitate distributors developing more efficient pricing structures that supported competition, and to give stakeholders information to assess whether pricing structures were achieving this. The framework consists of:
- (a) The **pricing principles**, which are voluntary and intended to guide distributors in developing their pricing methodologies;
 - (b) **Information disclosure guidelines** (guidelines), which specify the information that distributors should provide in relation to their pricing methodologies; and
 - (c) **Regular reviews** of distributors’ pricing approaches, which would include use of objective scoring criteria, to determine the extent to which the outcomes sought were being achieved.
- 2.1.4 The pricing principles and guidelines were developed by the Electricity Commission under the Electricity Act 1992. The Authority’s governing legislation is the Electricity Industry Act 2010. The Authority considers it should confirm that the pricing principles and guidelines align with the Electricity Industry Act and, in particular, the Authority’s statutory objective, which is “*to promote competition in, reliable supply by, and the efficient operation of, the electricity industry for the long-term benefit of consumers.*”²

² Electricity Industry Act 2010, section 15.

2.2 Purpose of this paper

- 2.2.1 The Authority has decided to develop an economic framework that is consistent with its statutory objective that it intends to use as the basis for making decisions in relation to distribution pricing.
- 2.2.2 This approach is consistent with the approach that the Authority has decided to take in relation to decisions about transmission pricing, which the Authority has been recently consulting on.³ The Authority considers that given the economic relationship between transmission and distribution, it is important that the decision-making and economic framework for distribution pricing is consistent with that for transmission pricing. A robust decision-making and economic framework that is durable over the long term will best ensure that decisions about distribution pricing promote the Authority's statutory objective.
- 2.2.3 The purpose of this paper is to consult with participants and persons that the Authority thinks are representative of the interests of persons likely to be substantially affected by the proposed decision-making and economic framework for distribution pricing.
- 2.2.4 This paper sets out and invites submissions on:
- (a) the application of the statutory objective with respect to distribution pricing;
 - (b) the economic framework that the Authority proposes to use to assess distributors' pricing methodologies; and
 - (c) the Authority's assessment of the distribution pricing principles in light of the proposed application of the statutory objective and economic framework for distribution pricing.

2.3 Next steps

- 2.3.1 Following consideration of submissions on this paper, the Authority will finalise its decision-making and economic framework and any resulting amendments to the pricing principles, information disclosure guidelines and assessment criteria.
- 2.3.2 The Authority expects to undertake a review of the extent that distributors pricing methodologies align with the pricing principles and information disclosure guidelines in September/October 2012.

³ The consultation paper *Decision-making and economic framework for transmission pricing methodology review*, dated 26 January 2012 is available at: <http://www.ea.govt.nz/our-work/consultations/transmission/tpm-economic-framework/>.

2.4 Submissions

The Authority's preference is to receive submissions in electronic format (Microsoft Word). It is not necessary to send hard copies of submissions to the Authority, unless it is not possible to do so electronically. Submissions in electronic form should be emailed to submissions@ea.govt.nz with Consultation Paper—Decision-making and economic framework for distribution pricing methodology review in the subject line.

If submitters do not wish to send their submission electronically, they should post one hard copy of their submission to the address below.

Submissions
Electricity Authority
PO Box 10041
Wellington 6143

Submissions
Electricity Authority
Level 7, ASB Bank Tower
2 Hunter Street
Wellington

Tel: 0-4-460 8860

Fax: 0-4-460 8879

- 2.4.1 Submissions should be received by 5:00 pm on Friday 15 June 2012.
- 2.4.2 The Authority is also providing interested parties with the opportunity to make cross-submissions, and these should be received by 5:00 pm on Monday 2 July 2012.
- 2.4.3 Please note that late submissions and cross-submissions are unlikely to be considered.
- 2.4.4 The Authority will acknowledge receipt of all submissions electronically. Please contact the Submissions' Administrator if you do not receive electronic acknowledgement of your submission within two business days.
- 2.4.5 If possible, submissions should be provided in the format shown in Appendix A. Your submission is likely to be made available to the general public on the Authority's website. Submitters should indicate any documents attached, in support of the submission, in a covering letter and clearly indicate any information that is provided to the Authority on a confidential basis. However, all information provided to the Authority is subject to the Official Information Act 1982.

3. Background

3.1 Regulatory framework for electricity distribution pricing

3.1.1 In New Zealand, regulatory oversight of electricity distribution pricing is provided by both the Commerce Commission and the Authority:

- (a) The Commerce Commission regulates the price and quality of electricity distribution businesses under the Commerce Act 1986⁴, including applying regulatory controls on certain distributors' allowable revenues (which indirectly influences distributors' investment and operational decisions).⁵
- (b) The Authority has responsibility for oversight of distributors' pricing methodologies under the Electricity Industry Act 2010⁶. Prior to the Authority, such oversight was the responsibility of the Authority's predecessor, the Electricity Commission.

3.1.2 At a high level, the Commerce Commission regime effectively determines how much revenue each distributor is allowed to recover in total each year; the Authority's regime is concerned with how distributors apportion their revenue requirements among different customers, and the structure of the corresponding tariffs (eg, the mix between fixed and variable charges, and the structure of such variable charges – eg, peak versus off-peak, etc).

⁴ Available here:

http://www.legislation.govt.nz/act/public/1986/0005/latest/DLM87623.html?search=ts_act_commerce_rese&p=1&sr=1

⁵ Price-quality regulation under Part 4 of the Commerce Act 1986 applies to 17 'non-exempt' electricity distribution businesses (EDBs) across New Zealand. The remaining 12 EDBs (those that meet the definition of 'consumer owned' under the Act) are exempt from this requirement. In addition, all EDBs are subject to Information Disclosure regulation under the Act. Further details can be found on the Commission's website at <http://www.comcom.govt.nz/electricity-default-price-quality-path/> and at <http://www.comcom.govt.nz/electricity-information-disclosure/>

⁶ Available here:

http://www.legislation.govt.nz/act/public/2010/0116/latest/DLM2634233.html?search=sw_096be8ed8062360b_lines&p=1

3.2 Existing pricing principles and guidelines

3.2.1 The regulatory framework administered by the Authority that provides oversight of distribution pricing methodologies was put in place in 2010 by the Electricity Commission⁷. It consists of three key elements.

3.2.2 First, there is a set of high-level **voluntary Pricing Principles** intended to guide distributors in developing their pricing methodologies. Such a voluntary principles-based approach was chosen over a 'model' pricing methodology, as the latter was considered to be too prescriptive in nature and thus would run the risk of not appropriately recognising the different situations of networks around the country. Such an approach was also consistent with the Commerce Commission's approach to the regulation of gas distribution pricing methodologies under the gas authorisations for Powerco and Vector. However, the Electricity Commission also considered that relying on a voluntary principles-based approach alone may not deliver the desired outcomes. Accordingly, it specified that the second key element of its oversight framework should be **regular reviews** of distributors' pricing approaches (including the use of objective scoring criteria) to determine the extent to which desired outcomes were being achieved. Such reviews were expected to help achieve the desired outcomes by:

- (a) continuing to raise awareness among distributors of the different pricing approaches used by other distributors, and thus helping highlight examples of best practice;
- (b) creating a 'competitive tension' among distributors in terms of incentivising them to score well relative to their peers; and
- (c) providing a mechanism for the Authority to make informed decisions on whether the voluntary approach is delivering desired outcomes, and if not, what possible regulatory remedies it could implement as alternatives⁸.

3.2.3 The last key element of the oversight framework recognised that in order to undertake high quality reviews, the regulator would require high quality information. Accordingly, the Electricity Commission developed a set of **Information Disclosure Guidelines** which specified the type of information that should be provided by distributors in relation to their pricing methodologies.

⁷ The 1 March 2010 paper setting out the final approach can be found at: <http://www.ea.govt.nz/our-work/programmes/transmission-work/principles-or-model-approaches-to-distribution-pricing/>. This webpage also includes the information about the work leading up to this final approach.

⁸ Thus, the Commission's final paper stated that the reviews "... will highlight the extent of the number and complexity of tariffs and may lead to guidelines for improvements", and "... will highlight best practices and identify networks where pricing is inconsistent with the pricing principles". Electricity Commission, "Distribution pricing principles and information disclosure guidelines", February 2010.

3.2.4 The pricing principles and information disclosure guidelines are set out in the following tables.

Table 1: Pricing principles

<p>(a) Prices are to signal the economic costs of service provision, by:</p> <ul style="list-style-type: none"> (i) being subsidy free (equal to or greater than incremental costs, and less than or equal to standalone costs), except where subsidies arise from compliance with legislation and/or other regulation; (ii) having regard, to the extent practicable, to the level of available service capacity; and (iii) signalling, to the extent practicable, the impact of additional usage on future investment costs.
<p>(b) Where prices based on 'efficient' incremental costs would under-recover allowed revenues, the shortfall should be made up by setting prices in a manner that has regard to consumers' demand responsiveness, to the extent practicable.</p>
<p>(c) Provided that prices satisfy (a) above, prices should be responsive to the requirements and circumstances of stakeholders in order to:</p> <ul style="list-style-type: none"> (i) discourage uneconomic bypass; (ii) allow for negotiation to better reflect the economic value of services and enable stakeholders to make price/quality trade-offs or non-standard arrangements for services; and (iii) where network economics warrant, and to the extent practicable, encourage investment in transmission and distribution alternatives (eg, distributed generation or demand response) and technology innovation.
<p>(d) Development of prices should be transparent, promote price stability and certainty for stakeholders, and changes to prices should have regard to the impact on stakeholders.</p>
<p>(e) Development of prices should have regard to the impact of transaction costs on retailers, consumers and other stakeholders and should be economically equivalent across retailers.</p>

Table 2: Information disclosure guidelines

<p>(a) Prices should be based on a well-defined, clearly explained and published methodology, with any material revisions to the methodology notified and clearly marked.</p>
<p>(b) The pricing methodology disclosed should demonstrate:</p> <ul style="list-style-type: none"> (i) how the methodology links to the pricing principles and any non-compliance; (ii) the rationale for consumer groupings and the method for determining the allocation of consumers to the consumer groupings; (iii) quantification of key components of costs and revenues; (iv) an explanation of the cost allocation methodology and the rationale for the allocation to each consumer grouping;

- | |
|---|
| <ul style="list-style-type: none">(v) an explanation of the derivation of the tariffs to be charged to each consumer group and the rationale for the tariff design; and(vi) pricing arrangements that will be used to share the value of any deferral of investment in distribution and transmission assets, with the investors in alternatives such as distributed generation or load management, where alternatives are practicable and where network economics warrant. |
| <p>(c) The pricing methodology should:</p> <ul style="list-style-type: none">(i) employ industry standard terminology, where possible; and(ii) where a change to the previous pricing methodology is implemented, describe the impact on consumer classes and the transition arrangements implemented to introduce the new methodology. |

3.3 Development of criteria for assessing alignment with pricing principles and information disclosure guidelines

- 3.3.1 In September 2011 the Authority published a consultation paper that proposed criteria for assessing whether distributors' pricing and information disclosure practices aligned with the pricing principles and guidelines.⁹ This consultation paper also discussed an initial review of the alignment of the pricing methodologies of a sample of nine distributors with the guidelines (2011 review).
- 3.3.2 The principal focus of this 2011 review was the quality of the information provided by distributors (as measured against the information disclosure guidelines), not whether distributors' pricing methodologies were consistent with the pricing principles. The 2011 review was intended to be a 'dry run' in advance of a 2012 review that is to evaluate methodologies against the principles.
- 3.3.3 To facilitate the 2011 review, a set of evaluation criteria was developed regarding the specific types of information required to be disclosed by distributors in order to be consistent with the information disclosure guidelines.
- 3.3.4 During the course of the review, the nine distributors involved in the review (who were chosen as a representative sample of the 29 distributors) provided feedback that suggested that the evaluation criteria should be amended to scale back the level of detail required in several areas. This was because of a concern that the level of detail required by the draft criteria would impose excessive costs relative to the potential benefit that could be gained.

⁹ *Criteria for assessing alignment against the Information Disclosure Guidelines and Pricing Principles*, 5 September 2011.

- 3.3.5 The 2011 review also sought to achieve a secondary purpose, namely making suggestions for the types of analysis which could form the basis of the 2012 review's evaluation of whether distributors' pricing methodologies were consistent with the Principles.
- 3.3.6 Section 8 of this paper considers the criteria for assessing alignment with the principles and guidelines in light of the Authority's proposed decision-making and economic framework for the distribution pricing methodology. This approach is influenced by the feedback in submissions to the September 2011 consultation paper.

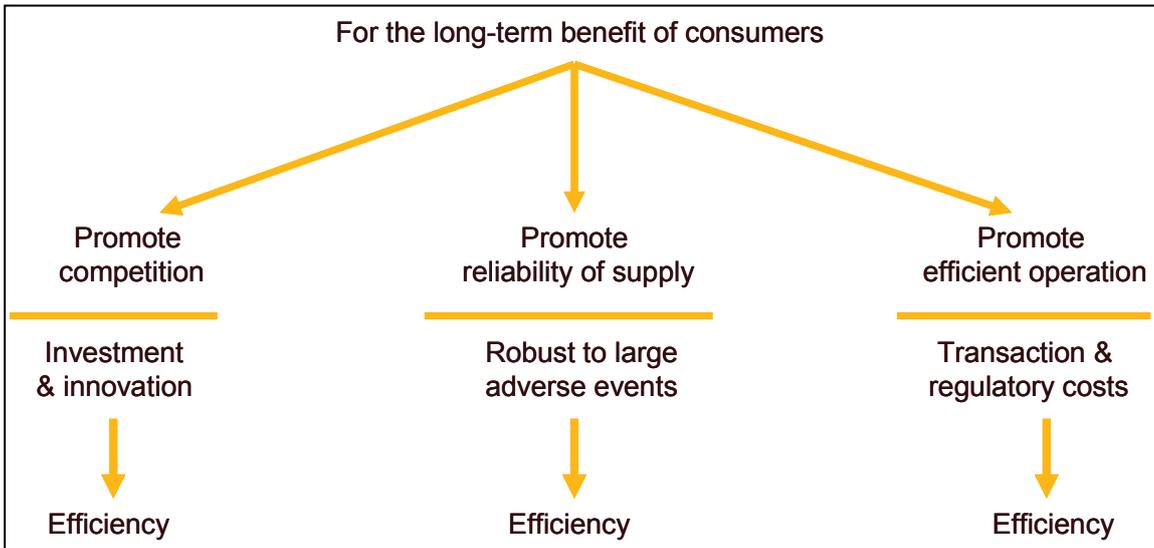
4. Decision-making framework

4.1 Statutory objective

- 4.1.1 The Authority's oversight of, and consideration in relation to, the application of the principles and guidelines must be consistent with the statutory objective. This is the case even though the pricing principles and guidelines are voluntary and are not set out in the Code.
- 4.1.2 The Authority interprets its statutory objective as requiring it to exercise its functions set out in section 16 of the Act in ways that, for the long-term benefit of electricity consumers:¹⁰
- (a) facilitate or encourage increased competition in the markets for electricity and electricity-related services, taking into account long-term opportunities and incentives for efficient entry, exit, investment and innovation in those markets;
 - (b) encourage industry participants to efficiently develop and operate the electricity system to manage security and reliability in ways that minimise total costs whilst being robust to adverse events; and
 - (c) increase the efficiency of the electricity industry, taking into account the transaction costs of market arrangements and the administration and compliance costs of regulation, and taking into account Commerce Act implications for the non-competitive parts of the electricity industry, particularly in regard to preserving efficient incentives for investment and innovation.
- 4.1.3 Figure 3 summarises the Authority's interpretation of its statutory objective and how, ultimately, each limb of the statutory objective is about promotion of efficiency as the means to achieve the long-term benefit of consumers.

¹⁰ Electricity Authority, *Interpretation of the Authority's statutory objective*, 14 February 2011. Available at: <http://www.ea.govt.nz/document/12803/download/about-us/documents-publications/foundation-documents/>.

Figure 3: Summary of interpretation of statutory objective



4.1.4 The Authority’s *Interpretation of its statutory objective* provides more detail on how the Authority interprets key elements. In the *Decision-making and economic framework for transmission pricing methodology review* the Authority highlighted several aspects of the interpretation which are of equal relevance to distribution pricing and so are repeated here: the treatment of wealth transfers and the in-depth interpretation of the three limbs of the statutory objective: competition, reliability and efficiency.

Wealth transfers

4.1.5 With respect to wealth transfers, importantly “*the Authority considers the net effects on electricity consumers and assesses the benefits to them in aggregate. This means that in virtually all circumstances, only the efficiency gains of an initiative should be treated as benefiting consumers, with wealth transfers excluded because they ‘net off’ among all electricity consumers once indirect wealth effects are taken into account*”.¹¹

Competition

4.1.6 Competition in the electricity industry is interpreted to mean workable or effective competition in regard to buying and selling electricity and where possible in electricity-related services, such as ancillary services, and transmission and distribution services.¹² From an aggregate consumer perspective, workable

¹¹ See paragraphs A5 to A10, Appendix A, *Interpretation of the Authority’s statutory objective*.

¹² *Ibid.*, Paragraph A19.

competition delivers benefits to consumers by placing pressure on firms to set their prices close to their marginal cost of supply.¹³

- 4.1.7 In particular, under workable or effective competition, the actions of competitors and potential entrants ensure that a market participant acts efficiently. As a result, no single participant is able to *sustainably* charge prices in excess of marginal cost, or restrict supply. Under workable competition, however, there may be periods when a firm is able to temporarily set prices in excess of marginal cost because of superior performance or innovation. Over time, though, the ability to do this will be competed away, and the benefits in terms of both price and service quality will be shared with consumers.
- 4.1.8 The Authority interprets competition for the benefit of electricity consumers to mean the efficiency benefits of competition. This interpretation excludes wealth transfers from the calculation of benefits to consumers, but it includes any efficiency effects that may arise from wealth transfers.¹⁴ However, if wealth transfers seriously undermine confidence in the pricing process or in the electricity industry more generally, then that can inhibit efficient entry and investment decisions and these dynamic efficiency effects should be taken into account when evaluating proposals.¹⁵

Reliability

- 4.1.9 The benefits of reliable supply are the avoided costs of supply interruptions and quality degradation, and the avoided costs of under-investment by electricity users arising from investor uncertainty. Conversely, the costs of reliable supply are the costs of obtaining, operating and maintaining distribution, transmission, and generation resources, and additional demand response capability to cover short and long-term risks in the power system (resource costs).¹⁶
- 4.1.10 Reliable supply is efficient when the marginal benefit of increased security and reliability equals the marginal cost of achieving it. The Authority, therefore, interprets reliable supply for the long-term benefit of consumers to mean the efficient level of reliability, which occurs when the total of these costs is minimised.
- 4.1.11 As for efficiency and competition, this approach is an aggregate consumer interpretation of the benefits to consumers, which excludes wealth transfers to consumers. If direct wealth transfers were taken into account (but not indirect wealth transfers), then price reductions would be valued ahead of reliable supply, which the Authority does not believe was intended by the Act. Adopting an

¹³ *Ibid.*, Paragraph A22.

¹⁴ *Ibid.*, Paragraph A25.

¹⁵ *Ibid.*, paragraph A31(b).

¹⁶ *Ibid.*, paragraph A37.

efficiency (i.e. aggregate consumer) approach achieves an even-handed treatment of resource costs versus avoided costs.¹⁷

- 4.1.12 The Authority interprets the phrase reliable supply for the long-term benefit of consumers to mean efficient levels of reliable supply where efficiency includes dynamic efficiency gains from adopting time-consistent arrangements – that is, arrangements that are robust to adverse events over the long term. In regard to minimising total costs, the Authority believes the potential costs of regulatory uncertainty and ad-hoc interventions should be taken into account in determining minimum total costs.¹⁸

Efficiency

- 4.1.13 The efficient operation limb of the Authority's statutory objective enables the Authority to take into account the transaction costs of market arrangements and the administrative and compliance costs of regulation, but also to take into account the incentives for efficient investment and innovation in the electricity industry, by both suppliers and consumers.¹⁹

4.2 Application of statutory objective to distribution pricing

- 4.2.1 Consistent with its interpretation of the statutory objective, the Authority considers that decision-making about distribution pricing should focus on promotion of efficiency of the electricity industry for the long-term benefit of electricity consumers. This focus on efficiency recognises that competition is an important tool to promote efficient outcomes, and that measures that impact on reliability outcomes should encourage efficient trade-offs between the costs and benefits of reliability.
- 4.2.2 Efficiency refers to both efficient use of distribution networks and efficient investment in the electricity industry, including in distribution and transmission networks, generation and demand-side management:
- (a) Efficient use of distribution networks focuses on least cost production and charging customers the efficient marginal costs of production; and
 - (b) Efficient investment focuses on lowest cost development of the industry over time.
- 4.2.3 For a distribution network that is already in place, increased usage involves little additional cost, as most costs are sunk. Promoting the efficient use of the network requires that prices for the existing distribution network should aim to

¹⁷ *Ibid.*, paragraph A39.

¹⁸ *Ibid.*, paragraph A46.

¹⁹ *Ibid.*, paragraph A59.

recover costs in a manner that does not inefficiently discourage or alter use of the network.

- 4.2.4 However, where usage of a network is at a point where investment in the network is required, the incremental or avoidable costs of additional usage is much higher. Where this occurs, the focus should be on finding the lowest cost way of providing services. This could involve investment in the network or it could involve alternatives such as demand-side management or generation.
- 4.2.5 In order to promote the least cost way of providing services, prices for distribution services should signal future investment costs to either parties whose behaviour results in the need for the investment ('exacerbators') or parties who benefit from the investment ('beneficiaries'). This allows these parties to incorporate the costs of the investment into their decisions. However, the economies of scale in distribution may mean there is tension between promoting dynamic efficiency through charging the incremental cost of expansion versus promoting static efficiency by charging so as to avoid distorting use of the asset.
- 4.2.6 Some regulatory provisions may limit the ability of distributors to apply charges that efficiently recover costs. In particular:
- (a) section 105 of the Act prohibits distributors from ceasing supply of services to certain customers unless they have the consent of the customer or the Minister; and
 - (b) the Electricity (Low Fixed Charge Tariff Option for Domestic Consumers) Regulations 2004, which requires retailers to offer a low fixed charge tariff option to domestic consumers and regulates distributors so as to assist retailers in offering such tariffs.
- 4.2.7 The Authority is also aware of the view of some distributors that their ability to move to more efficient charging is constrained by price control requirements under Part 4 of the Commerce Act.
- 4.2.8 Although some regulatory impediments exist, the Authority does not consider that these should affect how the Authority interprets the statutory objective or the framework that it should apply with respect to distribution pricing. The Authority would, however, take such impediments into account when it is considering distributors' application of the principles and guidelines.
- 4.2.9 In summary, the Authority interprets the statutory objective with respect to distribution pricing as requiring consideration of the impacts of distribution charges on the efficient use of distribution networks and efficiency investment in the electricity industry as a whole.

Q1. Do you agree with the Authority’s interpretation of its statutory objective with respect to distribution pricing? If you agree, please explain why. If you do not agree, please explain how you consider the statutory objective should be interpreted with respect to distribution pricing and the reasons for your interpretation.

4.2.10 Although the focus of the interpretation of the statutory objective is on overall efficiency, it is worth considering how distribution pricing can influence each limb of the objective, namely competition, reliability and operational efficiency. This is set out in Table 3.

Table 3: Application of the statutory objective to distribution pricing

	Application to distribution pricing	Examples of how distribution pricing can influence
Competition	<p>The allocation of distribution costs should support workable competition:</p> <ul style="list-style-type: none"> • In retail and generation markets; and • Between investment in distribution and alternatives such as demand-side management and generation 	<ul style="list-style-type: none"> • If a distribution charge falls to a greater extent on some retailers, some customers or embedded generators but not others, this may distort retail and generation competition, and competition among affected consumers. • Distribution pricing has the potential to favour particular technologies or connection arrangements through the incidence and structure of charges. • Distribution pricing may provide incentives for disconnection from the distribution network. This may become an increasing issue because of technological change, such as improved economics of distributed generation

<p>Reliability</p>	<p>The allocation of distribution charges should support reliability investments where the marginal benefit of increased security and reliability equals the marginal cost of achieving it.</p>	<ul style="list-style-type: none"> • Distribution pricing can signal the cost of investments to achieve reliability and encourage alternatives, such as demand-side management or investment in back-up or distributed generation.
<p>Efficiency</p>	<p>Transaction, administrative and compliance costs with distribution pricing methodologies should be at efficient levels.</p> <p>Distribution pricing should support:</p> <ul style="list-style-type: none"> • Efficient use of the network; and • Efficient investment by users of the network, including by consumers and in demand-side management, and by generators. 	<ul style="list-style-type: none"> • A complex distribution pricing methodology can lead to high transaction and compliance costs. • A distribution pricing methodology that provides locational signals or peak use signals can influence the use of sunk cost assets and short-term efficient dispatch of embedded generation. • Allocation of costs to parties that influence the efficiency of outcomes can provide efficient signals for investment in the power system as a whole.

Q2. Do you agree with the above application of the three limbs of the statutory objective to distribution pricing? If not, why not, and are there other examples of how distribution pricing can influence competition, reliability and efficiency?

5. Economic framework for distribution pricing

5.1 Introduction

- 5.1.1 Electricity distribution involves transporting a product (electricity) from where it is produced – usually the transmission network but sometimes also from embedded generation – to end consumers. When the Authority developed a framework for pricing of transmission services it first considered the approach taken to pricing in competitive transport markets.²⁰ An equivalent approach can be adopted for distribution services given the similarities in characteristics of transmission and distribution services.
- 5.1.2 In the framework for considering pricing of transmission services, the example of potato producers getting their goods to market was discussed. For electricity distribution, a more appropriate analogy may be how consumers get their goods from the market for consumption. When a consumer purchases a product through an internet-based retailer for instance, the seller will usually arrange transport of the goods to the consumer, and will charge the consumer the transport costs.
- 5.1.3 Provided the transport market is workably competitive, the transporter (such as a trucking business) will have to set their prices for the transport of goods from one location to another at the level that just covers the additional cost of adding another truck to the service (which may be leased rather than bought), including the cost of additional drivers and fuel – in other words, the long-run marginal cost (LRMC). However, when demand is temporarily low, leading to the transporter having spare capacity, the transporter may lower prices to the short-run marginal cost (SRMC) of their business, such as perhaps their fuel and labour costs.

5.2 Preferred approach to determining distribution prices: market-based approaches

- 5.2.1 When there is workable competition the pricing structure for standard transport services promotes three sources of efficiency:
- (a) Productive efficiency: the efficient production of transport services, or otherwise new entrants with lower costs will enter or threaten to enter the market at lower prices and take away business from other producers if their costs remain higher;

²⁰ See in particular pages 21-23, *Decision-making and economic framework for transmission pricing methodology review*, 26 January 2012.

- (b) Allocative efficiency: the efficient use of the transport service, as producers and consumers will transport their goods only when the benefits of transporting exceed the costs of transport; and
- (c) Dynamic efficiency: efficient investment decisions as:
 - (i) Consumers and producers face price signals that ensure they take into account the cost of transport when deciding where to locate their next plant and/or expand existing plant; and
 - (ii) Trucking businesses face price signals that ensure they only add capacity to their business when consumers are willing to pay for it.

5.2.2 In other words, workable competition promotes both efficient use of and efficient investment in transport services – the conditions the Authority is seeking in order to meet its statutory objective with respect to distribution pricing.

5.2.3 More generally, when prices are set through a market where there is workable competition through the interaction between buyers and sellers, the outcome in terms of both use and investment tends to be efficient. This is because both the buyers and sellers have an interest in seeking efficiency gains whenever and wherever they can, and no party, including a regulator, prevents them from capturing the gains.

5.2.4 For prices set through a market to be efficient the following must apply:

- (a) no party has the ability to exercise market power, implying the market is at least workably competitive; and
- (b) externalities (i.e. variances between the social costs of an activity and the costs facing decision makers about the activity) are minor or can be effectively ‘internalised’ by decision makers.

5.2.5 Market-based charges also tend to be less controversial than administered charges, and therefore may be more durable and sustainable. Prices established through a market through interaction between buyers and sellers are unlikely to alter as a result of lobbying. However, those setting prices on an administrative basis – the alternative approach – are more vulnerable to altering the approach to pricing in the face of lobbying.

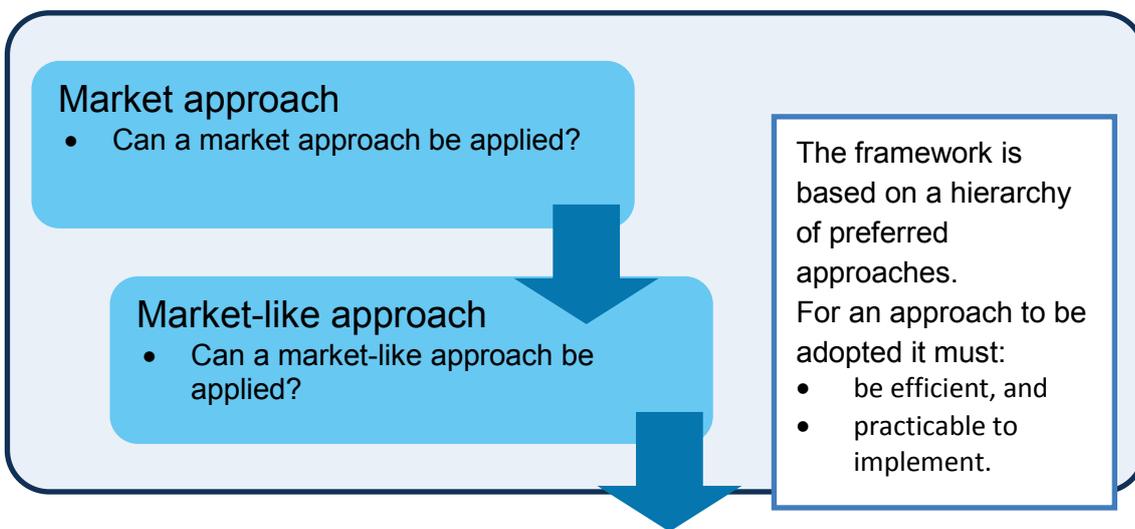
5.2.6 For these reasons the Authority’s preliminary view is that distributors should use pricing methodologies that give preference to distribution charges that are market-based, wherever such charges are efficient and it is practicable to implement them. The situations in which a market-based outcome may not be efficient are when there is an issue of market power or externalities, and where implementation would impose excessive transaction costs.

5.2.7 By a market-based approach to charges the Authority means either charges established by the interaction of buyers and sellers in a workably competitive

market or charges which are likely to mimic or replicate such charges. The Authority’s preliminary view is that charges established by the interaction of buyers and sellers should be preferred over charges seeking to mimic or replicate such charges. This is because charges thought to mimic market-based charges may not do so in practice, and are unlikely to adjust as efficiently as those established directly by market activity.

5.2.8 Figure 4 summarises the steps and the questions that need to be considered in deciding whether a market-based approach can be applied to distribution pricing.

Figure 4: Application of economic framework: market-based approaches



5.3 What are market-based distribution prices likely to mean in practice?

Nodal pricing

5.3.1 In New Zealand, spot prices on the wholesale electricity spot market are determined using locational marginal pricing (LMP) or nodal pricing. Under LMP, the price at each node reflects the marginal cost or value of increasing the supply of electricity by one unit at that node or location on the grid, given the grid configuration and capacity available at that time.

5.3.2 The result is that the prices grid users pay and receive reflect the marginal cost of electricity at different points on the grid. In general, the further a consumer is from major sources of supply, the higher the price on the wholesale market of the electricity they consume. Similarly, generators typically receive higher wholesale market prices the closer their generation is to major load centres, such as Auckland. Producers and consumers inevitably take these differences into account when making investment, production and consumption decisions.

- 5.3.3 In theory, nodal pricing could be extended to distribution networks, and this has been advocated by some researchers, particularly in the context of encouraging distributed generation.²¹ As noted by Charles River Associates in a report provided by Orion in its submission to the Pricing Approaches Working Group:

“In theory, a system of nodal prices on the distribution network would provide an accurate price signal of using the distribution network at each location and at each point in time reflecting the state of the network and demand and supply. In principle, expectations of loss and constraint rentals²² that would arise from nodal pricing provide the correct signals for investment to mitigate the cost of losses [and constraints]. Nodal prices would reflect the quality and capacity of investment in the network and patterns of demand.”

- 5.3.4 Although a theoretical possibility, the application of nodal pricing at an installation control point (ICP) level does not appear to be practical at this stage, given the scale of the current distribution networks. Applying the wholesale market design to distribution networks would effectively involve establishing a unique price at each ICP each half hour based on the customer’s demand and the cost of the available sources of power supply. The establishment costs and transactions costs of applying such a model across all distribution networks are likely to be substantial. The benefits in terms of more efficient pricing and more efficient dispatch of distributed generation would therefore have to be correspondingly large to make it worthwhile. While alternative models, such as zonal pricing, may assist in reducing transactions costs, establishment costs would still be substantial and the expected benefits appear to be low.
- 5.3.5 Accordingly, mechanisms for funding the cost of distribution networks based on nodal pricing also do not appear to be practical possibilities at this stage. Such mechanisms could include:
- (a) giving investors in distribution assets the rights to any loss and constraint rentals arising across the assets they funded; and/or

²¹ See for example: Sotkiewicz, PM and Vignolo, JM, “Nodal pricing for distribution networks: Efficient pricing for efficiency enhancing distributed generation”, *IEEE Transactions on power systems*, 21 (2), May 2006, pages 1013-1014; Pollitt, M and Bialek J, “Electricity network investment and regulation for a low carbon future” in *Delivering a low carbon electricity system: Technologies, economics and Policy*, Editors: Grubb, M, Jamasb, T and Pollitt, M G, Cambridge University Press, July 2008.

²² Loss and constraint rentals are the surplus funds that arise under nodal pricing (also called ‘locational marginal pricing’) because the prices at purchaser (consumer) nodes exceed the price at injection nodes (ie. nodes where generation is directly connected with the distribution network and transmission off-take nodes). This is because prices are calculated to reflect the additional electricity that must be generated (injected) as result of network losses and that more expensive sources of electricity must be used to supply demand when there are constraints on the network.

- (b) allowing investors to buy and sell electricity transported across assets they had funded and retaining the resulting profits.

Long-term contracts

- 5.3.6 A market-based mechanism that is used for distribution pricing is long-term contracting.
- 5.3.7 The use of long-term contracts tends to be restricted to major loads or large scale embedded generation where the customer is of a scale that it would be viable to undertake and maintain the network investment themselves. The customer may also have the choice of locating on another network so if agreement cannot be reached the distributor would forgo the customer's business. This means that the monopoly position of the distribution company is diminished. The distributor is, nevertheless, likely to have a competitive advantage relative to the customer in undertaking the network investment because of their specialisation, control of the distribution network and likely access to greater distribution network economies of scale. The transactions costs of negotiating long-term contracts are likely to mean that their use is limited to large customers only.
- 5.3.8 In addition, the charge applying to the cost of connecting to the network is sometimes established on a negotiated basis but other costs are charged on the standardised basis applying to all customers. The charge can take a range of different forms, including the customer paying the capital costs of connecting to the network but receiving a discount or a payment when other customers use the connection or the customer contributing only some of costs. In such cases, the connection charge is market-based but all other charges are determined using an administrative approach.

Q3. Do you agree that a market-based distribution pricing methodology would tend to promote efficiency in network use and in investment in distribution networks, generation, demand management and the electricity industry more generally? If so, what are your reasons? If you disagree, what are your grounds for disagreeing?

Q4. Do you agree that market-based distribution pricing methodologies are likely to be more durable and stable than approaches involving administered charges? If so, what are your reasons? If you disagree, what are your grounds for disagreeing?

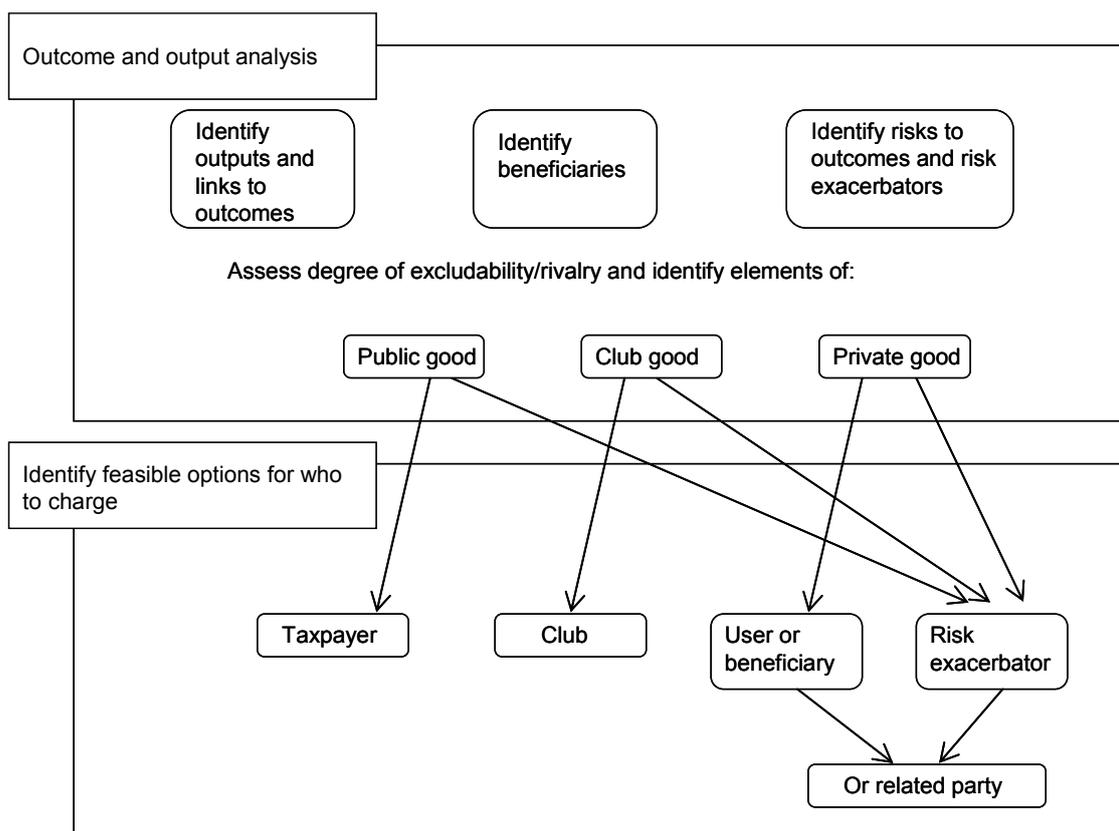
Q5. Do you agree distributors should use pricing methodologies that give preference to market-based approaches to distribution charges wherever such charges will be efficient and implementation will be practicable? If so, what are your reasons? If you disagree, what are your grounds for disagreeing?

5.4 Pricing: Administrative approaches

5.4.1 The problem of determining by administrative means who to charge for a good or service and what the charge should be is, of course, not unique to distribution. It is a common problem encountered in public policy. The Authority considers that the Treasury's *Guidelines for setting charges in the public sector*²³ provides a useful basis for identifying which parties should be charged for a good or service and what charges they should face. This is an approach applied across government in New Zealand and has become a standard approach for determining by administrative means which party should be charged for a good or service and what charge they should face. Although distributors are businesses, rather than government agencies, the principles for determining the basis for charging when an administrative approach is required are the same.

5.4.2 Figure 5, which is reproduced from the *Guidelines*, provides a summary of the overall approach as set out in the Treasury's *Guidelines*:

Figure 5: Identification of which party to charge²⁴



²³ The Treasury, *Guidelines for setting charges in the public sector*, December 2002.

²⁴ The Treasury, *Guidelines for setting charges in the public sector*, December 2002, figure 1, page 13.

5.4.3 The distinction between public goods (or services), club goods and private goods depends on the degree to which parties can be excluded from consuming the good ('excludability') and the degree to which consumption of the good by one party precludes its consumption by another ('rivalry' in consumption). Table 4 below defines the various categories and gives examples.

Table 4: Determination of type of good

	Excludable	Non-excludable
Rivalrous	Private goods Food, clothing, cars, fishing regulated by quotas	Commons Unregulated hunting and fishing of scarce resources
Non-rivalrous	Club goods Public swimming pools, satellite television, libraries	Public goods Free-to-air television, defence, police services

5.4.4 In practice, the distinctions between the different categories are not hard and sharp. For example, if it is a very hot day and many people turn up to a modest-sized public swimming pool at the same time, its consumption will quickly become 'rivalrous', and it would be more accurately described as a private good than a club good. Free-to-air television (and radio) can be made a club good, rather than a public good, by requiring those with television sets to hold licenses in order to view free-to-air television and policing this requirement. This was the practice in New Zealand for many years.

5.4.5 Commons can be transformed into private goods by defining property rights in them. This is what New Zealand did when it developed the Individual Transferable Quota (ITQ) management system for fisheries. The same process occurred in the past in relation to most frequencies of the radio spectrum; some frequencies, such as those you use to lock your car door, monitor sleeping babies, and run Wi-Fi have been recently returned to commons from now redundant uses.

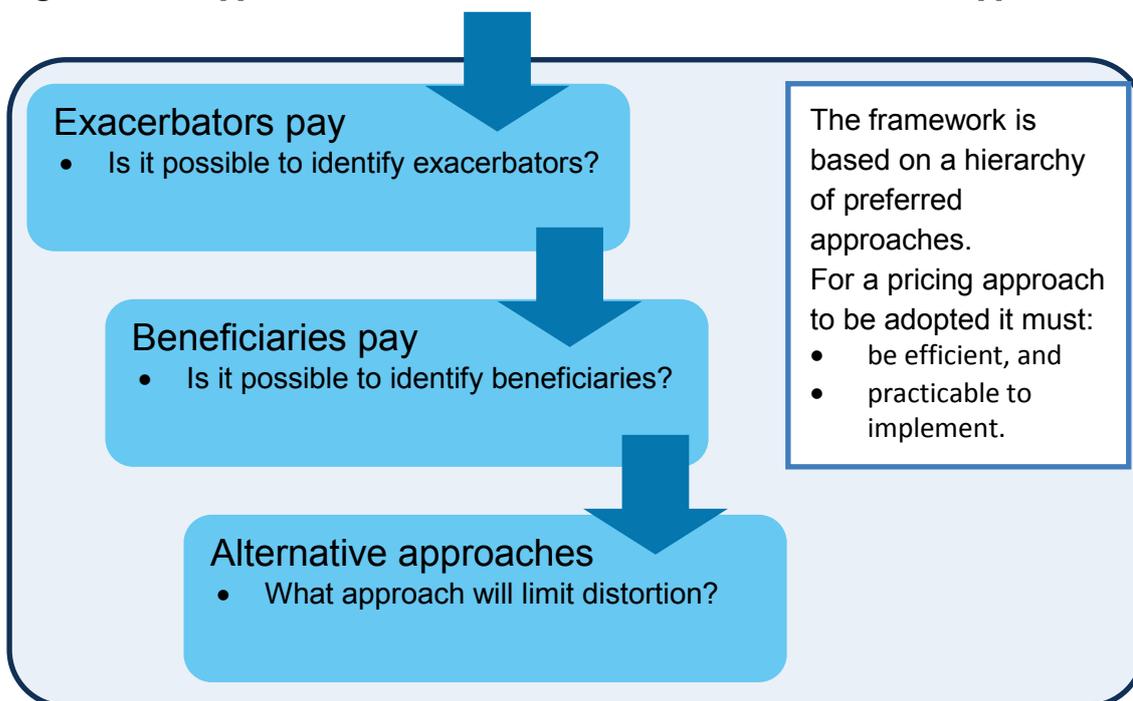
5.4.6 A distribution network might be thought to be like a public swimming pool with the extent to which the use of a distribution network is 'rivalrous' depending on the level of demand relative to capacity. As the use of distribution assets increases, the level of losses increases more than proportionately. Additional use affects all existing users. For this reason, it is appropriate to consider a distribution network is 'rivalrous' in consumption. It is also possible to prevent a consumer or generator from using a distribution network (i.e. distribution networks are

'excludable'). Since use of a distribution network is both rivalrous and excludable it is a private good.

- 5.4.7 Figure 5 indicates that according to Treasury's *Guidelines* the potential parties to charge for a distribution network are exacerbators, users or beneficiaries, or a party or parties related to one or more of these groups.
- 5.4.8 The preliminary view of the Authority is that where an administrative approach to setting distribution charges is necessary:
- (a) the first preference should be for charges that apply to exacerbators and the second preference should be for charges that apply to beneficiaries;
 - (b) users of the network asset should only be targeted as a proxy for beneficiaries. The Authority notes that when use is voluntary it is reasonable to assume users are beneficiaries, although their benefit may not exceed the costs of provision if they are not being charged; and
 - (c) a related party to the exacerbator or beneficiary (e.g. a retailer rather than the consumer) should only be targeted when it is clear that it will pass the economic impact of the charge on to exacerbators or beneficiaries, as the case may require.
- 5.4.9 Making exacerbators face the costs of their decisions would mean the good or service is only provided when the benefits exceeds the costs to exacerbators, and so improve the performance of the economy as a whole by reducing wasteful activities. Charging beneficiaries only ensures that those that would be willing to pay are required to do so. If use is not voluntary, the user may not be a beneficiary.
- 5.4.10 Adopting the exacerbators pay approach ensures that, to the extent it is practicable, those making decisions relating to a distribution network face the social costs of their decisions, and not just their private costs. This enhances efficiency by avoiding expenditure on socially inefficient activities. Exacerbators pay is the principle underlying the approach of requiring parties that locate in an area requiring extension of a distribution network to pay for it.
- 5.4.11 Parties can of course take decisions that avoid the need to augment a network, such as building generation in a location that would otherwise require expansion of the network. In effect, parties taking such actions are 'negative' exacerbators.
- 5.4.12 It could be argued that distributors and/or parties paying for a distribution network should pay 'negative exacerbators' to undertake investments that avoid the need for augmentation of the network. However, it is important to consider the private benefit of such distribution alternatives, as it is often the case that the private benefits exceed the costs so the investments would proceed anyway. If this is the case, a payment from the distributor and/or parties paying for the distribution network in such situations would be inefficient.

- 5.4.13 If it is not possible to identify exacerbators, or if the revenue from charging exacerbators would not cover full costs, or if charging exacerbators the full cost would be inefficient, the next series of questions should be:
- (a) Can the parties deriving benefits from the provision of the good (or service) be accurately and appropriately identified?
 - (b) If they can, would it be efficient to charge them or one or more subsets of them, and to what extent?
 - (c) How should any charges on beneficiaries be levied so as to promote efficiency?
- 5.4.14 It may not be possible to clearly identify either exacerbators or beneficiaries in relation to an activity. Even if it is, to ensure that the pricing approach is efficient, it is important to consider whether there are adverse efficiency consequences such that the costs of making exacerbators or beneficiaries alone pay exceed the benefits.
- 5.4.15 If exacerbators or beneficiaries cannot be identified, or it would be inefficient to charge them or to charge them an amount sufficient to cover costs, an alternative charging option may have to be adopted.
- 5.4.16 In practice, this often involves spreading charges evenly across a broad base. A broad base lowers the charge per unit of the base, reduces the risks of creating inefficiency, is simple to administer, and makes it more difficult for parties to lobby against since their treatment is the same as everyone else's.
- 5.4.17 The Authority's preliminary view is that the order of preference among administrated approaches to setting distribution prices should be exacerbators pay, beneficiaries pay and, finally, alternative charging options. The Authority proposes that the more preferred approach should apply wherever and to the extent it is demonstrated such charges are efficient and implementation practicable.
- 5.4.18 If a preferred approach is unable to generate sufficient revenue or any revenue while meeting these requirements, the Authority considers the next ranked approach should apply to either the whole or part of the revenue requirement.
- 5.4.19 Should the Authority conclude that the current voluntary approach is not delivering outcomes consistent with the statutory objective and that Code amendments were necessary any such amendments would need to comply with the Authority's Code amendment principles.
- 5.4.20 The steps involved and the questions that need to be considered in determining which administrative approach should be applied are set out in Figure 6.

Figure 6: Application of economic framework: administrative approaches



Q6. Do you agree the second, third and fourth ranked preferences should be for administrative approaches to distribution charges of exacerbators pay, beneficiaries pay and other charging options wherever such charges will be efficient and implementation practicable? If so, what are your reasons? If you disagree, what are your grounds for disagreeing?

5.5 Exacerbators pay

What is an exacerbator?

- 5.5.1 An exacerbator is a party whose behaviour influences the requirement for an activity. An exacerbator is a party whose action or inaction leads to the need to undertake an activity.
- 5.5.2 Examples of exacerbators are common in distribution networks. Much discussed examples are the location of dairy farms and development of irrigation schemes in areas such as the Canterbury plains leading to the need to augment distribution networks. This may involve not only new connections but an increase in the capacity and/or reliability of existing networks.
- 5.5.3 In such cases, the parties whose actions (or inactions) had led to the need to augment the network – the exacerbators – were the parties that had undertaken

the dairy or irrigation development. This was because if they had not undertaken the development the need for augmentation of the network would not have arisen.

- 5.5.4 An important point to note from these examples is that all users of the network benefit from the augmentation if it results in improved reliability and/or lower losses. However, only one group of parties took actions that led to the need to augment the network. If they had faced the full cost of their actions when they undertook their investment decisions some of the parties may not have proceeded with the investment and the need for the augmentation would have been reduced.
- 5.5.5 The concept of exacerbators pay could apply to any example where a party's actions or inactions led to a need to augment a distribution network. The most obvious example is a load or a generator that was considering whether to locate in an area not connected to the network. Another example is a customer using equipment with a high reactive power requirement that necessitates investment in network reactive support equipment. Their decision on whether to proceed or not would determine whether the augmentation was necessary.

How do you identify exacerbators?

- 5.5.6 Applying an exacerbators pay approach requires a methodology for identifying exacerbators that can be applied reasonably consistently over time and across a distribution network. This is to ensure that all parties face equivalent incentives to act efficiently so that the efficiency benefits of applying an exacerbators pay approach are obtained throughout the network.
- 5.5.7 The method for identifying exacerbators also needs to be cost effective to ensure that the costs of identifying exacerbators do not compromise efficiency benefits.
- 5.5.8 Ideally, exacerbators should be identified prior to augmenting the network. This gives parties that would pay the charge the opportunity to incorporate the cost implications of their actions or inactions into their own decisions, giving them incentives to act efficiently. However, an ex-post application of exacerbators pay may still improve efficiency by sending a clear signal to others that they should consider the indirect costs to society of their decisions, if these differ from their private direct costs, as they will be required to bear these costs. However, before an exacerbators pay approach is applied on an ex post rather than ex ante basis it is important to confirm that the benefits of doing this exceed the costs.
- 5.5.9 To identify exacerbators, the first step is to identify any actions or inactions by parties using or who wish to use a distribution network that lead to the need to augment it. The actions or inactions can be discerned from other options the parties may have had by the fact that, if they chose another option, the need for augmentation of the network would have been avoided.

- 5.5.10 Actions or inactions that may lead to the need to augment a distribution network could include:
- (a) a decision to locate generation or major load in a location that requires connection to the network, augmentation of an existing connection, or augmentation of assets to increase the overall capacity of network; and
 - (b) a significant increase in peak injection or off-take of power or, conversely, a decision to not invest in, for example, load management.
- 5.5.11 This list is not intended to be exhaustive. There may be other actions or inactions that may require augmentation of distribution networks. Under an exacerbators pay approach, whenever any material augmentation of a distribution network is being considered an assessment of exacerbating actions or inactions would be made to determine which parties, if any, should contribute to paying for it.

Q7. Do you agree these actions can exacerbate investment? Are there other actions and, if so, what are they?

- 5.5.12 The next step is to identify the parties whose actions or inactions are leading to the need to invest in the network. The identity of exacerbators may not be immediately obvious and may require empirical or other analysis to confirm their identity.
- 5.5.13 Parties who may take actions or fail to take actions that result or resulted in the need to invest in a distribution network may be:
- (a) new load or generation, e.g. a new consumer or a generator entering an area either not served by the distribution network, or where the existing network has insufficient capacity to cater for the additional off-take or injection; or
 - (b) existing generation increasing the capacity of their generation or existing load investing in new equipment resulting in increased load.
- 5.5.14 The key issue with identifying exacerbators is determining which party or parties have the ability to act differently, thereby avoiding the need to augment the network. With new load or generation this should normally be straightforward as in the absence of a decision to undertake the load or generation investment augmentation of the network would be unnecessary. With existing load or generation, however, there may be multiple parties, only some of whom are taking actions or inactions leading to a need to augment the network. For the exacerbators pay approach to endure it is important that a robust methodology is applied to differentiate exacerbators from other parties.

Q8. Do you agree that exacerbators should be identified by determining which party or parties have the ability to act differently, thereby avoiding the need to augment the network? Is there an alternative approach? If so, please provide details.

What price should exacerbators face?

- 5.5.15 Under exacerbators pay, the party or parties whose actions or inactions led to the cost in question is responsible for mitigating that cost. This provides incentives on the parties responsible to consider what alternative actions they could take to avoid the need for the expense.
- 5.5.16 To ensure exacerbators have incentives to make efficient decisions, in theory the price they should face should be based on the long run marginal cost (LRMC) for the network of their actions or inactions. In particular, the price should be set such that the marginal private cost of their activity equals the marginal social cost of their activity. This means that they will only undertake the activity if their marginal private benefit is equal to or exceeds the price.
- 5.5.17 This provides them with incentives to consider alternatives, such as connecting elsewhere, managing their load, investing in their own generation (if they are a load) or undertaking the investment themselves. By charging LRMC, exacerbators can compare this against the cost of alternatives and incorporate this into their decision on whether to proceed with the exacerbating action or inaction.
- 5.5.18 However, the implementation of pricing based on LRMC is not straightforward in practice. In particular, efficient augmentation of a distribution network may be “lumpy”, in which case the LRMC is likely to fluctuate over time. Depending on the time horizon used to calculate LRMC, a price based on LRMC may therefore also fluctuate, compromising the provision of a price signal that is durable over the long term. A price based on an estimate of LRMC over a relatively long time horizon that reflects the life of distribution assets may be more efficient.
- 5.5.19 An alternative to LRMC is long-run incremental cost (LRIC). This was the pricing methodology recommended by PAWG during periods of congestion.²⁵ In the context of exacerbators pay, LRIC is the additional cost of augmenting the

²⁵ Pricing Approaches Working Group, *Model approaches to distribution pricing: Second paper*, 2 February 2005, page 30. The approach recommended by PAWG was long-run average incremental cost (LRAIC). As noted by advice from LECG to PAWG: “Given the practical issues that must be resolved in pricing in the context of electricity distribution, prices that aim to reflect the incremental cost to supply the service will generally reflect some form of long run average cost to supply the service, or a form of long run incremental cost that is defined in such a way as to be equivalent.” LECG, *Incremental cost measures and pricing*, a paper prepared for PAWG, 21 June 2004.

network, over and above that already planned, because of an exacerbator's actions or inactions.

- 5.5.20 PAWG considered how to apply prices based on LRIC or, more specifically, long-run average incremental cost (LRAIC)²⁶. They concluded that two-part pricing may be appropriate, with fixed and variable components as follows:
- (a) a fixed price component, which recovers consumer-specific costs and may include further fixed price components based on the installed or contract capacity; and
 - (b) a variable price component, expressed in \$/kVA/year, which would apply to marginal demand, aimed at signalling congestion in the network and reflecting the cost of expanding the network to relieve the congestion.
- 5.5.21 This approach involves LRAIC-based prices on only the variable component. PAWG noted that the fixed component was designed so as not to affect customers' usage decisions.²⁷
- 5.5.22 The Authority considers that exacerbators pay approaches to distribution pricing should be assessed according to the extent to which they promote the statutory objective with respect to elements of a distributor's pricing for which a satisfactory market-based approach has not been found. That is, the options should be assessed on the extent to which they promote efficient use of the distribution network and efficient investment in the network, generation, demand management and industry as a whole.
- 5.5.23 Should the Authority conclude that the current voluntary approach is not delivering outcomes consistent with the statutory objective so that Code amendments are necessary any such amendments would need to comply with the Authority's Code amendment principles, including cost-benefit analysis.

Q9. Do you agree with the assessment of the price that should apply to exacerbators? Do you agree with the assessment of how exacerbators pay should apply in practice? Do you agree with the proposed approach for identifying the preferred option or options for applying exacerbators pay? Please provide explanations in support of your answers.

What if exacerbators pay is not viable to fully recover costs?

- 5.5.24 It may not always be possible to identify exacerbators. Even if it is, it may be inefficient to apply an exacerbators pay approach as the costs (and, in particular,

²⁶ See footnote 25.

²⁷ PAWG, 2004, page 30.

the transactions costs) of making exacerbators pay may exceed the benefits, or the revenue from charging exacerbators may be less than the full costs.

5.5.25 Alternatively, it may be difficult to determine the extent to which the actions or inactions of different parties contribute to the need for the investment in the network, making determination of an appropriate charge difficult. Where it is difficult to identify exacerbators or the costs of making exacerbators pay exceed the benefits, alternative pricing approaches need to be considered. In the first instance, this should be beneficiaries pay but, if this approach is also not fully viable, some other pricing approach may be necessary.

5.5.26 Where exacerbators have been identified and it appears efficient to charge them, it is important to confirm that this would not result in them acting inefficiently in order to avoid the charge. Inefficient actions could include lobbying to ensure certain activities were not considered exacerbating, or reconfiguration of their assets or any other activity that would enable the exacerbating activity to continue while avoiding the charge. To avoid this problem, it may be necessary to include a mechanism that seeks to address any incentive for inefficient behaviour, such as inefficient disconnection from the network.

Q10. Do you agree these considerations should be taken into account under an exacerbators pay approach? Please provide an explanation in support of your view.

5.6 Beneficiaries pay

What is a beneficiary?

5.6.1 A beneficiary can be defined as a party for whom the private benefits of the investment proceeding exceed its share of the costs, and would therefore be willing to pay if that were the only means by which the benefit could be acquired. There are two benefits of a beneficiaries pay approach, if it can be applied effectively:

- (a) investment efficiency benefits through improved investment decision making; and
- (b) benefits in terms of improved durability of the allocation methodology.

5.6.2 Consider, for example, a farmer from Oamaru selling potatoes in Auckland. The farmer would be willing to contribute to the cost of the roads and inter-island shipping necessary to get the potatoes from Oamaru to Auckland, provided the value they obtain from selling potatoes in Auckland exceeds the costs of getting them there. Similarly, Auckland consumers would be willing to contribute to the costs of getting the potatoes from Oamaru to Auckland provided the value they

obtain from the Oamaru potatoes exceeds the costs, including the costs of alternatives, such as potatoes grown in Pukekohe.

- 5.6.3 A beneficiary will only be willing to pay up to the private value they obtain from the service. If a beneficiary is made to pay more than their private value they will have incentives to ensure that the investment does not proceed. Similarly, beneficiaries who are under-allocated costs may have incentives to lobby for the investment, which if it proceeded would impose costs on others, including their potential competitors. However, provided allocation of costs is undertaken on an accurate basis and the value to beneficiaries exceeds the costs, making beneficiaries pay promotes efficiency. This is because beneficiaries will have incentives to consider the costs of the investment in their own decisions and will also have incentives to seek to minimise the costs of the investment itself.
- 5.6.4 As with exacerbators pay, the concept of beneficiaries pay could apply to any aspect of a distribution network where parties could be identified who would be rationally willing to pay for it. With some assets, though, there may be large numbers of beneficiaries. It is therefore important to ensure that identification of beneficiaries is only undertaken up to the point where the benefits of identifying the beneficiaries and making them pay exceed the costs.

How do you identify beneficiaries?

- 5.6.5 Applying a beneficiaries pay approach requires a reasonably robust method for identifying beneficiaries that can be applied consistently over time and across a network. The benefits of improved investment efficiency and durability will be compromised if beneficiaries cannot be cost-effectively and clearly identified. In an interconnected electricity network there can be practical issues that make identifying beneficiaries costly and open to dispute.
- 5.6.6 The greatest value from applying a beneficiaries pay approach can be obtained by linking it to investment decision-making. It is, therefore, preferable that beneficiaries are identified prior to decisions being made, and have decision rights in the investment approval process.
- 5.6.7 For this reason, there are advantages in applying a beneficiaries pay approach before a new investment is confirmed, as prospective beneficiaries have an incentive to reveal their interests if they wish the investment to proceed. It also provides the opportunity for their willingness to pay to be incorporated into decision making. On the other hand, allocation of costs is still based on uncertain information as to the actual value to the potential beneficiaries, increasing the risk of inaccurate allocation of costs amongst those paying for the investment.
- 5.6.8 There can nevertheless be value in applying a beneficiaries pay approach after an investment has been made, as this will impact on future investment decisions. Allocation of sunk costs can drive expectations about how sunk costs from future

investments will be allocated, and parties will incorporate this into their decision making. Moreover, allocation of costs after they have been sunk provides more certain information on the benefits of the investment to particular parties, and therefore how the costs should be allocated. As with exacerbators pay, it would be important to ensure that the benefits of ex-post application of beneficiaries pay exceed the costs.

5.6.9 In order to identify beneficiaries, it is necessary to determine the benefits participants are obtaining from the network. Benefits to participants can include:

- (a) reliability;
- (b) security;
- (c) increased competition; and
- (d) more profitable power sales through increased generation volumes and/or higher generation prices.

5.6.10 Table 5 below shows three main options:

Table 5: Identification of beneficiaries

	Approach to identifying beneficiaries
Users as a proxy	This would use a non-price metric, such as shares of assets based on flows.
'What if' analyses	Comparisons of volume/price benefits to participants with and without investments. Different options: <ul style="list-style-type: none"> • For new or existing assets. • Based simply on with or without the asset, or making assumptions of alternative generation expansions.
Ex-ante identification	Identify beneficiaries as part of the process of a decision on an investment. <ul style="list-style-type: none"> • Need to identify consumption and, if applicable, generation types • Estimate benefits to consumption and, if applicable, generation types • Set assumptions around future projections of demand and generation • Agree how to handle future beneficiaries

Q11. Do you agree that these ways can be used to identify beneficiaries? Are there others? If so, please provide details.

What pricing should apply to beneficiaries?

- 5.6.11 Ideally, the price that should apply to beneficiaries should reflect the lesser of the charge which will fully recover the costs of the network being paid by beneficiaries and the anticipated (*ex ante*) value to them from the services provided by the network. This will avoid the problems noted earlier of under-allocation of costs (which provides an incentive for lobbying and shifting the costs onto others) and over-allocation of costs (which provides incentives to lobby against efficient investments).
- 5.6.12 It is preferable that the cost allocation to beneficiaries is fixed at a point in time, as this avoids the problem of the method of cost allocation influencing their use of the asset. Such an “incentive free” approach will ensure that the party only uses the asset when the benefits they obtain exceed the costs, rather than their usage being determined by how much they are charged. It is therefore preferable to avoid cost allocation approaches that are based on either usage or shares of usage.
- 5.6.13 Application of beneficiaries pay requires a method for determining what parties are willing to pay. Ideally, it is preferable that parties reveal their willingness to pay directly, rather than using a proxy method such as use of an asset.
- 5.6.14 Determining the extent to which a party or group benefits from the network involves considering the costs of any alternatives available to it because the benefit cannot exceed the cost of its next best alternative.
- 5.6.15 For example, a major customer directly connected to a distribution network with its own co-generation plant obtains a benefit from the connection in the form of the back-up it provides to its own generation capacity. The limit of its benefit from the connection (assuming it does not sell any surplus electricity output) must be the costs of providing the back-up by the next best alternative, such as installing and operating an alternative form of standby generation. The economics of small scale distributed generation may mean that this is an issue that distributors will increasingly need to consider.

Q12. Do you agree with the assessment of the price that should apply to beneficiaries? Do you agree with the assessment of how beneficiaries pay should apply in practice? Please provide an explanation in support of your answer.

What if beneficiaries can't be efficiently identified or charging them is inefficient?

- 5.6.16 As with exacerbators, it may not always be possible to identify beneficiaries. Alternatively, charging beneficiaries may be inefficient or not yield adequate revenue to fully cover the costs of the network.
- 5.6.17 Even if it is possible to identify the beneficiaries and the extent they benefit, it may not promote efficient outcomes to levy charges on all of them. For some, the benefit may be so small and the costs of setting, collecting and enforcing the charges so great that, taking transaction costs into account, it would not be efficient to apply a beneficiaries-pay approach.
- 5.6.18 In other instances, levying the charge on some beneficiaries may create inefficiencies that should be avoided. For example, more price sensitive consumers of the service may alter their use of the service in response to the charge. While this may be able to be addressed through changing the method of determining the charge, such as charging on a basis that relates less to usage, it is important to confirm that the benefits of doing this exceed the costs.
- 5.6.19 If exacerbators or beneficiaries cannot be identified, or it would be inefficient to make them pay, or to pay enough to fully cover costs, an alternative charging option will have to be adopted.

5.7 Alternative charging options

- 5.7.1 The aim of any method of charging for the network is to minimise distortions in its use from the efficient level and incentivise appropriate investment. If the ideal is unachievable a regulator may have to be satisfied with a regime that:
- (a) limits the distortion in use resulting from the imposition of charges; and
 - (b) ensures the costs of providing the network are fully covered, so future investment in the network is not inhibited by investors fearing they will not receive a return on their capital.
- 5.7.2 One approach that would do this would be to set the charges so full coverage of costs will occur, but levy the charges on an 'incentive-free' basis; that is, on a basis unrelated to the current level of usage of the network.
- 5.7.3 Another approach is to set the charges so full coverage of costs will occur, but spread them out evenly across as broad a base as possible. The rationale is that spreading the charges broadly would tend to make them modest per unit of the base upon which they are levied. This should restrain the impact the charges have on usage and hence on the resulting inefficiency. Applying them evenly across the base is intended to reduce lobbying against the charges because

each unit will be subject to the same charge. An example of such a charge is so-called 'postage stamp' charging.

Q13. Are there other alternative pricing options? Do you agree with the assessments of how incentive free and postage stamp pricing should be applied in practice? Please provide reasoning in support of your answer.

6. Conclusion on economic framework

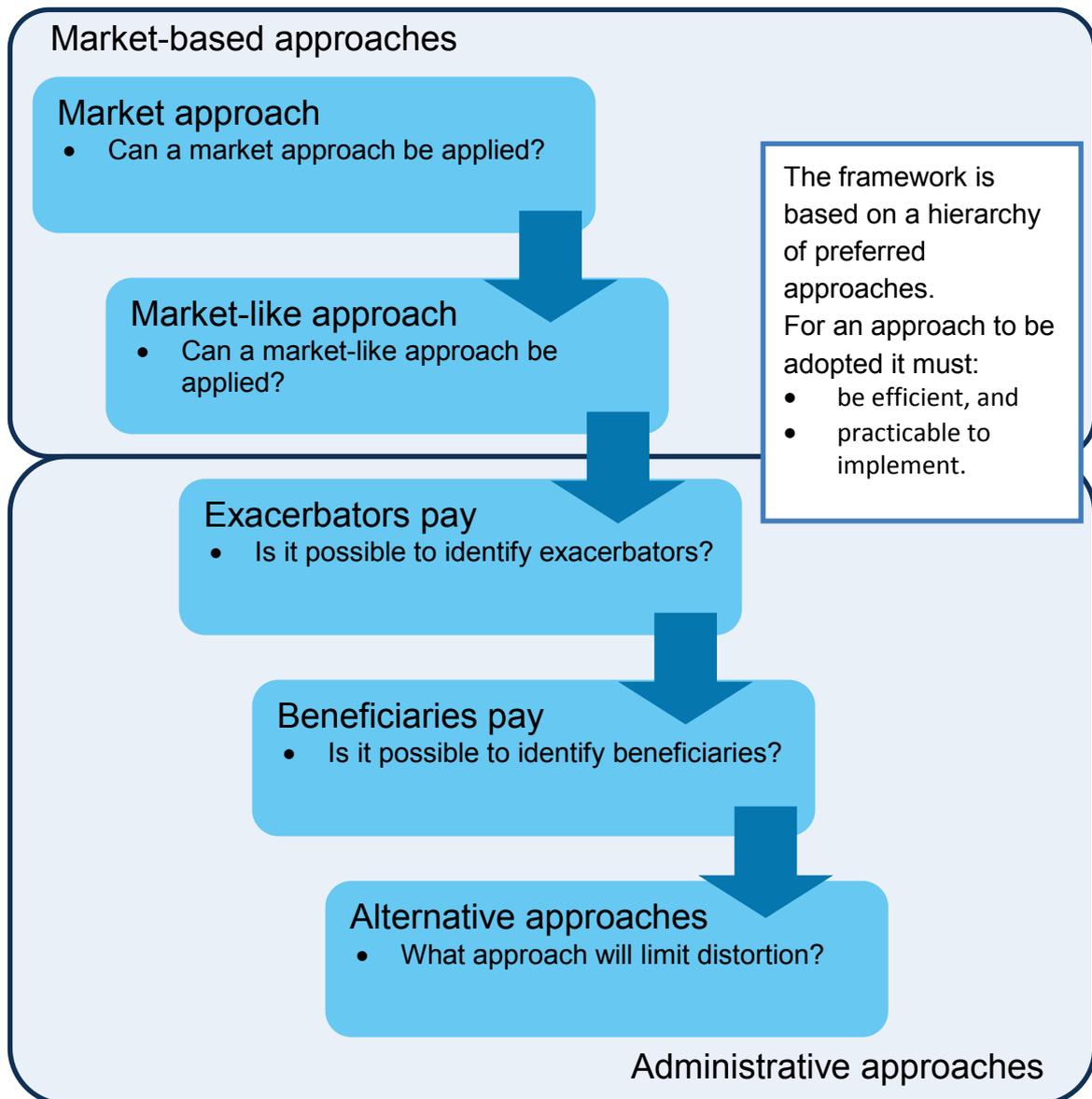
6.1 Statutory objective and decision-making framework

- 6.1.1 The Authority takes the view that the framework for decision making about options for distribution pricing should focus on the overall efficiency of the electricity industry for the long-term benefit of electricity consumers.
- 6.1.2 This overall efficiency refers to both efficient use of the distribution network and efficient investment in the electricity industry – investment in the distribution network and other networks, generation and demand-side management – and by electricity consumers over time:
- (a) efficient use of the network focuses on least-cost production and charging consumers the efficient marginal costs of production; and
 - (b) efficient investment focuses on the lowest cost development of the industry over time.

6.2 Decision-making and economic framework

- 6.2.1 The flowchart set out in Figure 7 outlines and summarises the Authority's preliminary view as to the decision-making process and economic framework that should apply to distribution pricing.

Figure 7: Preliminary view of decision-making and economic framework for distribution pricing



7. Implications of framework for pricing principles and information disclosure guidelines

7.1 Introduction

- 7.1.1 Having identified a framework that the Authority proposes should apply to distribution pricing it is appropriate to consider whether the pricing principles and information disclosure guidelines are consistent with the framework.
- 7.1.2 As discussed in section 2.2, the pricing principles are intended to guide distributors in developing their pricing methodologies, while the guidelines are intended to guide distributors about the information that they should routinely make available to enable parties to determine if a distribution pricing methodology is efficient.
- 7.1.3 The Authority considers that, because the guidelines relate to the information that should be provided rather than the development of prices per se, the guidelines would continue to be relevant even if the framework implied that another approach should be taken to pricing than that implied by the principles. In addition, the Authority considers that the guidelines are consistent with promotion of efficient use of and investment in distribution networks. The Authority therefore considers that the proposed decision-making and economic framework does not require any changes to the guidelines.

Q14. Do you agree that the guidelines are consistent with the proposed decision-making and economic framework and therefore do not require any changes? If you agree please explain why and, if not, please explain why not.

7.2 Consistency of pricing principles with decision-making and economic framework

- 7.2.1 The pricing principles and evaluation criteria relate to the actual development of and assessment of distributors' pricing methodologies. The Authority considers that the principles are consistent with the decision-making framework.
- 7.2.2 As noted in section 3, the Authority considers that decision-making about distribution pricing should focus on overall efficiency of the electricity industry for the long-term benefit of electricity consumers and, in particular, efficient use of distribution and transmission networks and efficient investment in the industry and in demand-side management. The Authority considers that the pricing

principles have an economic efficiency focus and are therefore consistent with the decision-making framework.

- 7.2.3 The proposed economic framework for distribution pricing establishes a hierarchy of pricing approaches consisting of market-based approaches, exacerbator pays, beneficiary pays and alternative charging options. The framework proposes that a decision to consider the next preferred approach would be because a more preferred approach raises efficiency and/or implementation concerns and does not adequately cover costs. Even if an approach only partially covers costs, under the framework it would still be appropriate to apply the more preferred approach to the extent possible provided it is efficient and practicable to implement. A less preferred approach would then be applied to the remainder.
- 7.2.4 The Authority considers that the principles can be incorporated into the hierarchy of approaches set out in the framework. The pricing principles are set out in Table 6.

Table 6: Pricing principles

<p>(a) Prices are to signal the economic costs of service provision, by:</p> <ul style="list-style-type: none"> (i) being subsidy free (equal to or greater than incremental costs, and less than or equal to standalone costs), except where subsidies arise from compliance with legislation and/or other regulation; (ii) having regard, to the extent practicable, to the level of available service capacity; and (iii) signalling, to the extent practicable, the impact of additional usage on future investment costs.
<p>(b) Where prices based on ‘efficient’ incremental costs would under-recover allowed revenues, the shortfall should be made up by setting prices in a manner that has regard to consumers’ demand responsiveness, to the extent practicable.</p>
<p>(c) Provided that prices satisfy (a) above, prices should be responsive to the requirements and circumstances of stakeholders in order to:</p> <ul style="list-style-type: none"> (i) discourage uneconomic bypass; (ii) allow for negotiation to better reflect the economic value of services and enable stakeholders to make price/quality trade-offs or non-standard arrangements for services; and (iii) where network economics warrant, and to the extent practicable, encourage investment in transmission and distribution alternatives (eg, distributed generation or demand response) and technology innovation.
<p>(d) Development of prices should be transparent, promote price stability and certainty for stakeholders, and changes to prices should have regard to the impact on stakeholders.</p>
<p>(e) Development of prices should have regard to the impact of transaction costs on retailers, consumers and other stakeholders and should be economically equivalent across retailers.</p>

- 7.2.5 Principles (a) and (b) emphasise the importance of exacerbaters pay. This is because principle (a)(iii) emphasises signalling the impact of additional usage on future investment costs and principle (b) implies that an incremental cost-based approach (which, as suggested in section 5.5, is a pricing method used to apply exacerbaters pay) is preferred over an alternative charging option.
- 7.2.6 Principle (c), while stating that prices must satisfy principle (a), emphasises that prices should be responsive to the requirements and circumstances of stakeholders. Principle (c)(ii), in particular, recognises the importance of market-based approaches by stating that prices should allow for negotiation. This is supported by both principles (c)(i) and (c)(iii) that emphasise that pricing approaches should be cognisant of both the alternatives available to customers and the economic efficiency implications of these alternatives.
- 7.2.7 While the principles require prices to satisfy principle (a) before principle (c), market-based approaches could be constructed that would satisfy principle (a). Further, principle (c) implies that a market-based approach should be considered provided the resulting price satisfies principle (a).
- 7.2.8 Principles (d) and (e) relate more to the need for prices to satisfy broader efficiency requirements rather than emphasising particular pricing approaches.
- 7.2.9 In relation to the individual principles, the Authority considers that principles (a), (c), (d) and (e) are unambiguously consistent with economic efficiency.
- 7.2.10 In relation to principle (b), the Authority agrees with the emphasis on incremental cost-based approaches over alternative charging options. The Authority considers that the statement “the shortfall should be made up by setting prices in a manner that has regard to consumers’ demand responsiveness, to the extent practicable” should be interpreted as requiring prices be set so as to minimise the impact of the charge on the use of the asset.
- 7.2.11 The preferred approach to meeting this requirement would be to set prices in a manner that is inversely proportional to consumers’ demand responsiveness. This pricing methodology is known as ‘Ramsey pricing’, and the Authority considers this methodology is consistent with economic efficiency. This is because such a charge seeks to minimise the impact on consumers’ demand for the service, as more demand responsive consumers would face a lower rate of charge than less demand responsive consumers.
- 7.2.12 An inferior option to ‘Ramsey pricing’ is a ‘postage stamp’ price, which applies at the same rate regardless of the degree to which a consumer’s use of the service is sensitive to price. If a postage stamp charge is applied, it should be applied across as broad a base as possible so the pricing impact on each party paying the charge, and therefore their use of the asset, is minimal.

7.2.13 In summary, based on the Authority's interpretation of the pricing principles, the Authority considers that the pricing principles are consistent with both the decision-making and economic framework.

- Q15.** Do you consider that the pricing principles and guidelines are consistent with the proposed decision making and economic framework? If you agree, please explain why. If you disagree please explain why not and how the principles should be changed.
- Q16.** Do you agree that pricing principle (b) should be interpreted as implying that where an alternative charging option is required prices should be set in a manner that minimises the impact of the charge on the use of the asset? If you agree please explain why. If you disagree please explain why not and please state how you consider this principle should be interpreted.

8. Conclusion and next steps

8.1 Conclusion on overall approach

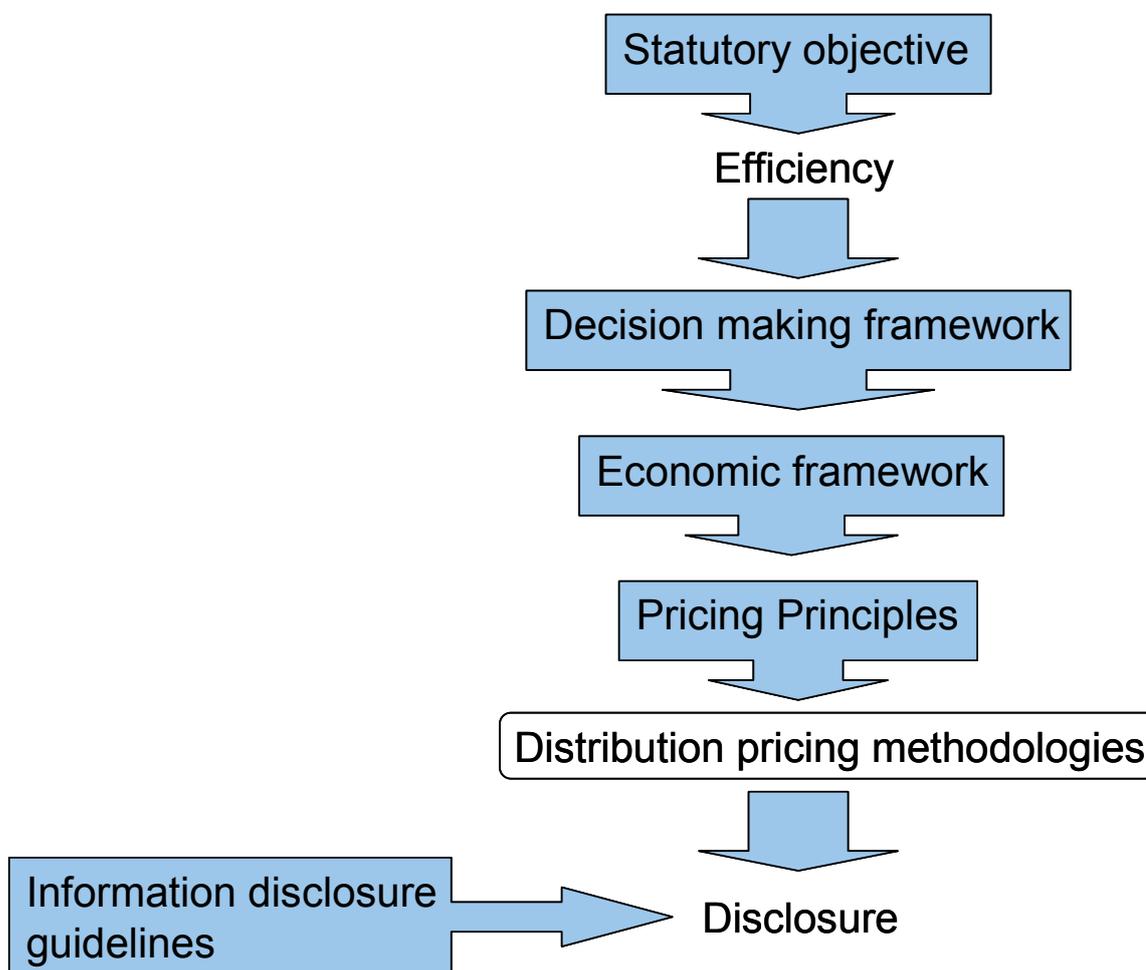
8.1.1 Consistent with its interpretation of the statutory objective, the Authority considers that decision-making about distribution pricing should focus on promotion of efficiency of the electricity industry for the long-term benefit of electricity consumers. The Authority's proposed economic framework for distribution pricing reflects this efficiency focus. The Authority considers that the information disclosure guidelines and pricing principles are also consistent with promotion of economic efficiency.

8.1.2 The Authority considers that, in developing their distribution pricing methodologies, distributors should continue to be guided by the pricing principles. However, in identifying which pricing approach should be preferred, the Authority proposes that distributors should follow the hierarchy established by the framework. For this reason the Authority proposes to use the framework as criteria for assessing distributors' application of the pricing principles.

Q17. Do you agree with the Authority's proposal to use the economic framework for distribution pricing as criteria for assessing distributors' application of the pricing principles? If you agree, please explain why and, if not, please explain why not.

8.1.3 The inter-relationship between the statutory objective, decision-making and economic framework, pricing principles and guidelines is summarised in Figure 8.

Figure 8: Relationship between statutory objective, decision-making and economic framework, pricing principles and information disclosure guidelines



8.2 Next steps and review process

8.2.1 Following submissions on this consultation paper, the Authority will consider:

- (a) whether to confirm the economic framework; and
- (b) depending on its decision in relation to (a), whether to confirm its application of the framework to the pricing principles and guidelines or whether any changes are required to the pricing principles and information disclosure guidelines.

8.2.2 Following this, the next steps are likely to be that:

- (a) first, the Authority will publish a decision paper that sets out its decisions and identifies the process and timetable for reviewing distribution pricing methodologies;

- (b) second, the Authority will issue a request-for-proposals for a party to review distributors' pricing methodologies;
- (c) third, once the reviewer had been selected, the review would be conducted. The Authority is planning to start the review in September/October 2012; and
- (d) fourth, the Authority would consider and publish the results of the review, which the Authority would seek to do by early 2013.

8.2.3 It is important to note that the next steps and the process for review that the Authority will adopt may change as a result of consultation. Any changes would be identified in the decision paper and on the Authority's website.

8.3 Timing issues

8.3.1 The Authority notes that some distributors have completed documentation and disclosure of their 2012 distribution pricing methodologies.

8.3.2 In addition, the Authority notes concerns expressed by distributors about the Authority reviewing distributors' pricing methodologies on the basis of a decision-making and economic framework that distributors subject to the review had yet to see.

8.3.3 The Authority recognises these concerns. The Authority emphasises that its review of distribution pricing methodologies is an ongoing process. The Authority recognises that distributors may face impediments to making significant changes to their pricing in a short timeframe. Accordingly, the Authority will be looking for distributors to align their pricing with the pricing principles and the economic framework in as timely a manner as they are reasonably able to achieve.

8.3.4 If the consultation did result in changes, the Authority would take this into account when undertaking the review. This would include ensuring that there was sufficient time before the review commenced for distributors to have the opportunity to revise and disclose alternative pricing methodologies should they wish to do so. Further, the Authority intends to take into account the context of the timing of consultation on the framework and implications for the guidelines and pricing principles in its consideration and commentary on disclosed information.

Q18. Do you have any comments on the proposed process for confirmation of the decision-making and economic framework and the Authority's review of distributors' pricing methodologies?

Q19. Do you have any comments on how the Authority intends to take into account the timing implications of this consultation and the Authority's review of distributors' pricing methodologies?

Appendix A Format for submissions

Question No.	General comments in regards to the:	Response
Q1	Do you agree with the Authority's interpretation of its statutory objective with respect to distribution pricing? If you agree, please explain why. If you do not agree, please explain how you consider the statutory objective should be interpreted with respect to distribution pricing and the reasons for your interpretation.	
Q2	Do you agree with the above application of the three limbs of the statutory objective to distribution pricing? If not, why not, and are there other examples of how distribution pricing can influence competition, reliability and efficiency?	
Q3	Do you agree that a market-based distribution pricing methodology would tend to promote efficiency in network use and in investment in distribution networks, generation, demand management and the electricity industry more generally? If so, what are your reasons? If you disagree, what are your grounds for disagreeing?	
Q4	Do you agree that market-based distribution pricing methodologies are likely to be more durable and stable than approaches involving administered charges? If so, what are your reasons? If you disagree, what are your grounds for disagreeing?	

<p>Q5</p>	<p>Do you agree distributors should use pricing methodologies that give preference to market-based approaches to distribution charges wherever such charges will be efficient and implementation will be practicable? If so, what are your reasons? If you disagree, what are your grounds for disagreeing?</p>	
<p>Q6</p>	<p>Do you agree the second, third and fourth ranked preferences should be for administrative approaches to distribution charges of exacerbators pay, beneficiaries pay and other charging options wherever such charges will be efficient and implementation practicable? If so, what are your reasons? If you disagree, what are your grounds for disagreeing?</p>	
<p>Q7</p>	<p>Do you agree these actions can exacerbate investment? Are there other actions and, if so, what are they?</p>	
<p>Q8</p>	<p>Do you agree that exacerbators should be identified by determining which party or parties have the ability to act differently, thereby avoiding the need to augment the network? Is there an alternative approach? If so, please provide details.</p>	
<p>Q9</p>	<p>Do you agree with the assessment of the price that should apply to exacerbators? Do you agree with the assessment of how exacerbators pay should apply in practice? Do you agree with the proposed approach for identifying the preferred option or options for applying exacerbators pay? Please provide explanations in support of your answers.</p>	

Q10	Do you agree these considerations should be taken into account under an exacerbators pay approach? Please provide an explanation in support of your view.	
Q11	Do you agree that these ways can be used to identify beneficiaries? Are there others? If so, please provide details.	
Q12	Do you agree with the assessment of the price that should apply to beneficiaries? Do you agree with the assessment of how beneficiaries pay should apply in practice? Please provide an explanation in support of your answer.	
Q13	Are there other alternative pricing options? Do you agree with the assessments of how incentive free and postage stamp pricing should be applied in practice? Please provide reasoning in support of your answer.	
Q14	Do you agree that the guidelines are consistent with the proposed decision-making and economic framework and therefore do not require any changes? If you agree please explain why and, if not, please explain why not.	
Q15	Do you consider that the pricing principles and guidelines are consistent with the proposed decision making and economic framework? If you agree, please explain why. If you disagree please explain why not and how the principles should be changed.	

<p>Q16</p>	<p>Do you agree that pricing principle (b) should be interpreted as implying that where an alternative charging option is required prices should be set in a manner that minimises the impact of the charge on the use of the asset? If you agree please explain why. If you disagree please explain why not and please state how you consider this principle should be interpreted.</p>	
<p>Q17</p>	<p>Do you agree with the Authority's proposal to use the economic framework for distribution pricing as criteria for assessing distributors' application of the pricing principles? If you agree, please explain why and, if not, please explain why not.</p>	
<p>Q18</p>	<p>Do you have any comments on the proposed process for confirmation of the decision-making and economic framework and the Authority's review of distributors' pricing methodologies?</p>	
<p>Q19</p>	<p>Do you have any comments on how the Authority intends to take into account the timing implications of this consultation and the Authority's review of distributors' pricing methodologies?</p>	