

Feedback

in response to the Electricity Networks Association of New Zealand's

“New Pricing Options for Electricity Distributors - A discussion paper for industry feedback”

provided by Allan Carvell; 17 December, 2016

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I welcome the opportunity to provide feedback on the ENA's discussion paper.

While I currently operate as a consultant to the energy sector this submission is provided in my personal capacity. The views expressed in this submission are mine and are not intended to represent the views of any other party, especially those with whom I may be or may have been engaged in a professional capacity.

I have spent nearly 25 years in the energy sector, in particular in electricity transmission and distribution activities and gas transmission and distribution activities. My experience has centred on financial, regulatory and commercial functions and I have held executive management level responsibility for pricing in each of the industry sectors noted above. I have academic qualifications at graduate level in accounting and economics and at post graduate level in economics.

There is no confidential material in this submission.

The ENA's discussion paper

The Electricity Networks Association of New Zealand ("the ENA") has issued a discussion paper on new pricing options for electricity distributors ("the discussion paper").¹ In the context of a changing environment, where *"[n]ew technologies are ushering in innovative ways for consumers to use, generate, store, and manage the electrons flitting through their household's wires"*,² the discussion paper aims to *"... develop a resource document intended for electricity distribution pricing practitioners and other interested stakeholders, which provides technical guidance on matters relating to cost reflective pricing structures."*³

In the discussion paper the ENA identifies that *"[t]he end goal is to develop a report that provides practical guidance to ENA members on types of pricing and implementation, and which facilitates alignment."*⁴ The discussion paper *per se* is not intended to deliver that goal, but is a step on the pathway towards that goal.

The discussion paper also notes that *"[t]his work fits into a wider sector interest in efficient network pricing and the impact of technology and market changes on the broader energy sector."*⁵ To facilitate movement towards its goal and to capture (and hopefully reflect) a wider range of views the ENA has sought feedback on the discussion paper.

Summary of feedback

There is little doubt that technological advancements are highly likely to have a fundamental impact on the the way electricity is produced and used and, therefore, on a number of key aspects of owning, operating, investing in and pricing the services delivered by electricity distribution networks. At the same time, these changes will have a profound impact on the choices available to consumers as to how they source and use electricity. Overlaying all these factors are concern for the environment and overall economic efficiency and the maximisation of welfare.

¹ ENA; "New Pricing Options for Electricity Distributors - A discussion paper for industry feedback"; November 2016

² *ibid fn1*; page iv

³ *ibid fn1*; page vi

⁴ *ibid fn1*; page 2

⁵ *ibid fn1*; page vi

In the discussion paper the ENA sets out arguments for reforming the format of distribution charges to better reflect the nature of the underlying costs. In other words, the variable element of the current two part tariff should be much less responsive to changes in level of energy consumption but should, rather, reflect the impact of usage on the underlying level of investment to provide available capacity to users (as and when they want it).⁶ I think that the case for making this change is compelling as it provides for clearer signals about the use of existing facilities (e.g. assets for which the costs are sunk and/or fixed and where under utilisation or stranding would be economically inefficient).

However, I have some reservations about the content of the discussion paper in that:

- the overarching context of technological change and empowerment of consumers is paradoxically excluded from the scope of the discussion;
- a stronger sense of service definition is a necessary basis for any discussion about pricing structure - however the discussion of service definition in the paper, especially in the context technological change, is cursory;
- the economic arguments for marginal cost signalling in pricing would have more relevance if the scope of the discussion was not constrained (as noted above) and if the analysis was not limited to the two-part tariff to the exclusion of capital contributions which largely do (or at least could) satisfy a significant part of that signal;
- the discussion paper whitewashes the issue of stakeholder engagement by:
 - excluding proposals for meaningful involvement of stakeholders who will have the 'power of choice' in what may develop into a market for services at the boundary of the networks;
 - not adequately addressing the role of retailers in repackaging distribution charges into offerings that meet consumers' needs for choice;
 - not giving sufficient consideration to the option of a mandatory pricing scheme under the auspices of the regulator (as exists for transmission pricing) on the basis of the uniqueness of circumstance between different distribution business - in my experience this view of uniqueness is little more than sophistry driven by individual or corporate desires for independence and self-determination, at the expense of consumer welfare.

Limitation on Scope

A primary driver for the review of distribution pricing is the impact (current and future) of technological change (and the changes in consumer behaviour and choice that brings). However, the scope of the discussion paper is set to ignore any practical interaction between decisions by consumers to invest in distributed generation and/or storage and the pricing of the distribution network because the "export" element of the Electricity Authority's ("EA") service definitions is specifically excluded.⁷ That the EA is reviewing the Distributed Generation Pricing Principles seems a poor reason to ignore this element of the service given its growing importance. In any case, the economic principles that should be applied are not likely to be significantly different when

⁶ Two part tariffs are a widely accepted approach to pricing for infrastructure-intensive services. The general format is to have a fixed element and a variable element making up the total tariff.

⁷ *ibid* fn1; page 5

considering consumer investment in these technologies, as far as the impact on the network is concerned, than for any other investment decision related to the network service.

Service definition

A discussion about pricing can be of little value without establishing a clear view on the service definition. This seems axiomatic when terms such as ‘service-based pricing’ are being used.⁸ In the discussion paper, the discussion about service definition is relatively cursory. While the “key services” identified by the EA are cited, it is not clear that the ENA (or its members) necessarily agree that these services are correctly defined or are useful for engaging with consumers and for pricing services.

In the context of the challenges facing EDBs as a result of technological change, service definitions that clarify that ‘having capacity available *at the flick of a switch* is a key part of the service offering’ provides a basis for engaging with consumers that have, or might be thinking about, investing in distributed generation and/or storage technologies. Requiring access to capacity, for example as a back-up service, can be likened to having an insurance policy (where premiums are paid even if a claim is not made). In the case of the distribution network there are tangible assets in place to provide the service which, as the discussion paper notes, result from fixed and/or sunk costs.

The consumer may choose to abandon the grid entirely if they are not prepared to face the cost of the insurance policy, in which case it is assumed that the connection to the network will be removed.⁹ If the insurance policy is taken out then the capacity must be maintained, by the distributor, within the network to serve the customer if/when called upon to do so.

LRMC and capital contributions

The discussion paper talks extensively about cost-reflective pricing and, in relation to “*Reflecting upgrade costs of network peaks*” notes that:

“Efficient distribution pricing has the benefit of signalling to consumers the long-run cost of capacity upgrades. This is often referred to as long run marginal cost (LRMC) pricing.”¹⁰

Long run marginal cost-based prices reflect the cost of providing additional units of capacity. In most, if not all, cases EDBs already have processes and policies to price the cost of upgrades for consumers. This is generally through a capital contributions policy (sometimes referred to as a connections and extensions policy). It is strange that a discussion on pricing, that centres on signalling LRMC in order to satisfy the desire for cost-reflectivity, should completely ignore the role of capital contributions.

Examples of the disclosed purposes of capital contributions are included in an Appendix to this paper.

Engagement

The reasons for exploring new pricing options are described in the context of “[t]he advent of technological advances ha[ving] the potential to have a significant impact on the ways in which the

⁸ *ibid fn1*; page 5

⁹ At some point the economics of distributed generation and/or storage (for example) may be such that ‘grid parity’ is truly reached. In a workably competitive market at that point the price of the network supplied service would reduce.

¹⁰ *ibid fn1*; page 20

electricity industry operates".¹¹ These changes mean "... *that consumers are now becoming the central focus point in a transformed supply chain*".¹² Given the importance of consumers *in a transformed value chain*, does the ENA consider there is an opportunity for more direct consumer involvement, for example through participation in the DPWG process? Consumers (potentially 'prosumers') and other stakeholders should want to ensure that pricing of the monopoly service is transparent, robust and efficient.

Similarly, much of the discussion paper is about 'sending signals' to consumers so they make better informed decisions. Distributors generally do not bill consumers directly but, rather, distribution charges are bundled by retailers for the purpose of billing. In some senses it might be seen as the retailers role to package up retail offerings to provide consumers with the signals and flexibility to make the critical investment-related choices. It might, therefore, also be appropriate for stronger retailer representation in future DPWG work on this topic.

The discussion paper is pitched as fitting into a wider interest in efficient distribution pricing. Much as is the case with transmission pricing, the pricing of distribution services has a wide impact. Distribution pricing truly touches everyone in a modern economy such as New Zealand. Electricity distribution is both an essential service and (for the time being at least) a natural monopoly. The ability of an electricity distributor to charge for its services is akin to the ability to levy or tax consumers. In these circumstances consumers could legitimately want more engagement or empowerment in the decision making process - or might want to defer to a regulatory body such as the EA.

Distribution pricing is essentially no different from transmission pricing. The distinction that there are 29 distribution businesses, each of which faces unique circumstances that warrant unique pricing approaches, is simple sophistry in my view. At the very least, the key differences that might exist should be capable of being reasonably catered for within a common pricing framework or methodology.

¹¹ *ibid fn 1*; page vi

¹² *ibid fn 1*; page vi

Appendix: Examples of the disclosed purpose of capital contribution policies

Orion Network “Connections and extensions policy”:

“This document states the commercial terms Orion applies for extensions to its network, for new connections in areas with existing supply, and for alterations to existing connections. Orion has introduced these commercial terms to apply from 1 April 2013.

Orion’s network is constantly growing, fuelled by demand for new connections and increased loads at existing connections. To be fair to the established consumers, we believe it is important that the resulting reinforcement and network extensions are priced appropriately. This document outlines the economic considerations Orion has incorporated when establishing these commercial terms.

Our economic aim is to apply efficient pricing policies which reflect the full economic costs of providing our delivery service. With this approach, consumers (particularly prospective consumers) make efficient decisions about which form of energy to use, and where to locate new load.”

Vector Networks “policy for determining capital contributions on vector’s electricity distribution network”:

“... to send the right signals to consumers to ensure new investments in the network are as efficient as possible, those consumers need to be charged for the full or proportionate cost of those assets (new and existing) they will be using. However, Vector’s distribution prices are only sufficient to recover a portion of that cost (particularly in relation to any new assets). Vector may use capital contributions to fill the gap. ...

Vector’s capital contribution policy has been developed with the following in mind:

- (a) The addition of a new connection should not make existing consumers worse off either now or in the future.*
- (b) Ideally, the addition of a new connection should benefit existing consumers as the new connection should contribute to shared costs and assets.*
- (c) The cost of providing new connection services should be determined using a “but for” approach that identifies the costs attributable to the new connection.*
- (d) Capital contributions should incentivise improved utilisation of the electricity distribution network and not incentivise inefficient construction (for example: over-sized network assets).”*

Horizon Energy “Capital Contributions Policy”:

“The purpose of this document is to describe the criteria and methodology (“the Policy”) that Horizon Energy use to determine capital contributions that will be applicable to all new connections made to the network and also to requests for increased demand. ...

When a new connection is required to be made to the Horizon Energy network there are two types of investment made. The first involves the physical assets directly involved in extending the network to the new customer’s point of connection. Typically for a domestic connection, this will be the assets from the existing network to and including a new connection pillar on the road boundary or an overhead service line to the house. The second area of investment is in the backbone of the network which provides the overall capacity to carry energy from the National Grid to the area concerned. This typically involves the 33kV lines and Zone substations that can only be constructed in large increments.

The first case, involving the assets associated with the specific connection, is funded 100% by the customer concerned.

The second case involving the provision of existing and future backbone capacity is funded by cash flow from existing operations, new debt, and from new customers through the Infrastructure Development Contribution.”

Wellington Electricity “Customer Contributions Policy”:

“Within the electricity industry, it is standard business practice for distribution businesses to secure contributions from customers towards the cost of carrying out customer initiated augmentation¹ works that are not recovered through standard lines function services charges (tariffs). This ensures other customers remain cost neutral from the new connection.

The alternative process is to have no customer contribution for new works and all existing customers face an increase in lines function services charges to recover new connection costs of the new connection. we consider that the “causer pay” approach is an acceptable practice so that existing customers can maintain standard charges.*

we requires a capital contribution when the cost of the works will not be fully recovered through ongoing tariffs and/or requires expenditure that is not compensated for (through existing tariffs) under the DPP determination set by the Commerce Commission.”*