Multiple Trading Relationships

How can consumers choose multiple electricity service providers?

Consultation Paper

28 November 2017

Executive summary

The Authority has identified barriers that limit consumers' ability to use electricity or electricity services provided by more than one party at the same time, at the same location. The purpose of this project is to determine whether these barriers inefficiently limit consumer choice. This paper discusses:

- how technological developments are changing the electricity sector and providing consumers with the ability to take a more active role in how and when they use electricity
- our concerns that current industry rules, systems and processes may limit how much consumers benefit from current and future technological developments, specifically their ability to use electricity or electricity services supplied by more than one party at the same time, at the same location. This includes processes that limit consumer's ability to share their data, especially consumption data, with electricity service providers
- the specific barriers we have identified that stop consumers from using electricity or electricity services provided by more than one party at the same time, at the same location
- the broad benefits and costs we foresee from removing these barriers and
- the industry rules, systems and processes that may need to change in order to remove these barriers.

The purpose of this paper is to seek stakeholder feedback on the matters outlined above. We will use your feedback to help identify the size of the barriers and whether there might be a net long-term benefit to consumers from removing them.

The electricity industry is changing

The electricity industry is changing fundamentally. Technologies such as solar panels, batteries, electric vehicles and smart controls for equipment and appliances—like hot water cylinders—have seen considerable reduction in costs and improvements in capability. These changes, coupled with improvements in data collection and analysis; and transmission of data, are triggering change to the electricity industry and markets.

These changes mean consumers are more capable of choosing when and how they use electricity. Consumers can use solar panels and batteries to participate directly in the market as sellers of electricity and related services. At the same time, suppliers are offering innovative products and services that realise the benefits of technologies like batteries and solar panels and take advantage of the improvements in information and communication technologies.

The telecommunications, transport, accommodation and banking sectors are experiencing a similar change. New technology and new ways of doing business are giving consumers in these sectors more choice. More choice allows consumers to select services that are better tailored to their needs and improves competition in the electricity sector for the long-term benefit of consumers.

Market rules may limit the benefits that consumers can enjoy from these changes

While technological developments are providing consumers with the ability to do more, we have concerns that market rules may prevent consumers from enjoying the full benefits of the technology at their disposal.

The sector is moving away from the 'bulk supply' model that has characterised its operation over the last one hundred years or so.[1] In this model, consumers are assumed to have a single one-to-one relationship with their retailer, which looks after their electricity needs.[2]

Market rules, systems and processes have developed on the basis of the traditional one-to-one consumer/retailer relationship.

A more dispersed model is emerging as technology and new business models let consumers choose to actively participate and interact with electricity services companies to buy or sell electricity services. This model is challenging the assumption that a consumer wants or needs a single retailer to provide all of their electricity related services at a single location.

Current market rules, systems and processes were not designed for consumers to use multiple electricity services at the same time at the same location.

We are concerned that they prevent or constrain new ways of doing business from operating efficiently. If this is the case, it would unnecessarily limit choice and consumers' ability to use multiple electricity services at the same time, at one location. We define this as a consumer establishing *multiple trading relationships*.

The purpose of this project is to identify whether barriers exist that inefficiently limit a consumer's ability to consume electricity or electricity services provided by more than one party at the same time, at the same location.

We use an intentionally broad definition of *multiple trading relationships*. The term *trading relationship* is not a reference to a *trader*, as defined in the Electricity Industry Participation Code 2010 (the Code), although it is captured within our definition.[3]

A multiple trading relationship means a consumer uses multiple electricity service providers at the same time at the same location. Electricity service providers supply services that help consumers to optimise their electricity use and participation in the electricity market.[4]

We have identified two constraints to a consumer establishing multiple trading relationships

We have identified two constraints to a consumer establishing multiple trading relationships.

1. The current industry rules (those provided by the Code and in some electricity related regulations) and processes are based on a one-to-one relationship between a consumer and a retailer and prevent consumers from having more than one retailer at a location. For example, a consumer with rooftop solar panels is unable to buy electricity from one retailer and sell excess generation from their solar panels to another retailer.
2. Electricity service providers, other than the consumer's sole retailer, face barriers to obtaining the data needed to provide the service the consumer has chosen, or would like, to

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1 In this model, consumers are passive participants at the end of a one-way supply chain comprising of large (often remote) generators at one end that produce electricity and use the transmission and distribution networks to transport this electricity from wherever the electricity is generated to each household and business in the country.

2 Consumers billed directly by their distributor are an exception to this.

3 The Code defines a *Trader* as a retailer or a generator or a purchaser who – (a) buys electricity from the clearing manager; or (b) sells energy to the clearing manager; or (c) enters into an arrangement with another retailer or generator or purchaser to buy or sell contracts (or parts of contracts) for electricity for the purposes of the Code.

4 It is important to note that what a consumer considers optimal will depend on the importance they place on a range of factors, such as the environment, cost, social justice, the local economy, service reliability and demand flexibility.

receive from them. This barrier is a consequence of the industry systems, processes and data flows being designed on the basis of a one-to-one consumer/retailer relationship. One implication of this outcome is that meter data, including consumption data, is channelled through the consumer's retailer.

The first is a hard constraint. It stops consumers from having more than one retailer at the same location. The second is a soft constraint. It doesn't necessarily stop electricity service providers from accessing the data they need (for which they have consumer approval to access), but they face barriers that increase transaction costs.

The opportunities for consumers to adopt multiple trading relationships are just beginning to emerge. However, they could be prevented from doing so under the current arrangements because retailers have the ability and incentives to impair or prevent other parties from forming a contemporaneous relationship with a consumer at the installation control point (ICP).

Accordingly, each barrier to consumers establishing multiple trading relationships could be addressed by removing (or reducing) their retailer's ability to impose the barrier. Alternatively, the barriers may be able to be addressed by altering retailer incentives, which may involve different costs and a different pattern of outcomes evolving over time.

Lowering the barriers to consumers establishing multiple trading relationships will bring benefits but will incur costs

Making it easier for consumers to have multiple trading relationships will have benefits and costs. The benefits are likely to come from more choices for consumers, greater competition and innovation in business models and services, a more reliable supply and a more efficient electricity industry.

Consumers are increasingly engaging with electricity service providers that offer them complementary services that assist them to optimise their electricity costs and/or use. This may come in the form of a price comparison website, a home energy management system or a demand response service. Each of these services relies on information about their customer's consumption patterns. At the same time, there are existing and start-up businesses wanting to test the opportunities of supplying services to consumers in parallel to the traditional retail service.

By constraining consumers from establishing a relationship with more than one party at a single location, industry rules and processes may be inefficiently limiting consumer choice and competition. For example, consumers cannot sell their surplus solar power to a second retailer unless they install a second meter and bear the costs of establishing and maintaining a second ICP identifier.

Similarly, margins are small in competitive markets. Minor barriers can have a considerable effect on a firm's overall margin and artificially limit the number of market participants and therefore choice and competition.

Some new services are based on low-margin business models that rely on automation and digital data exchange. These services may be hindered by rules and processes that limit the extent to which such activities can be incorporated into a service provider's operations.

Changes would be needed to better enable multiple trading relationships

Multiple trading relationships would involve changes to how things are currently done.

The barriers to multiple trading relationships could be addressed by reducing retailers' ability or incentives to impose them.

Retailers' ability to impose these barriers is a result of industry rules and processes. Accordingly, it is likely that industry rules and processes will need to change if we are to remove or diminish retailers' ability to do this. there are likely to be costs associated with changing industry rules and processes. We are interested in understanding these costs.

We may need to amend the Code to make it easier for consumers to be able to have multiple trading relationships. Changes may also be needed to industry processes and market operation service provider systems. Some participants may need to update their systems and operating practices.

We have identified the industry systems and processes that we think may need to change to remove retailers' ability to limit consumers from establishing multiple trading relationships. These include:

- the registry and switching processes
- market operation systems and processes, such as the data system and exchange of information with the clearing manager, reconciliation manager and between industry participants would need to be amended to accommodate multiple trading relationships
- the process for selecting meter functionality, recording and exchanging meter data
- consumer-related responsibilities like the arrangements for medically dependent and vulnerable consumers.

In contrast, however, it's unlikely that many, if any, of these changes to industry rules and processes would be needed if we focused on removing retailers' incentives to inhibit consumers establishing multiple trading relationships.

Contents

Tables

No table of figures entries found.

Figures

1 We want your comments

1.1 We want your views on the extent to which current market arrangements prevent a consumer from dealing with more than one electricity service provider at the same time, at the same location.[5]

1.2 We also want your views on the merits of removing these barriers, including how these barriers could be removed and the possible costs and benefits of removing them.

1.3 Your comments will assist us to establish the costs and benefits of making it easier for consumers to choose multiple trading relationships.

1.4 If comments suggest there are benefits from further investigation, the Authority is likely to request the Innovation and Participation Advisory Group to consider how to make multiple trading relationships easier and whether doing so would deliver long-term benefits to consumers.

We want consumers to have choices about electricity services

1.5 The purpose of this paper is to identify any inefficient barriers to a consumer trading electricity or electricity services with more than one party at the same time, at the same location.[6]

1.6 Most households buy electricity from a single electricity retailer. But technological innovation means more consumers are looking and able to establish relationships with other electricity service providers. We are investigating ways to reduce inefficient barriers to these multiple trading relationships.

1.7 A multiple trading relationship means a consumer contracts with multiple electricity service providers at the same time at the same location.[7] In this context, the term *trading* is not a reference to a *trader*, as defined in the Code.[8]

1.8 An electricity service provider is any provider offering a service that assists consumers to improve their electricity use.[9] This is a broad definition that could range from a price comparison website to a traditional retailer.

1.9 For example, it could include a consumer with roof-top solar panels buying electricity from one retailer and selling their excess generation to another retailer. In addition to these relationships, the consumer could also engage a load aggregator to manage use

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5 For the remainder of this paper, where we refer to trading electricity or electricity services with more than one party at the same time, at the same location, the phrase *same location* refers to an individual ICP.

6 Trading can mean buying or selling.

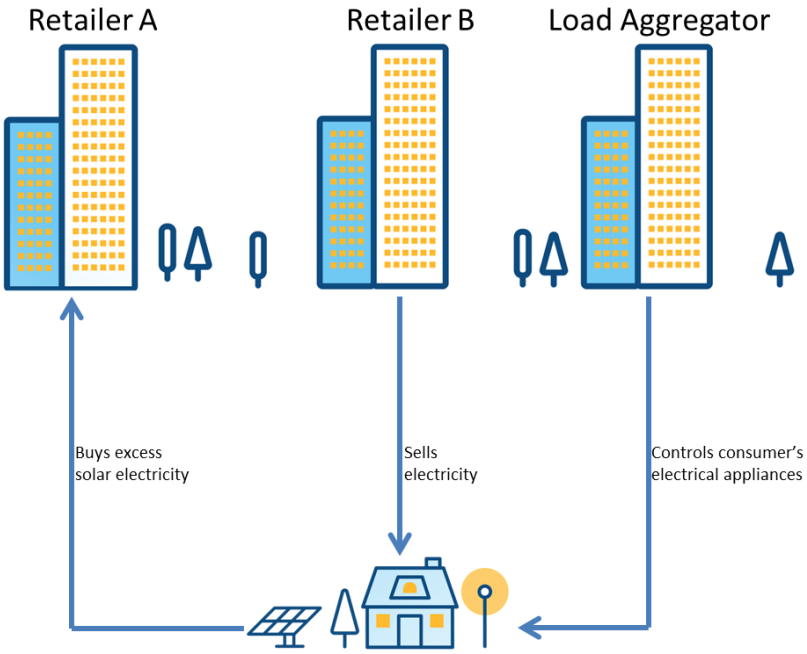
7 The reference to a single point of connection is important. Anyone can have multiple trading relationships across multiple points of connection. For example, a supermarket chain could have a different retailer for each of its premises. However, it could not have multiple retailers at individual premises (assuming that each premises has a single electricity connection). For brevity, where this paper refers to a consumer establishing multiple trading relationships or multiple trading relationships in general, this includes the reference to a single point of connection.

8 The Code defines a *Trader* as a retailer or a generator or a purchaser who – (a) buys electricity from the clearing manager; or (b) sells energy to the clearing manager; or (c) enters into an arrangement with another retailer or generator or purchaser to buy or sell contracts (or parts of contracts) for electricity for the purposes of the Code.

9 It is important to note that what a consumer considers optimal will depend on the importance they place on a range of factors, such as the environment, cost, social justice, the local economy, service reliability and demand flexibility.

of their remotely controlled appliances (heat pump, battery and electric vehicle). Figure 1 provides a stylised example of a possible multiple trading relationship.

Figure 1: Stylised example of a multiple trading relationship



1.10 Multiple trading relationships are about choice. They are about making it easier for consumers to make choices about the electricity or the electricity services they use.[10] Multiple trading relationships are also about making it easier for suppliers to offer these services to consumers, thereby promoting competition. It could also improve reliability and the efficient operation of the electricity industry.

The traditional one-to-one supply model is being challenged

1.11 Most household consumers, and many commercial and industrial consumers, interact with the electricity market through one retailer. This retailer manages the interactions required for supply of electricity to the consumer, such as with the local distributor, a metering equipment provider (MEP),[11] the wholesale market and other electricity market processes. The retailer is technically referred to in the Code as a trader.[12] We use the terms trader and retailer interchangeably.

1.12 This one-to-one supply model is changing. We know that consumers are choosing to interact with electricity service providers other than their retailer. That is, there are some services that result in multiple trading relationships under the current industry framework. Some examples are:

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10 Electricity is a good. Electricity services include use of the distribution network. For ease of reading, the term service is used in this paper to mean electricity and electricity services.

11 Metering equipment providers are responsible for managing the metering service on behalf of, in this instance, retailers.

12 The Code defines a trader as a retailer or a generator or a purchaser who – (a) buys electricity from the clearing manager; or (b) sells energy to the clearing manager; or (c) enters into an arrangement with another retailer or generator or purchaser to buy or sell contracts (or parts of contracts) for electricity for the purposes of the Code.

(a) A small number of household consumers are storing electricity in batteries, then using the stored electricity to provide network support to Transpower. In this case, the consumer is buying a service (electricity supply) and also selling a service (network support).

(b) Within the context of this paper, a price comparison website is also considered an electricity service provider because they assist consumers to lower their electricity costs. The price comparison website, powerswitch.org.nz was visited over 520,000 times in 2016.

1.13 We also know that other businesses are keen to supply energy services to consumers in parallel with the consumer's (incumbent) retailer. For example, a business might offer a home energy management system that helps consumers control electricity use so they use less when electricity prices are highest. A range of parties could provide these energy services, including for example, load aggregators, distributors or other retailers.

1.14 However, the electricity market arrangements are designed around the one-to-one relationship between a consumer and a retailer. In particular, the Code was drafted on the assumption that a single retailer would be responsible for supply of electricity to a consumer (at an ICP). This requirement makes it difficult, if not impossible, for a consumer to have a relationship with multiple electricity service providers at the same time.

We have a comprehensive work programme focused on innovation and more participation

1.15 The *Multiple trading relationships* project is one of a set of projects focusing on reducing inefficient barriers to participation in the electricity industry. The *Multiple trading relationships* project focuses on barriers that prevent or constrain consumers choosing multiple trading relationships. Related projects are:

(a) *The Enabling mass participation* project's purpose was to identify any 'gaps' in the work programme to reduce inefficient barriers to participation. The IPAG will undertake an *Equal access* project, focusing on the arrangements that electricity network companies have for parties to access their networks, particularly in regard to companies using their own network to compete against other parties using their network or when they supply their own support services that could be provided by competitors. It is important that all parties have confidence network companies are providing a level playing field by treating everyone equally.

(b) The *Data and data exchange* project is a forward looking check for changes to the data system underpinning market financial transactions. A key question is whether the data system can manage more parties participating in the market, more transactions and more data.

(c) The *Default distribution agreement* project is to make sure the contractual relationship between a distributor and a retailer promotes efficient exchange of the distribution service and promotes competition in the retail and related markets.

(d) The *Distribution pricing* project is to promote more efficient distribution pricing structures. More efficient pricing will provide parties using distribution networks with the best possible information about the cost or value of using the network. This will encourage more efficient use of, and investment in, the distribution network and promote competition.

1.16 More information about these projects is available from the Authority's 2017-18 work programme.[13] Structure of this paper

1.17 We have organised this paper as follows:

(a) Chapter 2 discusses how the electricity industry is changing due to innovation in technology and business.

(b) Chapter 3 discusses the context in which the electricity systems and processes were designed and why they present a barrier to multiple trading relationships.

(c) Chapter 4 discusses the possible benefits of enabling multiple trading relationships.

(d) Chapter 5 discusses the costs of making changes that may be needed to remove or reduce the barriers to consumers establishing multiple trading relationships.

How to make a submission

1.18 The Authority's preference is to receive submissions in electronic format (Microsoft Word) in the format shown in Appendix A. Please email electronic submissions to submissions@ea.govt.nz with "Multiple trading relationships consultation paper" in the subject line.

1.19 If you cannot send your submission electronically, post a hard copy to either of the addresses below, or fax it to 04 460 8879.

Postal address	Physical address
Submissions Electricity Authority PO Box 10041 Wellington 6143	Submissions Electricity Authority Level 7, ASB Bank Tower 2 Hunter Street Wellington

1.20 The Authority intends to publish every submission it receives, unless there are legitimate reasons for not doing so. If you believe that we should not publish any part of your submission, please:

(a) clearly specify which part/s of your submission are confidential and should therefore not be published

(b) explain we should not publish that part/s

(c) provide a public version of your submission that excludes the confidential sections.

1.21 If you indicate there is part of your submission that should not be published, we will discuss this with you before deciding whether to not publish that part of your submission.

1.22 However, please note that all submissions we receive, including any parts that we do not publish, can be requested under the Official Information Act 1982. This means we would be required to release material that we did not publish unless good reason existed under the Official Information Act to withhold it. We would normally consult with you before releasing any material that you said should not be published.

[13] The Authority's work programme can be accessed here: http://www.ea.govt.nz/about-us/strategic-planning-and-reporting/our-work-programme/

When to make a submission

1.23 Please deliver your submissions by **5pm** on **27 February 2018**.

1.24 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 The electricity industry is changing

2.1 The electricity industry is changing. Household, business and industrial consumers have increasing choice and control of their electricity use.

2.2 The telecommunications, transport, accommodation and banking sectors are experiencing a similar change. For example, technology made it possible for businesses like Uber and Airbnb to emerge and compete for transport and accommodation services. These firms use growing technological capability to establish new business models and provide low-cost methods for matching buyers and sellers with spare capacity, such as a spare room or an infrequently driven vehicle.

2.3 Technologies such as solar panels, batteries, electric vehicles and smart controls for equipment and appliances—like 'smart' hot water cylinders—have seen considerable reduction in costs and improvements in capability. These changes, coupled with improvements in data collection and analysis, are triggering change to the electricity industry and markets.

2.4 Technology is making it possible for consumers to behave differently in the electricity sector. It provides low-cost opportunities for new sources of generation, storage and demand response.[14]

2.5 Solar panels, batteries, home energy management systems, remote communication, sensor devices, improving computer software capability are and will change the traditional relationship consumers have with the electricity industry. The capability of 'behind the meter' technology allows more consumer interaction with electricity markets.[15] For example, many household whiteware manufacturers now build their goods (for example, heat-pumps and refrigerators) with remote control capability. This potentially provides consumers or their agents with more choice and control in electricity use. For example, third parties could control a number of elements of a consumer's consumption to help maintain the reliability of the transmission grid or a distribution network by reducing load a peak levels of network congestion.

The change is well underway

2.6 There are many examples from New Zealand, and internationally, of how the electricity industry and markets are changing. Some local examples are:

(a) A peer-to-peer electricity trading platform was launched in early-2016. It matches owners of solar panels that want to sell surplus electricity with consumers that want to buy locally.[16]

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14 Demand response allows electricity consumers to reduce their electricity use for a period of time in response to changes in electricity prices or in exchange for financial compensation. Demand response is intended to alter the timing or level of instantaneous demand or total electricity consumption.

15 The meter has traditionally been considered to be the end of the supply chain for electricity services. Features such as house wiring and other electrical items such as fridge, solar panels, washing machine etc that are located on a consumers premises are considered to be 'behind the meter'. 'Behind the meter' has commonly been used as a synonym for something that is outside of the control of the electricity industry. Consumers who allow distributors to control their hot water tanks to support their service are a prominent exception to this.

16 This peer-to-peer trading platform is part of an integrated retail service. Only consumers who use this retail service are able to use the peer-to-peer network. P2 Power is available to consumers connected to the Vector network. Go to https://p2power.co.nz/ for more information.

(b) More than 20,000 residential consumers buy electricity from retailers at the wholesale price plus network and other charges. Arrangements like this have become possible because most households now have smart meters.[17] Several other retailers offer innovative pricing, for example, retail offers include providing a free hour of power every day, buying electricity in 'packs' of electricity and an energy 'club' that charges all customers (new and existing) the same price.

(c) A retailer started a trial offer to commercial customers in September 2016 which involves installing multiple 8 kWh batteries. The battery system allows the retailer to aggregate and remotely control the batteries. The commercial consumers can take advantage of lower 'time-of-use' rates to recharge the batteries and discharge when the prices are higher, and automatically respond to wholesale and distribution price signals.[18]

(d) A firm aggregates the electricity used by industrial and commercial consumers across the country which it sells into the instantaneous reserve market.[19] The consumers supplying the demand response reduce their consumption or take their operations off the grid for short periods of time. In doing so, they help maintain system frequency and reduce the potential for the lights going off.

(e) A distributor started trialling a 1 MW battery in early 2016 to better understand the impact of the commercial application of battery technology, including the opportunity to reduce the distributor's costs.

(f) The grid owner operates a 'demand response programme' that pays programme participants to reduce demand for grid-supplied electricity for a period of time when asked. The grid owner benefits from access to flexible ways to reduce network congestion. This allows the grid owner to reduce or postpone investment in the grid.[20]

2.7 Internationally, firms are offering services to assist consumers with solar panels and a battery to optimise how they use the electricity they generate. For example, in Australia, Reposit Power offers to help consumers maximise the benefits they can enjoy from their solar panels and/or battery.[21]

2.8 Improvements in hardware costs and software capability means that it is possible for consumers to become participants by buying or selling electricity products and services directly to other parties, thus competing with existing businesses.

More consumers are participating in the electricity sector

2.9 Many consumers will probably continue to engage with the electricity industry as they currently do: by buying electricity and services from a retailer. However, more will start participating directly, or through an intermediary, to sell electricity services or produce electricity, and by changing their consumption patterns.

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17 Most smart meters record the amount of electricity your household is actually using at half hourly intervals, and sends the data daily to your retailer using similar technology to text messages or a radio network. Go to https://www.ea.govt.nz/consumers/what-are-electricity-meters/ for more information.

18 Go to http://www.energynews.co.nz/news-story/30486/contact-testing-battery-aggregation for more information.

19 Instantaneous Reserves (IR) enables the electricity system to respond to the loss of the largest single supply asset (generally a generator) without interrupting supply to load (frequency to stay above 48Hz).

20 Go to https://www.transpower.co.nz/keeping-you-connected/demand-response for more information.

21 For more information go to https://www.repositpower.com/.

2.10 The number of consumers that choose to participate in the electricity industry is likely to grow as technology costs fall and capabilities improve. This will mean more buyers and sellers participating in the industry.

2.11 The costs of key technologies have fallen significantly in the past few years, particularly for batteries and solar panels. For example, battery costs fell by over two-thirds in the seven years between 2009 and 2016. These costs are forecast to fall by at least another 35 per cent in the six years between 2016 and 2022.[22] If these forecasts are correct, in 2022 batteries will cost 15 percent of what a comparable battery cost in 2009.

2.12 It is not only cheaper technology that is enabling greater participation. The internet-of things offers consumers, or their agents, the ability to optimise their electricity consumption.[23] Consumers are increasingly able to remotely monitor and control their heating, ventilation systems, lightbulbs, televisions, washing machines, dryers, and fridges etc. Such control allows consumers to decrease their consumption when electricity prices are high.

2.13 Individually, a small reduction in the temperature of an individual heat pump or altering the cycling of a fridge may not result in material change in network use. However, it can when aggregated across many consumers. These changes are likely to be unnoticed by consumers while also offering cheaper alternatives to the higher electricity prices that would arise from increasing generation or adding to network capacity.[24]

22 International Energy Agency, *Global EV Outlook 2017 – Two million and counting*, 2017, p.14.

23 The internet-of-things is the inter-networking of physical devices, vehicles (also referred to as "connected devices" and "smart devices"), buildings, and other items embedded with electronics, software, sensors and network connectivity which enable these objects to collect and exchange data.

24 Just as many consumers are currently unaware when their distributor controls their hot water cylinder.

3 Current arrangements limit consumers' choice

3.1 Technological development provides consumers with unprecedented choice and competition across most areas of the economy. The falling cost of technology, coupled with its improving capability encourages entrepreneurs to develop new and disruptive business models. Prominent examples of firms that have developed low cost technological platforms to disrupt traditional and often dominant incumbents to deliver considerable benefits to consumers include Uber, Airbnb, Amazon and Kickstarter.

3.2 Electricity consumers now have a growing expectation of choice in the goods and services they buy, brought about by experiences in other utility industries, especially telecommunications.

3.3 We are concerned that the current electricity industry rules and processes artificially limit innovation and consumer choice in the electricity industry.

3.4 Innovation requires a flexible and resilient regulatory framework. If the policy settings are inadequate, innovation will likely be suppressed. With a resilient and flexible policy framework, all innovation–no matter how radical–could in principle be accommodated and encouraged. But if the policy framework is inadequate, innovation, consumer choice and competition will be stifled.[25]

3.5 We want to ensure our regulatory framework operates for the long-term benefit of consumers.

The rules assume one retailer for each consumer

3.6 The electricity sector is moving to a more dispersed model as technology and new business models let consumers choose to participate directly and interact with non-traditional energy services companies to buy or sell electricity services. This challenges an underlying assumption of our current market design framework that consumers don't want or need a relationship with anyone other than their (sole) retailer.[26]

3.7 We have identified two barriers to a consumer establishing multiple trading relationships.

(a) The current industry rules and processes are set-up to facilitate a one-to-one relationship between a consumer and a retailer. These rules and processes prevent consumers from having more than one retailer at a single location.

(b) Electricity service providers, other than the consumer's retailer, may have difficulty accessing data they need to provide services to consumers. This is a consequence of the Code assuming that there is a single trader (ie, retailer) responsible for each ICP. One consequence is that market data, including consumption data, is channelled through the retailer.

3.8 The first is a hard constraint. It stops consumers from having more than one retailer at the same location.

3.9 The second is a soft constraint. It doesn't necessarily stop electricity service providers from accessing the data they need (for which they have consumer approval to access), but it adds cost (financial and time) to firms seeking to compete. For many firms that would like to offer electricity consumers new services, timely access to meter data is

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25 Biggar, D, *The transformation of the electricity sector in Australia: The public policy and competition policy issues*, OECD, Directorate for Financial and Enterprise Affairs Competition Committee, Working Party No.2 on Competition Issues, 19 June 2017.

26 And in a small number of instances their distributor.

likely to be a fundamental component of the service. In these circumstances, slow or delayed access to meter data may present a hard, rather than soft, constraint to the service.

Industry arrangements assume one retailer for each ICP and consumer

3.10 The current industry rules and processes are based on a one-to-one relationship between a consumer and a retailer. These rules place a hard constraint on consumers having more than one retailer.

3.11 Most consumers have only one physical connection to a distribution network which gives them access to the electricity market—this connection is referred to as the ICP.[27] The Code anticipates that only one 'trader' will be responsible for each ICP.

3.12 Clause 11.18 of the Code sets out how a trader becomes responsible for an ICP.

3.13 A retailer (the trader) assumes responsibility for a consumer (the ICP) when it is recorded in the registry as the responsible retailer. The retailer remains responsible for that consumer until the registry records another trader has taken over responsibility. This happens if the consumer switches retailers. Responsibility for the consumer includes:

(a) managing information held by the registry[28]

(b) managing the switching process

(c) choosing an MEP to provide the metering service and data

(d) providing data to the reconciliation manager and distributors for invoice calculation.[29]

3.14 Each of these responsibilities and processes were not designed to be divisible because they were designed on the assumption of a single consumer/retailer relationship. They were not designed to recognise or incorporate multiple retailers at an ICP.

3.15 For example, the registry can currently recognise only one trader as being responsible for each ICP (consumer).

3.16 Similarly, the switching process is binary. The outgoing retailer relinquishes all responsibilities for the customer to the incoming retailer.

3.17 Should a consumer have two retailers, there is no allowance for the responsibilities to be shared between the incoming retailer/s and any remaining incumbent retailer/s.

3.18 This approach can limit the choices available to a consumer if the incumbent retailer is not willing to deal reasonably with another retailer. In these circumstances, a second meter would need to be installed if a consumer wants to buy electricity from one retailer and sell surplus electricity to a second retailer. Despite using the distribution and metering services in exactly the same way as if they bought and sold their electricity from the same retailer, a duplicate ICP would be established and the consumer would incur a second set of distribution and meter charges. This would materially increase

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27 The Code describes three situations under which a point of connection can be considered to be an ICP. For the purposes of this paper, an ICP is the point at which a customer's premises are connected to the electricity system.

28 The registry is a national database that contains information on every point of connection on local and embedded networks to which a consumer or embedded generator is connected.

29 Invoices is the term used for documenting exchange of payment between participants, eg between a distributor and a retailer for distribution service.

costs to the consumer, despite providing no additional metering functionality and distribution services over the original set-up.[30]

3.19 In addition to the Code and industry systems and processes, regulations have been drafted on the basis of a one-to-one consumer/retailer relationship and also appear to prevent some consumers from having multiple retailers. For example, we have identified that the *Electricity (Low Fixed Charge Tariff Option for Domestic Consumers) Regulations 2004* (LFC Regulations) mandate a one-to-one relationship between the consumer and their retailer. The LFC Regulations state that for a consumer on a retail low fixed charge tariff option:

> "only the electricity retailer that makes [a bundled low fixed charge] tariff option available may charge the consumer directly in respect of delivered electricity, or any component of delivered electricity, supplied to the home".[31]

3.20 This passage refers to a singular retailer.

3.21 The LFC Regulations include a provision for distributors to bill end-users directly, should they choose to bill their end-users directly, as The Lines Company does in the central North Island.

3.22 Delivered electricity is broadly defined under the LFC Regulations to include "components like electricity supply, line function services, customer service, meter provision and meter reading services".

3.23 Our interpretation of these requirements is that a consumer on a retail LFC tariff option can only have one retailer supplying them with an electricity service at each connection.[32]

3.24 The Authority can amend the Code and industry systems and processes to enable multiple trading relationships, but responsibility for regulations such as the LFC Regulations are outside of the Authority's control.

Retailers control the meter data required for electricity services

3.25 Most consumers have one physical connection to a distribution network which gives them access to the electricity market and each connection will generally have one electricity meter.

3.26 The meter is the cash register for the electricity industry. It has traditionally recorded how much electricity a consumer takes from or puts into the network.[33] This data is used to calculate how much the consumer pays, or gets paid, for electricity consumed or generated.

3.27 Access to meter data is generally essential to buy or sell electricity, or provide electricity services.

3.28 Each retailer selects an MEP responsible for metering at an ICP. A retailer can act as an MEP itself or it can appoint a third party.

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30 This assumes the consumer has a smart meter.

31 Refer Electricity (Low Fixed Charge Tariff Option for Domestic Consumers) Regulations 2004, clause 21.

32 Some consumers, such as a supermarket, may have multiple sites. Each site is capable of having a different retailer.

33 Most household meters record volumes of electricity used, ie, kilowatt hours. However, smart meters can also record other units of use, such as peak consumption (measured in kilowatts).

3.29 The retailer also decides what kind of meter to install at an ICP and what data to collect. Retailers and their MEPs agree the requirements for the data that will be collected. Retailers don't have uniform data requirements.

3.30 The kind of meter installed, and how it is configured, determine the services that retailers can offer consumers. Most existing 'smart' meters can also measure other data such as current flow, outages, reactive power, harmonics and voltage. In most cases this data is automatically communicated to the MEP via a mobile phone or radio network.[34] Smart meters have increased the amount of data that can be measured and recorded. Most smart meters record the amount of electricity supplied to the consumer in each half-hour.

3.31 Consumer data is 'owned' by the consumer. MEPs generally collect meter data on behalf of a retailer. Section (2) clause 1 of Schedule 10.6 of the Code states that an MEP may give "a person with whom it has an arrangement, other than a trader" access to raw meter data (emphasis added). However, this does not guarantee access as it appears to be at the discretion of the MEP.

3.32 We understand that in practice commercial arrangements between retailers and MEPs generally require retailer consent for someone other than the responsible retailer to obtain data from an MEP. However, retailers are obligated to provide meter data to distributors and consumers in some situations:

(a) Distributor agreements often require retailers to provide meter data to distributors to assist them to manage their networks. This data is to be provided in accordance with electricity information exchange protocols (EIEPs).[35]

(b) The Code requires retailers to provide a consumer—or someone authorised by a consumer—with up to 24 months of consumption data on request.[36]

3.33 The Code obligation in (b) arose from the Authority's Retail Data Project.[37] The intention was to provide consumers with a mechanism to easily obtain and use their consumption data.

3.34 The aim of the Retail Data Project was to increase consumer participation in the retail electricity market to further enhance retailer competition. It sought to achieve this by improving consumers' access to information to enable them to make more confident, better and faster decisions, including decisions to switch to new retailers or bargain for a better tariff with their current retailer.

3.35 Despite the obligations placed on retailers to share consumption data, barriers still exist to consumers or their agents from accessing this data in a timely manner.

3.36 emhTrade Limited (emhTrade) raised this matter in its submission to the *Enabling mass participation in the electricity market* consultation paper.[38] emhTrade stated that the lack of recognition of electronic customer authorisation for third party access to consumption

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34 This assumes that the meter is located in a location that has appropriate reception. This is not always the case.

35 For more information on EIEPs, refer http://www.ea.govt.nz/operations/retail/eiep/regulated-electricity-information-exchange-protocols/.

36 Refer sections 11.32A to 11.32F of the Code.

37 More detail can be found on the Authority's webpage for the project: https://www.ea.govt.nz/development/work-programme/consumer-choice-competition/retail-data/

38 emhTrade's submission can be found here: http://www.ea.govt.nz/development/work-programme/evolving-tech-business/enabling-mass-participation/consultations/#c16454

data by most retailers is a barrier to data sharing. emhTrade also stated that the lowest cost way to obtain consumption data is to become the consumer's retailer.

3.37 Such constraints can delay consumers' agents from accessing consumption data in a timely manner. For services that depend on timely access to consumer's consumption data, this may place an absolute constraint on the service provider supplying the service, which means the service never reaches the market. We understand that in some circumstances, service providers that rely on faster access than retailers are providing, are installing their own devices in consumer's premises that duplicate smart meter functionality.

3.38 The Code requires retailers to provide consumption data to a consumer or a consumer's agent within five business days of the request. However, prior to this obligation coming into effect, the *Privacy Act* 1993 (Privacy Act) allows the retailer up to twenty business days to satisfy itself that fulfilling the request would meet its obligations under the Privacy Act.

3.39 Where the request comes from a competing firm, retailers may have incentives to use the full timeframe available to them to satisfy the request. Arguably, retailers have an obligation to their shareholders to do so if fulfilling the request faster places greater competitive pressure on the retailer. Should this occur, providers offering a service that relies on accessing their customer's consumption data in twenty four days or less would be unable to bring the service to market.

3.40 In contrast, a retailer could offer a similar service and face none of these constraints.

3.41 It is not just new and innovative services that may suffer from slow access to consumer data. We understand that some financial support services assess their client's electricity costs but are limited in the detail they can provide. If they require more information than is included on their client's bill (generally a single aggregate consumption figure), the advisor must wait up to 25 days to access the necessary information. This means the service provider either doesn't provide the service, or needs to arrange access to their client's data 25 days prior to their meeting (possibly more to account for analysis time) or arrange a second meeting 25 days after the first meeting to review their electricity costs. Neither outcome is likely to be practical, convenient or efficient for the advisor or the consumer.

3.42 Recent action by the European Commission highlights the anti-competitive effects that inefficient data sharing can have. On October 3 2017, the European Commission carried out unannounced inspections of a number of banks and banking trade associations in the European Union suspected of preventing competing service providers from gaining access to bank customer's account data, despite the fact that the respective customers have given their consent to such access.[39]

3.43 We are in no way implying that electricity retailers are not complying with their legal obligations to share consumption data. Although these specific circumstances differ from the issue we discuss above, the European Commission's recent actions signal the profound degree to which inefficient data sharing can have significant anti-competitive effects.

[39] European Commission, *Antitrust: Commission confirms unannounced inspections concerning access to bank account information by competing services*, Fact Sheet, 6 October 2017.

Economic framework

3.44 It is instructive to consider the issues under an economic framework context.

3.45 Under the current arrangements, a retailer at an ICP has the ability and incentive to impair or prevent other parties from forming a contemporaneous relationship with a consumer at the ICP. The ability to do this is provided through market rules which impose restrictions (constraints) on consumers establishing multiple trading relationships at an ICP – the hard constraint. The incentive arises because an incumbent retailer may lose revenue and profits from assisting its customer to obtain competing services on a contemporaneous basis from another provider.

3.46 Although the hard constraint is created by the market rules, retailers can negotiate a commercial arrangement with a second retailer that technically (although not officially) allows the second retailer to operate at the ICP. This arrangement would have to be facilitated by the incumbent retailer and would be an 'out of market' transaction.

3.47 emhTrade discussed this in its submission on the *Enabling mass participation in the electricity market* consultation paper when it said that '(m)ulti-retailer support is a feature that is feasible under the current regulatory framework and is one that we have discussed with other retailers'.[40]

3.48 However, despite such arrangements being feasible and investigated, we are not aware of such an arrangement being agreed in regard to services to residential consumers. Presumably, this is because retailers face few incentives to enter into arrangements that are likely to reduce their revenue or profits.

3.49 The soft constraint exists because the retailers have some incentives and ability to delay sharing the data. They have the incentives to do so where prompt access to data will mean they face more competition for their customers. Retailers have the ability to take up to twenty business days to satisfy itself that fulfilling the request would meet its obligations under the Privacy Act. Once the retailer has satisfied itself that the request is legitimate, it has a further 5 business days to fulfil the request. This gives retailers up to 25 business days to fulfil a request.

3.50 As discussed above, retailers have incentives to provide the data no faster than necessary if the request comes from a competing provider.

3.51 To improve competition and provide long-term benefits to consumers it may not be necessary to address both the ability and incentive constraints—potentially only one of these factors has to be addressed.

3.52 For example, if the incentives on a retailer to influence the format and timeframe (up to 25 business days) in which a third party provider can access their consumer's data could be removed, then it is likely that the soft constraints identified above could also be lessened or removed. In this case, it may be unnecessary to address the hard constraint.

3.53 Accordingly, the degree to which industry rules and processes need to be changed, if at all, will depend on how these constraints are addressed.

[40] emhTrade's submission can be found here: http://www.ea.govt.nz/development/work-programme/evolving-tech-business/enabling-mass-participation/consultations/#c16454

The Australian electricity regulator considered a request to amend regulation to make multiple trading relationships easier to establish

3.54 In December 2014, the Australian Energy Market Commission (AEMC) received a rule change request from the Australian Energy Market Operator (AEMO), which proposed a framework to better enable customers to engage with multiple retailers.[41]

3.55 AEMO's rule change request was triggered by earlier work undertaken by the AEMC that considered how metering arrangements could enhance and facilitate efficient use of electricity services for consumers with electric vehicles.[42] A key recommendation of this project was that a customer should be able to engage with a different retailer for different portions of its load (such as an electric vehicle) without having to establish a second connection point (ICP).

3.56 The scope of the AEMC's multiple trading relationships project was narrower than the scope of our project. The scope of the AEMC's project was limited to allowing consumers to engage with multiple retailers. It didn't consider the barriers to consumers to establishing relationships with other electricity service providers.

3.57 As in New Zealand, consumers in Australia could engage with multiple retailers by installing a second connection point. The AEMC concluded that the AEMO's proposed solution was unlikely to deliver material benefits for most consumers. The AEMC concluded the proposed solution offered similar benefits to those available under the existing regime while increasing costs.

3.58 The proposed solution was designed on a 'technology neutral' basis capable of supporting a range of different meter capabilities, including analogue meters. This ultimately meant that the proposed solution relied on additional meters being installed. The result of this is that there were minor incremental benefits compared to the existing arrangements.

3.59 The AEMC concluded the cost of the proposed solution did not represent a proportionate response because the costs associated with implementing the proposed framework are likely to outweigh any minor incremental benefits that it could provide.

3.60 We assume consumers in New Zealand who wish to engage in multiple trading relationships either have a smart meter installed on their premises or would have one installed in order to enable them to do so.[43] Smart meters are currently installed at almost 80 per cent of ICPs in New Zealand.

3.61 In many cases, consumers seeking to establish multiple trading relationships would be consuming services that cannot operate without smart meter functionality. In these circumstances, consumers must have a smart meter to use the service anyway.

3.62 Of course consumers who don't wish to have a smart meter may still engage in multiple trading relationships by establishing a second ICP (and installing a second meter). Given this cohort is likely to be small, it is unlikely that the benefits of changing industry rules and processes to make it easier for these customers to have multiple trading

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41 For more information see: http://www.aemc.gov.au/Rule-Changes/Multiple-Trading-Relationships/.

42 Australian Energy Market Commission, *Energy Market Arrangements for Electric and Natural Gas Vehicles*, December 2012.

43 A service provider seeking to establish a multiple trading relationship with a consumer that does not have a smart meter has a commercial imperative to have one installed at the consumer's property.

relationships would outweigh the benefits of doing so. We remain open to stakeholder views to the contrary.

Q1. How material are the constraints to consumers establishing multiple trading relationships at a single connection identified above?

Q2. Are there other constraints that prevent multiple trading relationships from efficiently occurring? If so, please describe them.

4 There are benefits from multiple trading relationships

4.1 Making it easier for consumers to have multiple trading relationships will have benefits and costs. The benefits are likely to come from more choices for consumers, greater competition from innovation in business models and services, a more reliable supply and a more efficient electricity industry.

4.2 Preventing an electricity consumer from choosing multiple trading relationships at a single location is like making consumers buy all their telecommunications services from a single provider. A consumer in that situation could not purchase services from alternative or specialist providers that may offer better quality, price or selection. For example, a consumer that has a fixed line phone, a dedicated mobile broadband connection, a mobile account and subscriptions to Sky TV, Lightbox, Neon and Spotify would have to purchase them all from the same provider. Not only would this limit the consumer's ability to purchase the services that best meet their needs, it would also mean telecommunications firms face less competition.

4.3 Until recently, consumers did not have much choice other than which electricity retailer they contracted with (in this analogy, buying all their telecommunications services from a single provider). This was mostly due to the capability of the technology available. However, technological developments mean consumers can choose between a growing number of retailers and electricity service providers. This could include having multiple retailers, using price comparison websites or installing home energy management systems. But market arrangements either:

(a) prevent a consumer from having multiple retailers at the same location

(b) make it difficult for electricity service providers (that aren't retailers) to offer consumers efficient services.

Benefits from more competition and innovation

4.4 We expect that making it easier for consumers to have multiple trading relationships will increase consumer choice and ultimately promote competition and innovation. Lowering or removing inefficient barriers to consumers engaging in multiple trading relationships would mean consumers have more choice. This is because consumers will not only be able to have more than one retailer (for example, to buy electricity from one and sell excess generation to another) it will also be easier for them to use the services of other electricity service providers.

4.5 More choice for consumers means that more businesses will be able to enter the market to supply goods and services that match what consumers want. It also means that businesses will be exposed to a greater risk of failure if they don't offer products and services that meet consumers' needs. Strengthening this market entry process promotes rivalry and strong competition as businesses strive to be successful in delivering what consumers want. These businesses might be traditional market players such as retailers. But they could be new players such as third party service providers and even consumers behaving as business selling services to other consumers.

4.6 Overall, promoting competition through multiple trading relationships can provide significant long-term benefits to consumers. Specifically, facilitating multiple trading relationships can improve:

(a) allocative efficiency: facilitating more opportunities for businesses to deliver the price, quality and other relevant product and service aspects that consumers want

as businesses compete to attract consumers' choices. This would result in more efficient component services and more efficient services that aggregate the component services

(b) productive efficiency: providing stronger incentives for businesses to offer electricity services at lower costs

(c) dynamic efficiency: facilitating more opportunities for businesses to innovative in products and services at the lowest possible cost to attract consumer's choices as what consumers want and value changes over time.

4.7 Of these three benefits, we expect that dynamic efficiency would have a far greater impact on the long-term benefit of consumers than the other two components of efficiency.[44]

4.8 A key benefit of competition is the role it has in ensuring that those firms that provide the best value continue in the market while those that provide poor value exit. Over time this evolutionary role of competition implies that consumers enjoy the benefits of competition, such as lower cost, higher quality and better specified goods and services. This effect is diminished when new firms face barriers to entering the market. Barriers to entry either prevent firms from entering the market, or increase the cost of doing so. Both of these outcomes limit the degree to which the evolutionary role of competition can deliver benefits to consumers.

4.9 The key dynamic role that competition plays is through the creation of an efficient framework to promote product and process innovation. However, if barriers make it hard, or impossible, for new and innovative firms to enter the market, incumbent firms will have weaker incentives to invest in the research or innovation needed to generate new services.

Benefits from improved reliability

4.10 Imbalances in demand and supply can result in power cuts. This can happen when the network is congested or when there is a shortage of generation. Multiple trading relationships could result in more diverse ways to bring supply and demand into balance quickly.

4.11 Similarly, as an isolated electricity system, it is important that the system has the appropriate capabilities to maintain normal electricity supply to consumers. Multiple trading relationships may result in more varied and flexible ways to ensure security of supply. This could lead to improved reliability and security of supply.

4.12 Multiple trading relationships could create more opportunities for businesses to compete to establish more effective relationships with consumers that can enhance reliability of supply. For example, consumers will have new opportunities to establish more effective relationships with:

(a) a retailer, local distributor or Transpower either directly or indirectly through a third party service provider to reduce their consumption when there is a risk of a power cut because of an imbalance in supply and demand

[44] See, for example, J. Hausman and G. Leonard, (2002), The Competitive Effects of a New Product Introduction: A Case Study, J. Indus. Econ., 50(3), 237-63. See also A Petrin, (2002), Quantifying the Benefits of New Products: The Case of the Minivan, J. Pol. Econ., 110, 705.

(b) Transpower either directly or indirectly through a third party service provider to participate in ancillary services markets. Ancillary services keep demand and supply in balance in very tight timeframes, sometimes as short as seconds

(c) service providers to help them manage and reduce their consumption in response to high electricity prices that occur when demand is high or supply is constrained.

4.13 A greater plurality of decision-makers reduces the risks of miscalculation, bias or gaming by any one player and brings greater contestability of views by parties with potentially divergent interests.

4.14 Overall, multiple trading relationships can be expected to provide more opportunities for consumers to establish relationships that will help improve security of supply and avoid power cuts. This means that the market and the economy may be less reliant on traditional forms of electricity generation to maintain a reliable supply.

Benefits from a more efficient electricity industry

4.15 Making it easier for consumers to have multiple trading relationships is also likely to promote more efficient investment, generation and consumption decisions. This would improve market operations and over time reduce the costs of electricity to consumers. For example:

(a) Reducing the need to invest in a bigger network or new expensive peaking generation plant. Consumers could enter into arrangements with retailers, Transpower and distributors or third party providers to reduce consumption at peak times. Reducing consumption is often cheaper than building additional infrastructure (such as network capacity or new generation).This would improve the efficient operation of the market.

(b) Reducing the need to run existing generation plant. Consumers and their agents could arrange to reduce consumption at peak times. Doing so will reduce the amount of time that existing peaking generators operate. This would reduce the cost of market operations when it is cheaper for consumers to reduce or shift demand than to run peaking generators.

(c) More efficient consumer investment and electricity use. If consumers have more choice about the services they use, they are likely to have access to services that better enable them to compare the price they pay for the electricity they need with the value they place on consuming it. Consumers with this knowledge are more likely to use electricity only when the value from using electricity is more than the cost of producing and transporting it. They will also be better able to assess the value of investments in technologies which allow them to use electricity more efficiently like home energy management systems, and flexible industrial and commercial processes. Such knowledge enables consumers to act in a way that reduces the costs of their electricity use.

4.16 The Authority's Retail Data Project has made it easier for firms offering services such as those described above to operate. However, the barriers to multiple trading relationships, discussed in Chapter 3, still limit the degree to which competition can develop in each of the examples outlined above. It is these constraints that limit competition and the benefits consumers can enjoy.

Q3. What do you consider to be the benefits of multiple trading relationships?

Q4. What other services could be enabled by reducing or removing the barriers to multiple trading relationships?

5 There are costs to enabling multiple trading relationships

5.1 Making it easier for consumers to have multiple trading relationships is likely to offer consumers a range of benefits. Changes are needed to allow this to happen. We want to know if those changes are practicable and cost effective.

5.2 The purpose of this paper is not to propose solutions. The economic framework outlined in Chapter 3 states that constraints exist because some participants have the ability and incentives to create constraints to inhibit consumers establishing relationships with multiple service providers at an ICP. These constraints can be removed by changing the rules and processes that enable the constraints to occur—ie, address the ability for retailers to create constraints—or by removing incentives for retailers to create the constraints. This means there could be multiple ways to remove the constraints.

5.3 As there is likely to be a spectrum of solutions the changes that will need to be made, and the accompanying costs that are incurred, will depend on the proposed solution. It is not certain all, or any, of the changes and associated costs discussed below would necessarily be incurred.

5.4 However, for the purposes of fostering further discussion of these issues, we have identified industry rules and processes that have been drafted on the basis of a one-to-one retailer/consumer relationship. It seems likely that many of these rules and processes would need to be altered if our focus is on removing the ability of retailers to inhibit consumers establishing multiple trading relationships.

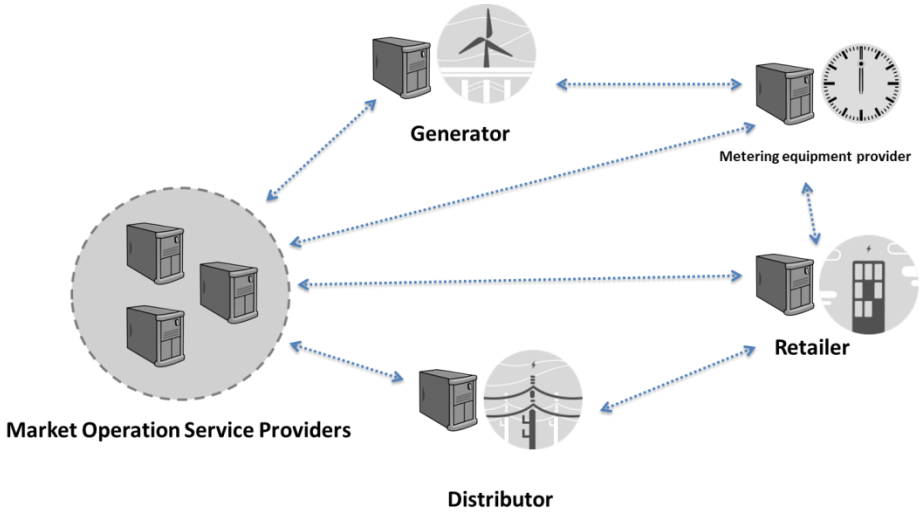
5.5 Accordingly, the remainder of this chapter identifies and describes the arrangements that we think would most likely need to change to remove retailers' ability to impose constraints.

5.6 These changes could impose costs on the Authority (via market operation service providers), market participants and possibly other stakeholders. In particular, we would need to amend the Code to make it easier for consumers to choose multiple trading relationships. Flow-on changes could also be needed to market processes and market operation service provider systems, and some participants may need to update their systems and operating practices.

5.7 Within the electricity industry large volumes of data are collected, processed, stored and exchanged each day. The data is essential for the physical exchange of electricity and the exchange of electricity services between participants across the supply chain.

5.8 The current data system—the way data is collected, processed, stored and exchanged—is largely decentralised. Industry participants, such as retailers, generators and distributors, individually collect and produce data as part of their everyday activities. They must also exchange data between themselves and through market operation service providers (MOSPs) to enable transactions between participants.

Figure 2: Simplified overview of the data system and data exchanges



Source: Electricity Authority

5.9 The Authority contracts with a range of MOSPs which provide platforms for the electricity market and the exchange of electricity services between participants. An example of a MOSP is the reconciliation manager which is responsible for ensuring that participants (electricity generators or buyers) are allocated their correct share of electricity generation or consumption.

5.10 We expect that the changes discussed in Chapter 2 will lead to an increase in the collection and exchange of data in the electricity sector. The Authority's *Data and data exchanges for market transactions* project is investigating whether the sector's data system can cope with an increase in both the volumes of data and the complexity of transactions.

5.11 Much of the data system was designed for one-to-one data transactions. Current data processes are largely predicated on data flows from a single consumer to a single retailer and on from the retailer to the reconciliation manager and distributors. Making it easier to establish multiple trading relationships at an ICP could require changes to the way that data is processed through the electricity system.

5.12 For example, the retailer responsible for an ICP chooses an MEP to manage the metering services at the ICP. This MEP collects the data required by the retailer and sends it to them at agreed intervals in an agreed format.

5.13 This process is set out in the Code and effectively grants responsibilities for data processes to a single retailer. This is one of a number of processes and responsibilities that would need to be amended if multiple retailers are to operate at a single location.

5.14 These changes are likely to be made via Code changes and modifications to MOSP systems.

5.15 In doing so, we may need to consider how responsibilities that were primarily allocated to single participants could be allocated across multiple participants.

5.16 We have identified a number of areas in which one-to-one relationships currently exist, whether they are between consumers and their service providers (including retailers) or between industry participants. In each of these relationships one or both of the parties have actions or processes they are responsible for. For consumers to establish efficient multiple trading relationships we may need to determine how responsibilities could be

allocated across multiple parties, or whether they need to be allocated across multiple parties. These considerations include changes to the way that the following processes are undertaken or structured. We want to identify:

(a) stakeholders that have a relationship with the consumer, and, for example, thinking about what information is recorded in the registry and the switching process

(b) stakeholders that have a role in the market operation systems and processes, and, for example, thinking about the data system and exchange of information with the clearing manager, reconciliation manager and between industry participants

(c) stakeholders that have a role in the recording and exchange of the meter data

(d) stakeholders that have consumer-related responsibilities, and for example, thinking about medically dependent and vulnerable consumer arrangements.

5.17 We discuss each of these topics below.

Changes may be needed to the registry and switching processes.

5.18 Rules and processes are structured to facilitate a one-to-one relationship between a consumer and their retailer. In an environment with multiple trading relationships, there could be multiple retailers that have a relationship with the consumer. Changes may be needed to the information recorded in the registry and the switching process to facilitate the additional relationships consumers could have.

5.19 The registry is a database that holds information on around two million ICPs.[45] Retailers, MEPs and distributors use this database to exchange information to manage reconciliation, invoicing and switching processes. The current registry structure may not be appropriate for an environment where multiple trading relationships at an ICP become increasingly prevalent.

5.20 The registry can be thought of as a public record of the customer management system for retailers supplying electricity. The current switching process is binary. The switching process assumes that each single ICP identifier (ie, customer) has a single retailer. This is straightforward to manage because the incoming retailer replaces the outgoing retailer in the registry. In an environment where a consumer has multiple retailers, the switching process may need to be amended to recognise that each ICP may have multiple responsible parties supplying services to that location.

5.21 The current interface with distributors also assumes that each single ICP identifier (customer) has a single retailer. The interface is straightforward to manage because the incoming retailer replaces the outgoing retailer. In an environment where a consumer has multiple retailers or suppliers, distributors' invoicing and outage management process may need to recognise that each ICP may have multiple responsible parties supplying services to that ICP.

5.22 How this could be managed would depend on the type of relationships a consumer could have with these suppliers. The switching process would likely need to be sufficiently flexible to account for the range of relationships that consumers could engage in.

5.23 For example, the parameters that would be needed to facilitate switching for a consumer that has two retailers supplying electricity at the same time (for example one providing a

[45] The registry is a database that identifies every point of electricity connection using an installation control point (ICP) reference, enabling energy flows between retailers to be reconciled. The registry also informs retailers when a customer switches supplier.

'baseload' service and the other providing a 'peak' service) are different to those required if a consumer has two retailers supplying electricity at different times (for example, one providing a weekday service and the other, a weekend service).

5.24 The switching process in an environment with multiple trading relationships would need to ensure consumers can switch from one retailer without affecting the service of any other party serving that consumer.

5.25 Similarly, the current connection and disconnection processes are designed for a one-to-one consumer-retailer relationship. Any move to multiple suppliers needs to ensure that the loss of service from one supplier does not automatically result in the consumer facing a loss of service from the other suppliers at the ICP

Q5. What changes, if any would be needed to the switching and disconnection/reconnection processes if a consumer were able to have multiple retailers?

We need to identify necessary changes to the market operation systems and processes

5.26 Market operation systems and processes ensure that the right people get paid the right amount at the right time. The current back office systems and processes, and cost allocation methodologies, may need to change to ensure the right people get paid the right amount at the right time.

5.27 Back office processes generally occur between industry participants and include the registry, reconciliation, the clearing process, and data exchange protocols.

5.28 The reconciliation manager ensures that industry participants (generators or retailers) are allocated their correct share of electricity generation or consumption. The reconciliation manager receives files from all retailers specifying the volume of electricity supplied and who that electricity was supplied to.

5.29 The clearing manager is responsible for ensuring that the industry participants pay, or are paid, the correct amount for the electricity they generate or consume and for market-related costs. The clearing manager invoices retailers and generators for the electricity their customers have consumed or generated.

5.30 A number of participants, including retailers and distributors, share data using electricity information exchange protocols (EIEPs). EIEPs are designed to provide standardised formats and associated business requirements that support low cost, standardised and reliable exchange of business-to-business information.

5.31 In addition to considering how system processes and responsibilities can be shared across multiple parties, there are services, such as distribution and metering, which are billed to individual market participants, principally retailers.

5.32 Making it easier for consumers to establish multiple trading relationships may involve multiple parties using an intermediate or 'input' service that is currently used by (and therefore billed to) a single retailer. Costs that are currently borne by that single retailer may need to be shared across multiple participants.

5.33 For example, distributors generally bill retailers for residential distribution services.[46] Should that consumer have more than one retailer, distribution costs may need to be shared between each retailer.

5.34 For example, a consumer with roof-top solar panels may purchase electricity from one retailer and sell their excess generation to another retailer.

5.35 In principle, the Authority considers that any cost allocation should be done on a service-based and cost-reflective basis. We are interested in understanding stakeholder views on how costs of the distribution service to the consumer's premises should be shared between multiple retailers (such as in the example from the previous paragraph) and if so, how those costs should be shared.

5.36 In this respect, meter services have similar characteristics and considerations.

5.37 A number of factors will influence how the costs of intermediate services are shared amongst those using the service. These factors include how the intermediate service is billed (price structure), how each service provider uses the service and the cost structure of the intermediate service.

5.38 Finally, with more relationships consumers are expected to increasingly allow more parties to control their behaviour.

5.39 For example, a consumer may have relationships with:

(a) three retailers—one that provides an agreed baseload of consumption, a second that supplies the consumer's demand when it exceeds the baseload provided by the first retailer and a third retailer that exclusively supplies electricity to the consumer's electric vehicle

(b) a load aggregator that manages the consumer's heat pump, hot water cylinder, household battery and electric vehicle charging when prices (for energy or ancillary services) are high

(c) a price comparison website that has knowledge of the other relationships the consumer has reviews the consumer's characteristics and load profile every three months to ensure they remain on the best retail plan(s) (and automatically switches them if they are not).

5.40 There is currently a process that requires anyone with distributed generation (such as solar panels or batteries) to inform their distributor of this. Consumers with these assets are likely to use electricity differently to a consumer that doesn't have these assets. Visibility of these assets assists with network management.

5.41 Services are increasingly available that allow consumers (or their agents) to alter their behaviour in ways that consumers may not have been able to in the past. As more consumers adopt these types of services, their behaviour is likely to have implications for network management. Consideration needs to be given to whether this information should be recorded and if so, how it should be recorded and who should have access to this information.

5.42 We are interested in understanding whether the market operations systems and processes are capable of accommodating multiple trading relationships and whether the scope of the current systems and processes are sufficient. Similarly, we are seeking

[46] There is an exception to this. Residential consumers in the central North Island are billed directly by their distributor, The Lines Company.

feedback on how distributors and metering equipment providers could charge multiple users.

Q6. What other data exchange processes that have not been identified in this paper need to be changed to accommodate multiple trading relationships?

Q7. How could the data exchange processes be modified to accommodate multiple trading relationships?

Q8. What other services, if any, would have to share costs between multiple users?

Q9. How could the cost of these services be shared amongst multiple users?

It is likely processes for exchanging consumer data would need to change

5.43 As was identified in the Authority's retail data project, when consumers develop relationships with multiple electricity service providers, some, if not all, of these providers are likely to want access to a consumer's data. We need to consider if, when, and how electricity service providers that have a legitimate interest in the recording and exchange of meter data are given appropriate access to that data.

5.44 In Chapter 3 we discussed the growing digitisation and automation of the electricity industry. We also discussed the constraints that the current arrangements for sharing consumption data present to the efficient operation of businesses offering services that use consumption data. The retail data project amended the Code to require retailers to share a consumer's data with consumers and their agents. However, the length of time it takes for consumer agents to receive the data and inconsistent customer authorisation processes impose transaction costs on parties seeking their consumer's data. We need to consider whether these constraints can be efficiently addressed and if so, how they can be addressed. This includes considering whether there are more efficient ways to recognise a consumer has given its approval for a service provider to access their data and for retailers to satisfy their obligations under the Privacy Act.

5.45 Relationships between consumers and service providers primarily hinge on the service provider (for example a retailer, a load aggregator or a price comparison website) having access to the consumer's data. This may not be limited to consumption data, but depending on the service being provided, service providers may also seek access to other data. This data may include whether the consumer has a smart meter, whether they have distributed generation, whether they have controllable appliances (battery, heat pump, hot water tank, etc) or the structure of consumer's retail tariff. As with consumption data, businesses would need to receive explicit approval from the consumer to access their data.

5.46 The registry records meter configuration and the presence of distributed generation at an ICP. This information allows retailers and distributors to identify the type of services that can be provided to the consumer. For example, retailers that offer services that require smart meter functionality can easily identify whether they can offer their services to a prospective consumer relatively quickly and cheaply. Without the information, retailers would rely on consumers to identify their meter type. Few consumers would be equipped to do this, which would make it harder for retailers to offer services that use smart meter functionality.

5.47 In the current environment, a consumer's retailer contracts an MEP to provide metering services to an ICP (consumer). The MEP records electricity conveyed through the ICP in

the format requested by the retailer and sends it to the retailer at agreed intervals. In an environment with multiple trading relationships retailers or electricity service providers may require MEPs to send them different data sets at differing intervals.

5.48 MEPs may need to amend their systems if they were to enable this functionality. Similarly, retailers and other participants may also need to amend their systems to account for an increasing number of participants.

5.49 Problems may also arise where one retailer requires enhanced functionality that other retailers do not require. Access to meter data assumes that the consumer has a smart meter. Consideration also needs to be given to how a consumer with an analogue meter can engage in multiple trading relationships. With the exception of having two retailers at an ICP, it is unlikely that many of the services available would be compatible with an analogue meter.

Q10. Could consumer data be more efficiently shared with service providers that have a legitimate claim for access to their consumer's data? If so, how?

Q11. How much value is there in making it easier for appropriately authorised firms to access information such as a consumer's tariff structure, the smart meter functionality that is used by the consumer's MEP, a consumer's controllable appliances?

Q12. Are there other industry participants that may need to amend their systems to operate in an environment with multiple trading relationships?

Q13. What are the costs of the above changes recognised in questions 10-13?

Changes may be needed to how consumer-related responsibilities are managed

5.50 Market arrangements include several obligations or expectations on retailers. These obligations, listed below, may need to be shared across multiple parties in an environment with multiple trading relationships.

(a) **Medically dependent and vulnerable consumers**—Processes may need to be developed to ensure that the service obligations that retailers serving medically dependent or vulnerable consumers remain in place should the consumer have more than one retailer.

(b) **Customer Compensation Scheme**—The Customer Compensation Scheme obliges retailers to pay compensation to their customers for the duration of an Official Conservation Campaign. This scheme is based on a single retailer at an ICP. It may need to be amended to account for multiple retailers if consumers could establish a relationship with more than one retailer.

(c) **Trader default**—Should an ICP identifier have more than one retailer, we need to consider whether the current retailer default scheme can be scaled to incorporate multiple retailers at an ICP identifier.

(d) **LFC Regulations**—We have identified the LFC Regulations as a potential barrier to enabling multiple traders at an ICP, although addressing this barrier is outside of our control. Section 21 of the LFC Regulations state that consumers on a low fixed charge tariff can only be directly charged for delivered electricity, or any component of delivered electricity supplied to the home by the retailer making that

tariff available (emphasis added).[47] The wording of the LFC Regulations refers to a single retailer. This is likely to prevent consumers on an LFC tariff from having multiple retailers.

Q14. What other obligations need to change if multiple traders can serve an ICP?

Q15. How could the obligations discussed above be amended to accommodate multiple traders at an ICP?

Q16. What costs would be involved in amending consumer-related responsibilities to accommodate multiple traders at an ICP?

Q17. What additional matters would need to be considered if we were to introduce multiple trading relationships? What amendments would need to be made to the Code to facilitate multiple trading relationships?

Q18. What is the cost of the changes needed to enable multiple trading relationships?

[47] The LFC Regulations allow for distributors to bill their users directly.

Appendix A Format for Submission

Submitter	

Question		Comment
Q1.	How material are the constraints to consumers establishing multiple trading relationships at a single connection identified above?	
Q2.	Are there other constraints that prevent multiple trading relationships from efficiently occurring? If so, please describe them.	
Q3.	What do you consider to be the benefits of multiple trading relationships?	
Q4.	What other services could be enabled by reducing or removing the barriers to multiple trading relationships?	
Q5.	What changes, if any would be needed to the switching and disconnection/reconnection processes if a consumer were able to have multiple retailers?	
Q6.	What other data exchange processes that have not been identified in this paper need to be changed to accommodate multiple trading relationships?	
Q7.	How could the data exchange processes be modified to accommodate multiple trading relationships?	
Q8.	What other services, if any, would have to share costs between multiple users?	
Q9.	How could the cost of these services be shared amongst multiple users?	
Q10.	Could consumer data be more efficiently shared with service providers that have a legitimate claim for access to their consumer's data? If so, how?	
Q11.	How much value is there in	

	making it easier for appropriately authorised firms to access information such as a consumer's tariff structure, the smart meter functionality that is used by the consumer's MEP, a consumer's controllable appliances?	
Q12.	Are there other industry participants that may need to amend their systems to operate in an environment with multiple trading relationships?	
Q13.	What are the costs of the above changes recognised in questions 10-13?	
Q14.	What other obligations need to change if multiple traders can serve an ICP?	
Q15.	How could the obligations discussed above be amended to accommodate multiple traders at an ICP?	
Q16.	What costs would be involved in amending consumer-related responsibilities to accommodate multiple traders at an ICP?	
Q17.	What additional matters would need to be considered if we were to introduce multiple trading relationships? What amendments would need to be made to the Code to facilitate multiple trading relationships?	
Q18.	What is the cost of the changes needed to enable multiple trading relationships?	