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Dear Sir/Madam

Consultation on consumer protections behind the meter – regulatory implications

The Australian Energy Market Commission (AEMC) welcomes the opportunity to make a submission to the COAG Energy Council consultation paper on consumer protections behind the meter – regulatory implications. We note that this consultation forms part of a broader area of work relating to the regulatory implications of emerging technologies.

A best practice policy, legislative and regulatory framework provides businesses with incentives to promote the interests of consumers, whilst ensuring that sufficient safeguards exist, in the form of minimum product and service standards to protect consumers. We understand that the COAG Energy Council consultation paper is aiming to understand what consumer protections should exist in the context of products and services which supply electricity that sit behind the meter. COAG Energy Council officials are also consulting on stand-alone energy systems and the potential consumer protections required in that scenario.¹

The issue of consumer protections related to new products and services in the retail energy market is a complex, but important and priority policy reform area to address. Our view is that the consideration of energy specific consumer protections required in the context of market developments must take a broad view of the products and energy services offered in the electricity market. We also consider that a framework needs to be developed and set out by COAG Energy Council officials to inform how energy specific consumer protections should evolve over the longer term.

Over the last few years, we have considered and made a number of recommendations related to the review of energy specific consumer protections in light of emerging products

¹ See: <http://www.coagenergycouncil.gov.au/publications/energy-market-transformation-%E2%80%93-consultation-processes>

and energy services.² Most recently, the AEMC has had regard to the issue of consumer protections in the context of its ongoing technology work program.³ As part of this work, we commissioned Dr Chris Decker to consider:

- the rationale for consumer protection laws in competitive markets, and the reasons why additional sectors specific consumer protection regulations may be necessary;
- how regulators and policy makers are responding to similar changes in electricity markets in other countries; and
- how regulators and policy makers are responding to the emergence of new products and services, and alternative business models, in other regulated industries and activities such as telecommunications and water.

A summary of some of the key findings of the report titled “Regulatory implications of new products and services in Australian electricity markets”, are provided in Box 1 below. We have also attached this report for your information.

Scope and approach of issues raised

COAG Energy Council officials are consulting on the consumer protections required for behind the meter products and services. The scope of this consultation to ‘behind the meter’ is narrower than the previous consultation and advice published by COAG Energy Council.⁴ If the scope is limited to only those products and services offered behind the meter, there is a risk that some outcomes or scenarios will not be considered and any policy responses may not keep pace with ongoing changes in the market.

A holistic and integrated approach needs to be taken and officials should have regard to whether the existing consumer protections framework continues to meet its objectives. This should be irrespective of whether consumers receive their electricity supply from behind the meter, an interconnected electricity system, or via stand-alone energy systems. Such an approach would ensure that all risks and issues are identified and changes to the existing frameworks are addressed in a coordinated manner.

The COAG Energy Council consultation paper sets out a number of potential scenarios and issues for stakeholder consideration. The consultation paper however neither provides a framework for how officials will determine what customer protections are required for different products and services, nor how they intend to implement the required changes. It also does not outline the previous positions held by COAG in relation to the purpose for developing energy specific customer protections and why energy specific consumer protections may be needed going forward.

We consider that the development of an overall framework is required before determining the appropriate suite of consumer protections.

² Recommendations have been made in the AEMC 2012 Power of Choice review, Strategic Priorities reviews and annual NEM wide retail competition reviews.

³ See: <http://www.aemc.gov.au/News-Center/What-s-New/Announcements/AEMC-launches-project-on-integration-of-electricit>

⁴ See: <http://www.coagenergycouncil.gov.au/publications/new-products-and-services-electricity-market-advice-ministers-july-2015>

Box 1 Key findings – “Regulatory implications of new products and services in Australian electricity markets”, by Chris Decker

The key findings of the paper are that:

- For most products and services, robust competition is the best form of consumer protection.
- In markets newly opened to competition, such as retail energy markets in Australia, additional consumer protections are often premised on a need to inform consumers of risks, and their rights, in a new, unfamiliar context; address the incentives of suppliers in the changed context; and address differential impacts on consumers of opening a market to competition.
- Consumer protections are not costless and can affect the intensity of competition in the market and incentives for innovation.
- A range of new product and services and new entrants are emerging in retail electricity markets across a number of countries. Consumer protection issues and the policy responses differ across countries, reflecting different supply contexts and policy frameworks.
- New services and products are challenging traditional services and supply structures in other regulated industries, such as the telecommunications, water and postal sectors. The approach taken to consumer protection those markets provides potential insights for the treatment of new products and services in Australian electricity markets.

Our submission and response to the consultation paper focuses on the key elements we consider are important to address and is structured as follows:

- (i) The current market transformation and how this effects existing energy specific consumer protections.
- (ii) The purpose of developing energy specific consumer protections and what outcomes/behaviours it is aiming to protect. This should consider what, if any, are the limitations of Australian Consumer Law (ACL).
- (iii) Development of a set of key principles that could be applied to determine what and how consumer protections should apply as the market and technology develops.
- (iv) The need to test principles against a range of scenarios so that they generate sensible and consistent outcomes and are able to accommodate evolving products, services and market participants.

Attached to this submission is our response to the key discussion points for this consultation stage. Our response to the discussion questions is provided at [Attachment B](#).

(i) Market transformation and existing consumer protections

Energy markets are going through a period of evolution and change due to innovation in technology and shifts in consumer preferences. While the technology (ie., product

hardware) may be new, the functions they perform will not necessarily be different to those that have been performed in other parts of the electricity supply system.

The innovation in technology however is now occurring at a much more disaggregated level and can be performed closer to the consumer. This allows consumers to do such things as:

- generate some of their energy needs from solar panels;
- store energy in batteries and use it when it best suits them; and
- employ home energy management systems to use energy more efficiently.

It is also enabling traditional retailers and new energy service suppliers to develop business models and provide a broader range of new energy services to consumers.

The evolving nature of the market and the technology changes provide an opportunity to consider whether or not the existing energy specific consumer protection framework continues to meet its objectives. In particular, what parts of the existing framework should continue to apply, what needs to be amended, and what could be removed.

The National Energy Customer Framework (NECF) is comprised of the National Energy Retail Law, the National Energy Retail Regulations (Regulations) and the National Energy Retail Rules. The NECF:

- establishes the consumer protections and obligations regarding the sale and supply of electricity and natural gas to consumers, with a particular focus on residential and small customers.⁵
- defines the rights, obligations and protections relating to the relationship between customers, energy retailers and energy distributors;
- complements and operates alongside the generic consumer protections in the ACL⁶ and state and territory safety and concession regimes.

The sale of electricity to consumers is prohibited unless the seller holds a current retailer authorisation. There are, however, some provisions which allow the seller to be exempt from the requirement to hold a retailer authorisation. An exemption may be granted if the seller is:

- providing a supplementary or add-on service to consumers who are purchasing energy from an authorised retailer, or
- the energy provided by the seller is part of bundled service and forms an insignificant part of that contract.⁷

⁵ The NECF currently applies, with jurisdictional specific amendments, in Queensland, New South Wales, South Australia, Tasmania and the Australian Capital Territory. Victoria has not adopted the NECF.

⁶ The ACL offers protections for consumers in the areas of consumer rights when buying goods and services; product safety; unsolicited consumer agreements including direct marketing, unfair contract terms law (covering standard form consumer), and consumer redress options amongst others. The ACL prohibits misleading, deceptive and unconscionable conduct.

⁷ See:

<https://www.aer.gov.au/system/files/AER%20%28Retail%29%20Exempt%20Selling%20Guideline%20-%20version%203.pdf>

The AER manages this exemption framework and has broad powers to impose conditions on an exempt seller.⁸ As noted, the NECF also places obligations on distribution network business and the AER may provide exemptions for network operators, such as those provided for embedded network operators.

To date, the emerging products and services offered in the electricity market have been primarily managed through the exemption framework. While there are mechanisms in place such as the ACL, the ability to obtain an exemption means that alternative energy sellers may not be covered by all or part of the current energy specific regulatory framework. They may therefore not be required to provide the same suite and level of consumer protections as traditional retailers.

This difference in application in the current regulatory framework presents potential challenges for consumers and energy service providers. For example, consumers may enter into relationships with new energy service providers without the protections that they would normally expect. This could also impact the way new energy services are able to compete with traditional retailers.

Relying on the AER's current authorisation and exemption framework is unlikely to lead to consistent outcomes for consumers or market participants, including new energy service providers. The framework establishes a rather binary test around the provision of primary energy supply and disconnection capabilities that fails to recognise the changing way consumers are utilising energy. With combinations of distributed generation, storage and other technologies there may be no one identifiable "primary" supplier and no retailer. In these cases the consumer is still likely to need energy specific protections around how they connect to the grid, they are marketed to (information disclosure), and how disputes are resolved.

(ii) The purpose of energy specific consumer protections

The COAG Energy Council consultation paper notes that it is important to consider why consumer protections are required in the first place. It also sets out a number of issues and questions related to the issues that arise under the existing regulatory framework. These include how consumer protections impact on competition and innovation, rights to information, the availability and reliability of supply (ie access), access to dispute resolution, options for vulnerable consumers, and reduce transaction costs for consumers.

The issues identified in the consultation paper are important to address. It is though necessary to first consider the nature of product or service that may require specific consumer protections, and the purpose or need for energy customer protections. It is also important to focus on consumer and network outcomes, rather than on the type of service provider or the technology or business model, as these are likely to shift over time.

In July 2015, COAG Energy Council published its advice related to new products and services in the electricity market and associated issues for energy specific consumer

⁸ Those conditions may mirror the consumer protections available to a customer of an authorised retailer, to the extent that this is possible. Section 114(1)(c) of the Retail Law states that 'exempt customers should, as far as practicable, not be denied customer protections afforded to retail customers under this Law and the Rules'.

protections. In that advice COAG Energy Council considered the question of why there are energy specific consumer protections in place and how these protections are provided. COAG Energy Council highlighted that the aim of the existing energy specific regulations was to allow for increased competition for consumers and a set of specific consumer protections to complement other general consumer protection laws such as the ACL and privacy legislation. It also noted that the objective was to enable customers to participate in the market with confidence, support effective consumer choice and ensure ongoing access to energy on reasonable terms as an essential service. COAG Energy Council considered at that time this objective remained appropriate in the context of new products and services entering the market.

Given the objectives and concerns about network security and reliability, a number of consumer protection obligations on retailers and distributors are included in the National Energy Retail Law and National Energy Retail Rules. For example, the right to access service, the ability to enter into a retail contract to energise the connection, the installation of a meter for accurate billing, a clear disconnection process, information disclosure and consent requirements. Given the essential nature of energy services, further protections added include, the retailer of last resort requirements, hardship policies, and marketing and payment plans.

Many, if not all of these consumer and network outcomes, still need to be managed today. The difference is that many of the services consumers now receive are no longer provided within the framework as originally drafted. Further, the NECF was developed with the view that all consumers would be supplied through the interconnected electricity system, supported by a retail contract. Many products and energy services are now provided by different entities and the roles of these different groups are growing less defined. As a result, while the consumer protection and network requirements may be largely similar, it is no longer as easy to determine which participants should be subject to which regulatory requirements – demonstrated by the examples provided in [Attachment B](#). Given this, it is necessary to consider and provide positions on such matters as:

- Is electricity still an essential service? If so, is only grid-supplied electricity an essential service or is the source of supply irrelevant?
- Are energy specific consumer protections still required? If so, what is required in addition to general protections under the ACL?
- If energy is still an essential service and the ACL is not sufficient in certain areas, what are those specific areas where energy specific consumer protections are needed? Should those protections and the framework apply to all sources of energy. For example, should this apply to just grid-supplied energy or both grid-supplied and off-grid who have established stand alone systems?

Other considerations that may be relevant include:

- Is there a need to create a level playing field for traditional and new providers?
- Should consumers who take up new products and services have a similar level of energy specific protection as those attached to services provided by traditional energy retailers? Alternatively, should the consumer's exercise of choice be considered an implicit opting out of the energy specific regulatory framework?

-
- Should the grid remain as the safety net, with traditional retailers delivering the associated protections, but new providers being obliged to supply some level of funding, for example for Ombudsman schemes?
 - What are the most appropriate policy options? Is it, for example, expanding the NECF? Some more targeted approach? Reliance on the ACL? Voluntary/self-regulation approaches?

(iii) Development of guiding principles

The relationship between the energy consumer and energy service provider could warrant the provision of consumer protections for a number of reasons, including:

- the product or service is being provided is an "essential service" (ie., right to access/connect);
- the product or service is complex or it is likely that unsophisticated consumers use the product or service (ie., appropriate information disclosure);
- there are financial or physical risks associated with the product or service (ie., price and reliability); and
- there are difficulties for consumers in accessing means of redress (ie., access to dispute resolution).

The reasons for, or the outcomes where consumer protections are warranted, drive the type of consumer protections that are appropriate. For example, if the outcomes outlined above are sought for behind the meter services, they are likely to be equally relevant where a consumer is supplied through the interconnected grid by a traditional energy retailer or new energy service provider.

The relationships that consumers enter in retail energy markets may warrant specific protections due to all of the factors identified above. However, regulation should only attach to those relationships where it is necessary, and should also promote a specific purpose.

In the face of rapid technological developments, good regulatory practice should be 'principles-based' and allow the market to decide which technology or solution is preferable. The form of regulation should equally not favour a particular business model for the provision of a service over another. It should not restrict businesses from innovating to provide services that meet consumer preferences. Rather, consumer preferences should instead be encouraged to drive the form and quality of the service delivered to them.

The development of a set of key principles will assist to determine how different types of products and services should be treated against outcomes and whether and how regulation should apply. Two examples of principles that may be considered could include the need for:

- flexibility; and
- competitive neutrality between traditional retailers and new energy service providers.

Any developed principles should be subjected to industry and stakeholder consultation before any decisions on changes to the existing regulatory framework are made.

(iv) Testing principles against existing and future scenarios

The pace of change in energy markets is increasing. It is impossible to second-guess how the market and consumer preferences might evolve. It is however important to ensure that any energy specific consumer protection framework is relatively robust to change and flexible enough in design to respond to rapidly developing approaches to the delivery of energy services. This includes being able to respond flexibly to the blurring of the lines between the provision of generation and retail services. For this reason it is necessary to test outcomes and principles developed against a range of existing and future scenarios to make sure they generate sensible and consistent outcomes.

I look forward to engaging with COAG Energy Council officials on this policy reform area and other key reforms being progressed. If you would like to discuss any of the above, please do not hesitate to contact me or Kris Funston on 02 8296 7800.

Yours sincerely



Anne Pearson
Chief Executive

Attachment A: Dr Chris Decker, Regulatory implications of new products and services in Australian energy markets Final Report, July 2015.

Attachment B: AEMC response to proposed questions in COAG Energy Council consultation paper – consumer protections for behind the meter electricity supply.

ATTACHMENT B

Item 4.3 Consumer Protections for behind the meter electricity supply AEMC response to discussion points

Discussion point 1: Objectives

What objectives, beyond the Council's general objective, should be held in mind in addressing regulatory arrangements for behind the meter electricity systems?

Refer to section (ii) of the submission. The original objectives of the National Electricity Rules and National Energy Retail Rules should be kept in mind when considering the relevant energy specific consumer protections that should exist in the context of market developments. It is appropriate that any objectives should relate back to the National Electricity Objective, and National Energy Retail Objective.

Discussion point 2: Definition of behind the meter

Is the behind the meter electricity system definition appropriate for our purposes?

In defining a behind the meter system, is it important to consider other factors about the system such as:

- (a) the ownership model;**
- (b) the role of the system; and**
- (c) the number of customer's supplied.**

Is it important to consider behind the meter electricity systems for small and large customers for our purposes?

In July 2015, the COAG Energy Council published the advice from officials regarding new products and services in the electricity market. As part of this advice it was highlighted that a set of fundamental questions should be investigated to determine whether the energy consumer protection regime remains relevant as the electricity market develops.

The first question related to the nature of product or service provided to consumers that requires some level of consumer protection. We consider that this question remains relevant. The consideration of consumer protections policy related to energy services provided to the consumer must focus on outcomes and services that are provided.

The NECF currently applies to large and small customers. The set of principles that are agreed will help to determine what and how customer protections should apply, including which protections should apply to large (industrial and commercial) or small (residential and small business) consumers.

Discussion Point 3 and 4: Potential scenarios and ownership models

Are there any unique regulatory challenges that are presented by the different deployment scenarios?

Are there any unique regulatory challenges or consumer protection issues that are presented by the different ownership models?

Outlined below are a number of scenarios that link to the potential scenarios and ownership models outlined in the consultation paper. Table 1 provides a summary of example scenarios and protections that currently apply. More detailed examples are provided below.

The scenarios and examples highlight the issues and questions that arise in the provision of different products and energy services to consumers, and the need to consider the nature of product or service that is provided to consumers. We also recommend that COAG Energy Council officials have regard to the report prepared by Dr Chris Decker attached to this submission.

Scenario	Current protections	Key questions
100% grid-supplied energy from an authorised retailer	NECF protections all apply	As the market evolves is the full suite of protections still required in this scenario?
70% grid-supplied energy from an authorised retailer and 30% energy from solar and storage from an exempt seller.	NECF protections apply for the 70% of grid supply. For 30% of energy supply, general consumer laws apply in addition to any conditions placed on the exempt seller.	Are there certain protections that may not be required? or Should the authorised energy retailer bear all the obligations? See also the questions in Example A and B below.
5% grid-supplied energy from an authorised retailer and 95% energy from solar and storage from an exempt seller customer supplied by an embedded network operator with a retailer exemption and network exemption.	NECF protections apply for the 5% of grid supply. For the 95% energy supply only limited protections may apply – it will depend on the conditions imposed on the exemptions.	Is the provision of energy specific protections appropriate for the 5% of energy supplied? Should the authorised energy retailer bear all the obligations? See also the questions in Example A and B below.
Off-grid customer with an individual power system.	No NCEF protections other than general consumer laws apply.	Is the provision of no energy specific provisions appropriate based on objectives and outcomes sought?

Example A: Consumer with solar PV and storage, but still grid connected

In this example, the consumer is not reliant on a retailer for a reliable supply of electricity. They may remain connected to the grid so that they can sell any excess power not required by the storage device.

In this case would the solar energy provider require a retailer authorisation?

The current AER guideline would suggest that for this customer the solar energy provider would need to be authorised given they are the primary source of energy.

Would this then require them to have specific billing processes and a reconnection service? Is this the right outcome given that it is the storage technology (and not the solar company's business model) that has allowed the consumer to avoid requiring a retail contract?

Regarding the storage product, given it is a source of energy (albeit a derived one) and maybe the primary source of energy for particular periods of the day, would a storage provider need to be authorised?

Should the traditional distributor be required to maintain infrastructure to the household and the traditional retailer still be on-call to connect? Or should the burden be on the off-grid energy provider to participate in an equivalent to the retailer of last resort (ROLR) scheme?

Example B: Consumer with solar PV and storage with a retail contract

In this example, the consumer requires a retail contract for the occasional periods when the solar/storage solution provided by the solar energy provider does not fully cover their load.

What is the primary source of power in this instance?

If the retail contract is the add-on service, would the solar energy provider avoid authorisation in this instance given the presence of a retail contract?

Is that the right outcome given the costs this imposes on the retailer vis-à-vis the solar provider?



Regulatory implications of new products and services in Australian electricity markets

FINAL REPORT

Prepared by:
Dr Christopher Decker

17 July 2015

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Summary

Australian electricity markets are experiencing a period of significant change. A range of new products and services are emerging that are changing the way in which electricity is supplied to consumers, and how consumers engage with the market. The organisations providing these services, and their business models, also differ from traditional suppliers. In aggregate, these changes have potential implications for the approach to the regulation of retail electricity markets and, in particular, on regulations designed to protect electricity consumers.

The key findings of this paper, in summary, are:

- i. For most products and services, robust competition is the best form of consumer protection, and only minimal consumer protection regulations are required. In markets newly opened to competition, such as retail energy markets in Australia, additional consumer protection regulations are frequently premised on a need to: inform consumers of risks, and their rights, in a new, unfamiliar, context; address the new incentives of suppliers in the changed context; and address any differential impacts on consumers of the opening of a market to competition. Consumer-related regulations may also be introduced to help achieve the policy objective of promoting competition in these markets.
- ii. Consumer protection regulations are not costless. They can have important impacts on supplier (supply side) and consumer (demand side) behaviour, which, in turn, can affect the intensity of competition in a market and the incentives for innovation. Aspects of the wider economic regulatory framework (such as allowed pricing structures) can impact on consumers, including in relation to questions of distribution (for example, whether some consumers are cross-subsiding others), affordability, and, because these aspects impact on the long-term viability of network operators, on consumers' long-term interests in energy security.
- iii. A survey of selected countries suggests that a range of new products and services, and new entrants, are emerging in retail electricity markets. In particular, in response to various subsidies and incentives, and declining installation costs, there has been significant growth in the adoption of onsite solar PV technology at the household level (i.e.: behind the meter). However, the financing of this onsite generation differs across jurisdictions surveyed. In the US, a third-party owner-operator financing/leasing model is most common, while in Europe most onsite generation facilities are typically financed by the owner and are funded through a feed-in-tariff (FIT) that sets a guaranteed price for renewable generation for a set period (of up to 20 years).
- iv. The consumer protection issues, and policy responses, in relation to emerging products and services in electricity markets have differed across the countries surveyed, reflecting different supply contexts and policy frameworks.

- The US has seen calls for greater consumer oversight of third party operators of onsite generation facilities following consumer protection concerns around misleading sales practices and general consumer confusion around their rights and obligations under these arrangements. In addition, in some states, third-party operators/owners face potential classification as a 'utility', and, accordingly, the same regulatory conditions as traditional electricity suppliers. Another issue in the US has centred around net metering policies, and in particular the uneven distributional impacts of such policies (they have been seen to benefit those who net-meter at the cost of those who don't). This has led to a review of the net metering policies in some states.
 - Concerns about consumer protection for onsite generation have not featured to the same extent in the EU countries surveyed, but more general concerns have been expressed about the costs of renewables policies, including in terms of the system balancing costs of intermittency, and the distributional impacts this may be having on certain categories of consumer. In Britain, the energy regulator is currently consulting on the regulatory treatment of non-traditional business models, and third party intermediaries, including in the context of consumer protection. In the Netherlands, a recent change in the law will allow for the trial of local generation supply arrangements without regard to the existing regulatory framework, the purpose being to evaluate what issues arise, and whether a special regulatory regime may be required for local energy generation.
 - Regulatory policies directed towards consumers who have low-incomes or special needs are sometimes cited as a potential barrier to entry for certain emerging business models. However, different regulatory approaches are adopted across the surveyed jurisdictions to such consumers. In the US, federal and state assistance programmes assist consumers with special needs, or those consumers on low incomes. In Europe, specific consumer protection measures exist for 'vulnerable' consumers in electricity markets. However, the concept of 'vulnerable' is within the discretion of EU Member States. In some countries, such as Germany and the Netherlands, vulnerability is defined having regard to existing universal social policies, while in the UK, the notion of vulnerability has been interpreted broadly to include situations where a consumer is significantly less able than the typical consumer to represent their interests in the energy market.
- v. New services and products are challenging traditional services and supply structures in a number of other regulated industries and activities. A brief review of these sectors offers some potential insights to guide the approach to the treatment of new products and services in Australian electricity markets, in particular:
- The emergence of over-the-top (OTT) services, such as VoIP, in the telecommunications industry has given rise to similar issues as those associated with the emergence of new products and services in electricity markets (for example, consumer awareness of different quality of service levels, and whether there is a need for informed consent policies for customers who choose to take particular risks with a new type of service). In responding to these services,

regulators have sometimes drawn a distinction between services that interconnect with a traditional network and those that don't. However, concerns have arisen that the asymmetric treatment of traditional and OTT services may be deterring innovation and creating an un-even playing field, and there is increasing recognition of the need to review policy in this area.

- New entrants in postal service markets are not typically bound by the same consumer protection obligations as an incumbent, and in some jurisdictions have targeted their services to the most profitable customer-segments. This has had implications for traditional service providers who have faced declining revenues while still having to meet universal service obligations. In response, some jurisdictions are reviewing the financing and scope of universal service arrangements (including through a wider set of suppliers contributing to this financing). Such initiatives are of potential interest in relation to electricity markets where traditional suppliers need to remain viable to provide back-up generation for, and absorb the increased system operation costs associated with, intermittent generation, even though they may supply a declining share of the market.
- Market-opening policies in the airline industry have led to significant entry, particularly by low cost carriers. Consumers have generally benefited in terms of lower prices, but have seen disbenefits in other dimensions (although some argue these issues may stem from a failure of consumers to adapt their expectations to the different price-quality offerings). Some countries (although not Australia) have introduced a set of consumer rights for air passengers in response to consumer protection issues (for example, rights in respect of delay or cancellation). These rights rest with the passenger, and are not specific to particular airlines.
- The most relevant insights from the gas and water and wastewater sectors relate to the regulatory oversight of the non-mains supplied market. Both sectors provide examples of 'essential services' that are not universally supplied to all citizens, and where 'off-grid' consumers often do not have the same consumer protections as those who are 'on-grid'.
- Finally, the regulatory response to the emergence of 'sharing economy' platforms (such as Uber, Airbnb etc) varies significantly across services and jurisdictions: some new services (such as ride-sharing services) are banned outright; others are allowed subject to satisfying various consumer and public protection requirements. As in electricity markets, some regulators are concerned about a potential 'mismatch' between existing regulatory frameworks and the nature of the new products and services, and have recognised a need to tailor regulation so as to not be disproportionate, and discourage innovation and entry.

1. Introduction

1.1 Purpose and context of this research

As in many parts of the world, electricity markets in Australia are experiencing a period of significant change in the ways in which electricity is being produced, transported and consumed. These changes involve, among other things, the emergence of a range of new products and services relating to electricity supply and demand management, as well as changes in how consumers engage with the market and manage their consumption and costs.

In aggregate, and as described in more detail in this report, these changes have implications for the traditional, centralised, unidirectional electricity supply model in relation to which regulatory arrangements were originally developed. Against this background, this report considers the implications such changes might have for the approach to the regulation of retail electricity markets and, in particular, on regulations that have been designed to protect electricity consumers.¹

Under the existing consumer protection framework in Australia, all electricity consumers benefit from certain protections under general consumer law (the Australian Consumer Law (ACL)² at the national level and fair trading legislation at state and territory level), while additional protections are provided to residential and small business customers under the National Energy Customer Framework (NECF).³

In considering the potential implications of new products and services on this existing consumer protection framework, this report:

- Considers some foundational questions regarding the rationale for consumer protection laws in competitive markets, and the reasons why additional sector-specific consumer protection regulations may be necessary in areas that have only recently been opened to competition (such as retail electricity supply) or, in relation to some activities, on an enduring basis.

¹ The main focus of this report is on small consumers, such as households and small businesses.

² The ACL provides protections for consumers in relation to misleading, deceptive and unconscionable conduct; unfair contract terms and unfair practices; consumer guarantees; unsolicited consumer agreements (including door-to-door and telephone sales); product safety; and enforcement remedies.

³ This includes: guaranteed access to an offer of supply for electricity and gas; requirements relating to information about and marketing of energy contracts; requirements relating to customer consent, including that customers must give explicit informed consent to enter into a market retail contract (as opposed to a standard contract or deemed contract); a customer hardship regime, requiring retailers to develop customer hardship policies that must be approved by the AER, with certain prescribed elements, to assist residential customers experiencing longer-term payment difficulties; limitations on disconnection, including the processes that must be followed, restrictions on when disconnections can occur, additional protections for customers experiencing hardship or financial difficulties, and a prohibition on disconnecting premises where life support equipment is required; information requirements for planned and unplanned interruptions; requirements relating to customers with life support equipment; distributors to have, and inform customers of, complaints procedures; and retailer of last resort arrangements, so that a customer can receive an electricity supply from another retailer should the current retailer be unable to continue providing the service (for example if it goes out of business).

- Considers how regulators and policy makers are responding to similar changes in electricity markets in other countries.
- Considers how regulators and policy makers are responding to the emergence of new products and services, and alternative business models, in other regulated industries and activities.

1.2 New products and services in electricity markets

Factors driving change in electricity markets

A number of technological, economic, consumer and policy factors appear to be driving the changes that are leading to the emergence of new products and services in electricity markets. In particular, technological advances, and associated cost reductions, in distributed generation technologies, particularly solar PV and small-scale wind turbines, are allowing more and more consumers to generate some of their electricity needs onsite. In some cases, these changes have been facilitated by the development of new models for financing distributed generation facilities, including leasing, third party power agreements, and long-term contracting options. In the future, the potential for widespread adoption of low-cost storage capabilities could also have significant effects on electricity markets.

On the demand side, the introduction of smart meters and other technologies, such as hot water load control systems, provide scope for consumers to better engage with the market in real-time.⁴ Consumer engagement has also been facilitated by the emergence of price comparison websites that enable consumers to assess how their retail supply arrangements compare to different offers available on the market, and by energy efficiency intermediaries who offer services which can allow consumers to conserve and better utilise electricity.

Some of these changes reflect policy measures and initiatives including those which have: encouraged the adoption of renewable generation technologies (such as through subsidies or guaranteed feed-in-tariffs); focussed on energy efficiency; been directed at increasing competition; and encouraged more active engagement by consumers. However, the changes also arguably reflect wider changes in consumer preferences, such as an increased awareness of the environmental impacts associated with the production and consumption of electricity and, in some cases, disenchantment with traditional energy suppliers.

Categories of new products and services

Among the general categories of products and services which are currently on offer or under development, are those which:

- Change the way electricity is produced and supplied to, and by, consumers. This includes small-scale onsite distributed generation facilities (such as solar PV facilities

⁴ These changes are complemented, and indeed facilitated, by technological changes in network management – such as the development of ‘smart networks’ – and in system operation, which provide greater flexibility in terms of how the system is managed and operated in real-time.

and small scale wind turbines), microgrids, community owned generation facilities as well as peer-to-peer platforms for the trading of electricity.

- Allow consumers to store electricity. While the cost associated with electricity storage facilities have meant that they do not yet have mass-market appeal, recent developments and innovations suggest that this option may become viable for a larger number of consumers in the future.
- Change how electricity is consumed, for example by making consumption more efficient, or reducing the overall demand for electricity, such as by installing insulation or energy efficient appliances.
- Affect how customers assess and make choices regarding different electricity services and suppliers. This includes price comparison sites, energy brokers and other intermediaries, as well as services offering energy efficiency advice or bill forecasting or checking services.
- Allow customers to actively engage in the electricity market by adjusting and managing their consumption patterns in real time (such as remote and home management systems and smart thermostats) or choose non-traditional suppliers of electricity services (such as 'white label suppliers').

Another important change relates to the types of organisations that are providing these services and their business models. Among the new types of suppliers are: community owned and operated bodies, such as cooperatives; not-for profit companies; municipal bodies; third party for-profit financing companies; and operators of peer-to-peer sharing platforms. In addition, large private enterprises from other sectors, such as telecommunications and the IT sector, are, in some jurisdictions, apparently interested in these developments. In response to this entry, a number of traditional energy companies are also changing their activities and structures to become 'multiservice' operators, who combine energy supply with other services.

1.3 Structure of this paper

The analysis in this paper draws on a wide range of materials including: policy-documents; regulatory consultations; reports and decisions; academic papers and other documents. The material for the comparative discussion in section 3 also draws on discussions with electricity regulators in Germany, Netherlands, the UK and with the Council of European Energy Regulators. The purpose of these discussions was to hear first-hand how the specific issues that are being considered by this project are being addressed in other jurisdictions.

The report comprises three additional sections. Section 2 identifies and describes the general principles which underlie the consumer protection framework for traditional electricity supply products and services. Section 3 presents a brief survey of issues associated with new products and services in electricity markets in selected international jurisdictions, namely the US, EU, UK, Germany and the Netherlands. It also considers how regulators in these jurisdictions have responded, or are responding, to these issues. Section 4 provides

an overview of regulatory issues and responses to new products and services in other regulated industries and contexts, such as telecommunications, postal services, air transport, gas, water and in the so-called 'sharing economy'.

2. Rationales for consumer protection regulation

This section discusses some of the reasons which underlie the existence of consumer protection regulations in competitive markets generally and in the electricity market in particular. It does so by first looking at some of the principal economic rationales for general consumer policy (i.e.: non-electricity specific),⁵ and then by considering the rationale for additional sector specific consumer protections in electricity markets.

2.1 General economic rationales for consumer protection regulations

2.1.1 *Why isn't competition enough to protect consumers?*

Economists would generally argue that robust competition is the best form of protection for consumers for most products and services, and only minimal consumer protection regulations will be warranted (relating to fraud or deception, faulty goods, non-performance of contractual commitments, or enhanced market transparency).⁶ This is because, in effectively competitive markets, firms have a natural incentive to foster a reputation for being reliable and good quality suppliers of services,⁷ and can have incentives to overcome information asymmetries where they exist.⁸

However, it is also recognised that in some competitive market contexts, competition alone may not adequately protect consumers and ensure that they make effective choices. These market contexts might be categorized as those where there is a lack of incentive to maintain a good reputation and those where there are pronounced information asymmetries between suppliers and consumers.

2.1.2 *Market contextual factors which may necessitate consumer protection regulations*

Contexts where there is a lack of incentive to maintain reputation

In many competitive market settings, suppliers have an incentive to provide good quality products and services to consumers in order to build and maintain their reputation, however, where such a concern for reputation does not exist, a reliance on competition alone may be insufficient to protect consumers. There are two general situations where reputational incentives may be low in a market. Firstly, when consumers only make infrequent purchases from a supplier, such that the mechanism of rewarding (or punishing) suppliers for good (or poor) quality services is insufficiently engaged. Secondly, where suppliers adopt a short-

⁵ There may of course be other policy rationales for consumer protection regulation (associated with individual rights and distributive justice) but the focus of this paper is on the economic rationales for such regulation.

⁶ See, for example, Armstrong (2008:106); Armstrong (2011:1); Muris (2002).

⁷ As Muris (2002:4) puts it: “The consumers’ ability to shift expenditures imposes a rigorous discipline on each seller to satisfy consumer preferences. It often motivates sellers to provide truthful, useful information about their products and drives them to fulfill promises concerning price, quality, and other terms of sale. Consumers can punish a seller’s deceit or its renegeing on promises made by voting with their feet – and their pocketbooks.”

⁸ For example, in order to build market share firms may seek to reduce the search and switching costs of consumers by reducing some of the costs of switching (i.e.: carrying the burden of any one-off costs of switching) or providing targeted information which allows consumers to better understand the offer available.

term view of their activities and do not care sufficiently about fostering a long-term reputation for being a good quality and reliable supplier.⁹

Problems associated with imperfect information

Competition alone may also be insufficient to protect consumers where there are pronounced information asymmetries in a market. Information asymmetries between suppliers and consumers of a service can distort consumer decision-making in ways that are inefficient,¹⁰ and can be particularly prominent in relation to so-called 'experience goods' (where the attributes of the product are not revealed until after purchase) and 'credence goods' (where the attributes of the product are not fully revealed even after purchase).¹¹ For both of these categories of goods, because consumers cannot fully appreciate quality differences, the incentives for suppliers to provide higher quality goods (which are most costly to supply) can be low, and may result in poor quality suppliers pushing out high quality suppliers.¹²

Of course information problems of this type do not necessarily require additional consumer protection regulation, and a range of collective reputational mechanisms can address such information asymmetries. These range from word-of-mouth recommendations to information sharing platforms (website ratings of particular suppliers), the use of guarantees or warranties, and other forms of quality control such as minimum qualifications or other accreditation techniques for suppliers (either self-regulatory or mandatory).¹³ The question of the extent to which market-based initiatives, such as product comparison websites, adequately address the information asymmetry problem such as to reduce the need for consumer protection regulations for some services (such as energy and financial services) is an active area of inquiry both in academic research¹⁴ and by regulators.

2.1.3 Other rationales for consumer protection regulations

There are four other rationales that are sometimes used to justify consumer protection regulations in some competitive markets: (1) the need to deal with 'irrational' consumer

⁹ Muris (2002:4) succinctly captures the point: "*The commercial thief loses no sleep over its standing in the community. The fraudsters – as we shall call them – cheat consumers, grab the revenues, disappear from sight, and often emerge in another guise to steal again.*" Armstrong (2008:105) refers to the textbook example of a restaurant in a tourist area as not being unduly concerned about long-term reputation (while noting that they may nevertheless be concerned about ratings in guide books, and in these days Internet ratings).

¹⁰ Most obviously, misleading marketing practices can give rise to allocative inefficiencies (consumer preferences are distorted by inaccurate valuations of services based on misrepresentations by the seller) and productive inefficiencies (the potential for misrepresentations can increase consumer search costs, or result in consumers purchasing services from poor quality suppliers - who misrepresent the quality of their service - which drives higher quality suppliers out of the market).

¹¹ Examples of credence goods that have been suggested include the services provided by: surgeons, optometrists; computer engineers, car mechanics and taxi-drivers.

¹² This is the familiar problem of the 'lemons'. See Akerlof (1970).

¹³ See Armstrong (2008:100).

¹⁴ On the one hand, product comparison websites and other information intermediaries such as brokers (see below) can reduce consumer search costs and potentially improve the information basis on which consumers take decisions. However, comparative websites are not always panacea, and the limitations of such sites can be particularly pronounced: when the majority of consumers do not use such websites, or do not visit multiple websites to scan the market; where the websites are commercial operations and accept fees for listings; where websites use single-dimensional measures of price or other product attributes in order to rank offers; and, relatedly, where there is no single price or price index to use in the ranking of products (because of the fact that non-linear tariffs are used as in the electricity supply sector). See Armstrong (2008: 109).

decision-making; (2) a perceived need to protect certain types of consumers; (3) that the service supplied is essential; and (4) the timing and magnitude of any potential consumer harm associated with problems with supply of the service.

The need to deal with 'irrational' or imperfect consumer decision-making

Research in behavioural psychology and economics has found that a wide range of consumer behaviour deviates from the standard rational decision making often assumed in understandings of how competitive markets work. This work suggests that, because of various cognitive limitations and decision-making biases, consumers sometimes act in ways, and take decisions, which are not 'rational' insofar as they are inconsistent with their own welfare.

This research calls into question the standard assumption that providing consumers with sufficient information will ensure effective participation in a market. Instead, this work suggests that effective decision-making may frequently be hampered by cognitive limitations associated with processing the information, or by other behavioural and decision-making biases (such as the status quo bias, anchoring, the over-optimism bias or the endowment effect, to name a few), and, moreover, that suppliers who recognize these cognitive limitations, can have incentives to exploit them, including through the way they present information, the timing of offers, and other tactics.¹⁵ It is sometimes argued that, in these circumstances, consumer protection regulations may be justified in so far as they seek to address such limitations/biases and prevent such exploitation.¹⁶

The findings of behavioural economics also suggest that the way in which suppliers interact with consumers can affect the consumers' ability to process information, and this may provide two other rationales for certain types of consumer protection policies. Specifically, in making decisions, consumers do not always rationally approach the search process and invest sufficient time and effort in collecting and analysing all offers available in a market to find the best offer. Rather, actual consumer decision making can be influenced by a range of factors such as the timing of when an offer is presented (whether it is the first one they see); past decisions and experience of purchasing from specific suppliers; brand reputation of a supplier; and the positioning of an offer (such as whether it is on a particular shelf, or at a particular position on a website). In addition, because consumers often adopt a random search process and do not assess each service offering rationally, this gives rise to the potential for their decisions to be 'steered' towards specific offers by intermediaries such as brokers, or by product comparison websites which accept a commission to give certain suppliers a privileged position. In this context, the argument has been made that additional competition will not alleviate this problem, and there may be a role for consumer protection

¹⁵ For example, if suppliers recognise an over-optimism bias in certain categories of consumer, such as in relation to the ability to pay bills on time, or expected levels of future consumption of the service, this can create an incentive for firms to exploit such biases (such as through high penalties for late payment of bills; tariff plans which allow for a set amount of consumption at a fixed rate but apply a significantly higher tariffs once that set amount of consumption is exceeded (i.e.: leading to bill-shock); unduly onerous notice periods which lack a clear rationale; or early contract termination payments which are excessive).

¹⁶ However, not all supplier responses to such biases and limitations will be obviously detrimental to consumers – for example, firms in effectively competitive markets may have incentives to simplify decision-making in recognition of biases, such as the status quo bias, making it easier for consumers to overcome their biases.

policies which limit the use of commission payments by suppliers to sales intermediaries.¹⁷

Another factor seen to potentially impact on consumer decision making are the sales methods and tactics used by suppliers, and here too the economic argument has been made that competition alone may not be sufficient to protect consumers.¹⁸ Specifically, where suppliers adopt tactics which artificially rush or restrict consumer decision-making (such as offering discounts for immediately making a decision, or so-called ‘exploding offers’) this can reduce the willingness of some consumers’ to seek out and assess all the available offers to find the best offer for them. In response, it is argued that some form of additional consumer protection regulation may be required.

A perceived need to ‘protect’ certain types of consumer

Consumer policies are also sometimes justified on the basis of a perceived need to protect against harm arising to specific consumer groups,¹⁹ and to increase the number of informed and active consumers. While this rationale is often motivated by fairness or social welfare considerations, there is also a substantial economic dimension to it. Specifically, if a significant proportion of a market are not actively engaging in that market – because, for example, they lack access or information, or are otherwise not sufficiently equipped to make choices in their own best interests – this will reduce the competitive pressure that is placed on suppliers by consumers. Put differently, if a significant proportion of consumers are, for various reasons, inactive, then active consumers need to work harder to ensure that competition is effective.²⁰

The extent to which informed and uninformed consumers²¹ protect, or even harm, one another is a growing area of research in economics. In brief, this work finds that the effects of consumer protection policies can vary across settings, and that in some settings consumer protection policies designed to protect uninformed consumers can actually harm informed consumers.²² An example is where suppliers use terms contained in the small print of contracts to obtain monopoly profits from uninformed consumers, which are then used to subsidise prices for the main product to the benefit of informed consumers (which is the reward for investing time to read the small print of a contract to avoid specific costs being incurred or default situations arising). Consumer protection policies that seek to publicise or improve information about the small print of the contract can therefore be detrimental to informed consumers who benefit from the fact that uninformed consumers do not invest time to read the small print of contracts and become ‘informed’.²³ Developing appropriate consumer protection policies is complicated further in practice by the fact there is not, in reality, two well-defined groups of consumers – informed and uninformed. Rather,

¹⁷ See the discussion in Armstrong and Zhou (2011a).

¹⁸ See Armstrong and Zhou (2011b) and more generally Armstrong (2011).

¹⁹ This will include consumers that are generally collectively labelled as ‘vulnerable’ consumers, such as those on low incomes, or with special needs.

²⁰ As Armstrong (2014:1) puts it: “An old intuition in economics suggests that savvy consumers help to protect other consumers, and that consumer policies which protect vulnerable consumers are only needed when there are insufficient numbers of savvy types present in the market.”

²¹ Sometimes also referred to as sophisticated or naïve consumers, or active and inactive consumers.

²² See Armstrong (2008:112) and references therein.

²³ See Armstrong (2014:37) who concludes: “Regulation to constrain ripoffs may therefore be efficient, but will harm the savvy types who prey on naïve consumers when they fall into small-print traps”.

consumers lie on a spectrum of being more or less informed.²⁴ The potential inability to quantify the size of different groups can make it challenging to assess and design policies that target a specific group of consumers (such as vulnerable consumers) while not unduly harming other consumers, who may represent a significant minority.

This topic touches on a longstanding debate in economics associated with issues of distributive justice and fairness, and how inequalities are best addressed by governments. In this context, there are questions about whether consumer protection policies are the most appropriate mechanism to assist vulnerable consumers, or whether other more targeted policies are more appropriate.²⁵ This topic also engages wider political questions, such as whether certain groups in a society should be afforded particular *special* rights under law in recognition of their relatively weak bargaining position.²⁶

Nature of service provided

A further rationale for the existence of consumer protection regulations in some contexts relates to the nature of the service being supplied. In particular, certain services are argued to be of such importance to either economic or social welfare that consumers require protections over and above those provided by the market. Utility services, such as electricity supply, are often classified as 'essential', and this has been seen to justify consumer protections in relation to such services additional to those provided by the market and by general consumer protection laws. For current purposes, we note only that one of the reasons why electricity supply is considered to be of substantial importance is because it is used as intermediate input into many industrial, commercial and household activities, such that disruptions to supply can have large spillover effects on economies, society and individuals.²⁷ The importance of the electricity to the 'health, safety and wellbeing' of Australians has been recognized by the Ministerial Council of Energy.²⁸ Similarly, the European Commission has spoken of the risk of consumers who are unduly denied access to energy becoming 'economically, socially and culturally isolated'.²⁹

Magnitude and timing of potential consumer harm

A more general argument for implementing consumer protections above those provided in competitive markets, and which arguably relates to the 'essentiality' point above, relates to the timing of when any harm to consumers will occur, and its magnitude. For example, while suppliers of non-essential services who consistently supply poor quality would, for the reasons outlined above, be expected to suffer consequences over the medium to longer term (as a result of consumers 'voting with their feet'), disruptions or poor quality supply of essential services may cause significant and irreversible harm to individual consumers in

²⁴ To take an example, consumers may be more or less computer literate

²⁵ See OECD (2008:24).

²⁶ Other examples of contexts where groups can be afforded special rights are tenants vis-à-vis landlords, and employees vis-à-vis employers. The special protections are premised on recognition of the imbalance in power, and the need to prevent possible exploitation.

²⁷ Hyams et al (2010:5) estimated that unreliable and poor quality power cost the US an estimated \$80-\$150 billion annually in lost productivity and damaged goods.

²⁸ See Ministerial Council on Energy Standing Committee of Officials (2008:18).

²⁹ ACER/CEER (2013: 202).

relatively short periods of time.³⁰

This engages with a wider discussion about the timing of regulatory interventions, and specifically *ex ante* and *ex post* approaches to regulation insofar as generic consumer laws are generally *ex post* in nature (they are employed after an act causing harm has occurred) whereas much sector specific consumer protection regulation – such as the NECF – is *ex ante* in nature and designed to prevent consumers being harmed in the first instance by proscribing and prescribing certain conduct.

2.2 The nature of consumer protection regulation

The preceding discussion set out some general reasons why, even in competitive market settings, there may be a need for consumer protection regulations. In this section we briefly describe the type of general consumer protection policies that are used to address some of these issues.

There is much variation in the specifics of consumer protection policies across jurisdictions and sectors. Notwithstanding this point, many consumer protection policies aim to:³¹

- Improve the information available to consumers. This includes prohibiting false and misleading advertising or representations by suppliers, and aggressive sales practices, which can distort consumer decision-making. It can also include requirements to ensure that information is comprehensible to consumers.
- Ensure that contractual terms are transparent, that certain information is disclosed and that contractual terms are not unfair,³² or disproportionately burdensome for consumers.
- Maintain certain quality standards by ensuring that the products/services supplied correspond to the description provided at the time of sale, are fit for any purpose agreed, and are of satisfactory quality (i.e.: they are not faulty or defective). In some cases, there are requirements to ensure that adequate complaint and dispute resolution mechanisms are available after sale.
- Regulate who can supply a service, through authorisation and licensing requirements. This is premised on a perceived *ex ante* need to allow access to the market only to suppliers who display certain attributes (i.e.: such as sufficient technical, operational and financial capabilities), or have in place appropriate

³⁰ For electricity supply, Hyams et al (2010:5) estimate that: “*Even momentary interruptions are costly for certain customers at more than \$11,000 per event for medium and large commercial customers*”.

³¹ Vickers (2003:2) approaches the issue of conceptualising consumer policy by considering the problems it is designed to address which include: (i) duress and undue pressure (such as aggressive marketing practices like doorstop selling); (ii) information problems pre-purchase (such as bans on misleading or deceptive advertising and certain disclosure requirements); and (iii) undue surprise post-purchase (unfair terms in contracts such as denying access to redress mechanisms).

³² Generally, a contractual term is considered unfair when it causes a significant imbalance in the rights and obligations of the parties under the contract, which is to the detriment to the consumer.

processes and policies to deal with certain consumer protection issues (such as a complaints handling procedure).

2.3 The need for additional consumer protections in retail electricity markets

As described above, one overarching economic rationale for the existence of a minimal level of consumer protection regulation is to ensure that consumers have sufficient confidence and trust in suppliers in circumstances where reputational effects may be insufficient. In these circumstances, consumer protection regulations enhance the trust that consumers have in markets, increase the volume of trading and are therefore market expanding.³³

This need to foster and develop trust and confidence in markets is arguably a principal reason why specific consumer protection regulations have been introduced in markets that have been newly opened to competition, such as retail energy markets in Australia and elsewhere. The opening of such markets to competition can expose consumers to new risks, with which they are unfamiliar (supply having previously been through an integrated monopoly supplier) including more complex tariff and pricing structures, and a need to assess competing offers. In this sense, additional consumer protections in newly liberalised markets, such as retail electricity markets, are based on a kind of ‘infant consumer’ argument (i.e.: consumers need time to find their feet in the new environment of choice).³⁴

Accordingly, in the context of market opening, additional consumer protection regulations have frequently been seen as necessary to:

- Inform consumers of the risks and their rights in the new context, including through: informed consent policies; minimum or standardised contractual terms; and access to inexpensive dispute resolution mechanisms (such as ombudsman schemes).
- Address the new incentives of suppliers in the changed context. For example, regulations may be needed to prevent incumbent or traditional suppliers from developing working practices and contractual terms that seek to ‘lock-in’ consumers for specific periods (for example, through the use of automatic roll-over contracts, or contract termination penalties) or by making it unduly onerous for customers to switch supplier by having an extended notification period.³⁵
- Address non-scrupulous business and marketing practices that may emerge among operators (including incumbents and entrants alike) in the initial stages of market opening. For example, aggressive doorstep and telephone selling practices.

³³ Muris (2002:5) draws this link between a lack of trust and wider market implications, in observing that: “*Deceit by one group of sellers may lead consumer to doubt the integrity of an entire industry or to distrust markets generally. ... Truthful sellers must resort to extraordinary measures to persuade consumers of their honesty*”.

³⁴ See Armstrong (2008:131) on the ‘infant consumer’ point.

³⁵ Lock-in of this type can also be framed as a competition concern. See Vickers (2003: 16) who discusses the lock-in phenomena, and other aspects of consumer law, as examples of micro-competition policy: where the consumer is locked-in to a contract it is vulnerable to the exploitation of ex post market power by the supplier.

- Address any differential impacts on different categories of consumers that can be created by the opening of a market to competition. Specifically, in some settings, it has been shown that the average price paid by uninformed consumers actually increases as the number of suppliers in the market increases.³⁶ This raises the question of whether additional consumer protections are required to protect vulnerable or uninformed consumers in the early days of market opening.

In addition to these rationales, certain consumer-related regulations may be introduced in newly-opened markets to help achieve the policy objective of promoting competition in these markets. For example, measures may be introduced to encourage active searching and switching by consumers to facilitate the development of a competitive market. These can include measures to improve price transparency and comparability, as well as consumer education measures.

2.3.1 Are these additional consumer protection regulations needed as competition develops?

A key matter for this review is whether some of these consumer protection concerns only pertain in the initial stages of market opening or whether they are enduring. Arguably, as the markets become more liquid and established, with more suppliers concerned with reputation, and consumers becoming familiar with the new products and with exercising choice in these markets, some of these rationales for additional consumer protections will be less compelling. The question is therefore which protections are likely to become unnecessary as competition develops, and which will endure irrespective of the intensity of competition in the market.

The danger of not addressing this question is that some protection measures which may be appropriate in the early days of market opening to encourage search and switching (such as requirements for minimum standardised contractual terms, standardised tariff and billing procedures, or limitations on abilities of suppliers to enter into certain types of supply contracts) can, as the market develops, limit differentiation among suppliers and innovation more generally. Moreover, requirements to offer a standard contract can be inimical to competition as the market matures. At the same time, as more consumers become familiar with the competitive market context, and with the risks of different offers and sales practices, some of the regulations may be redundant, and may also frustrate consumers who would like to negotiate more bespoke arrangements with higher levels of risk.

A separate question is what consumer protection regulations should be in place where there is no prospect of retail competition – such as retail markets for the supply of water and wastewater services to households in many jurisdictions. In these circumstances, the consumer protection measures described in the previous section (particularly those designed to inform consumers of the risks of the new market context, address the new incentives of suppliers, or encourage search switching and consumer education) are not relevant. However, in these circumstances, given the essential nature of the service and the fact that it is being supplied by a monopoly supplier, there may be a need for other types of

³⁶ See Armstrong (2008:130).

consumer protections, such as those which aid transparency and enable consumers to understand how their bill has been calculated, and address the asymmetrical bargaining position of consumers.

2.4. Interactions between consumer protection policy, competition policy and the wider regulatory framework

2.4.1 The relationship between competition and consumer protection policies

It is generally accepted that competition policy and consumer policy have the same objective, which is to deliver well-functioning markets and to improve consumer welfare.³⁷ In terms of the division of labour: competition policy focusses on the supply side (by restricting anti-competitive agreements and practices and misuse of significant market power) while consumer policy focusses on the demand side (by ensuring that consumers are able to make effective choices and decisions). However, the policies are necessarily intertwined: consumers benefit from robust competitive markets, but they also generate them by being active in the market.

In most cases the two policies are mutually reinforcing: consumer policy fosters active and informed consumers who are prepared to withdraw their custom from suppliers who do not offer a sufficient quality of service and therefore keep suppliers 'on their toes', while competition policy fosters markets where suppliers compete on the merits, and have incentives to supply consumers with products and services that best satisfy their preferences. Likewise consumer protection regulations which protect against poor performing suppliers and products can enhance consumer confidence in markets and encourage high-quality suppliers to compete in the market (i.e.: they can be market expanding). Similarly, consumer protection regulations that require information be presented in specific ways so it is understandable to consumers can enhance the ability of consumers to compare offerings and make informed decisions which can also be market expanding.

While consumer protection policy and competition policy are generally mutually reinforcing and advance economic welfare, there can also be areas of tension between the policies. In this section we consider how consumer protection regulation can impact on supplier (supply side) and consumer (demand side) behaviour, and the impact this can have on competition and innovation, and therefore, ultimately, on consumers.

Impacts on the supply side

Consumer protection regulations can impact directly and indirectly on the behaviour and incentives of suppliers in a market, and therefore on competition. Most obviously, consumer protection regulations can impose direct costs on suppliers, which are ordinarily reflected in prices paid by consumers.³⁸ These costs manifest in various ways but might include costs

³⁷ See OECD (2008:8).

³⁸ However, this does not mean such costs are borne equally by all consumers. This was recognized in an early UK legal case touching on consumer protection where it was observed that: "*the price to the public of the protection afforded to a minority of consumers might well be an increase in the cost of goods and services to consumers generally.*" See *Tesco Supermarkets Ltd v Nattrass* (1971).

associated with requirements to: provide minimum levels of service;³⁹ service particular consumer groups; incur various liability risks; and establish and participate in consumer dispute resolution schemes (such as ombudsmen). Consumer protection regulations can also impact directly on the supply side of the market where the ability of suppliers to advertise and market their products is restricted, or where the licensing conditions for entry into a market discourage innovation in supply methods.⁴⁰ Paradoxically, policies which constrain entry are frequently premised on the need to protect current consumers, but undue restrictions on entry may impact on the development of competition and therefore the protection of future consumers.⁴¹ One way some countries have sought to address the risk that consumer protection regulations may deter entry is to apply different levels of consumer protections to different suppliers (asymmetric regulation). While this approach potentially encourages innovation and entry, it can also create an uneven playing field (suppliers who are providing similar services are subject to different regulatory obligations) which raises its own set of issues.

Impacts on demand side

While consumer protection regulation can help address the information asymmetry that can exist between consumers and suppliers, with a view to allowing consumers to make better and more informed choices, there is a potential 'moral hazard' associated with this approach.⁴² In short over-protected consumers may not invest effort to ensure that they acquire the skills to make effective decisions in the market.⁴³ Thus, for example, while regulated standard offers in competitive markets can protect consumers who feel ill equipped, or choose not, to make decisions in complex market settings, they can have the unintended consequence of reducing competition by blunting the incentives for consumers to seek out good deals.⁴⁴

A range of other consumer protection regulations can impact on consumer choice and soften competition, including restrictions on the ability of firms to contact consumers, restrictions on comparative advertising and bans on commission payments to intermediaries. While each may have valid justification along some dimension of potential consumer harm and disamenity, they can also have negative effects along another dimension by, for example, reducing the information available to consumers,⁴⁵ increasing consumer search costs,⁴⁶

³⁹ One way of conceptualizing regulations imposing minimum quality standards is that they are effectively a prohibition on the ability of customer's to purchase lower-cost, but lower quality, goods

⁴⁰ As Armstrong (2008:132) observes: *"Although its aims may be honorable, there is a long history of consumer protection being used as an excuse for industry protection, which is a form protection that consumers do not want"*.

⁴¹ Vickers (2003:6) and Armstrong (2008:135) both refer to an example of a consumer policy which requires that all airlines offer a full meal service on flights. Such a policy inadvertently bundles the flight and the full meal, limiting the choice of consumers who would prefer not to pay for a full meal. At the same time it can discourage entry by budget airlines who seek to offer an alternative service, and reflect that in the price.

⁴² See Armstrong (2008:139).

⁴³ Armstrong (2011:4).

⁴⁴ See Decker (2014:55, 138 and 252) for a discussion of this point. Yarrow, Decker and Keyworth (2008) present evidence from some electricity markets of where this has occurred. Armstrong, Vickers and Zhou (2009) present a formal model of this phenomena, and conclude that although the imposition of price caps can have the direct effect of reducing prices, it can have the indirect effect of reducing search which, in turn reduce each firm's demand elasticity by such a degree that average prices increase.

⁴⁵ Examples are restrictions on the ability of firms to contact consumers (such as cold calling), which can result in a smaller proportion of consumers being informed about offers in a market thus softening competition in the

crowding out market solutions to particular problems,⁴⁷ and preventing price discrimination by firms where this may be pro-competitive.

Policies directed at protecting certain groups of consumers (such as vulnerable consumers) may also have the unintended consequence of undermining the rewards that other consumers obtain from being active in the market and expending the time and effort to gather and process information about alternative offers.⁴⁸ Such policies can also potentially have adverse impacts on all consumers.⁴⁹ Similarly, policies which ban, or mandate specific terms be included in contracts (on the basis of concerns about careless or vulnerable consumers) can limit the ability of sophisticated consumers to bargain and conclude contracts on the specific terms that they want. Put differently, contractual terms and conditions cannot reflect the different risk appetites of different consumers. Finally, research in behavioural economics implies that policies premised on supplying additional information to consumers to allow them to make better and more fully informed decisions can, paradoxically, result in the opposite effect as a result of 'information overload'. In this respect, the provision of *more* information is differentiated from the provision of *better* information, which aids in processing.

The general point is that policies which impact on consumer behaviour and choice necessarily impact on competition, and policies which change the behaviour of suppliers necessarily affect consumer choice and behaviour and, accordingly, the appropriate balance between demand side (consumer) policy and supply side (competition) policy can be a fine one.

2.4.2 Consumer protection regulation and the wider regulatory and policy framework

In addition to striking a balance between appropriate levels of consumer protection and competition, consideration needs to be given to how the wider economic regulatory framework impacts on the behaviour of different suppliers and, in turn, the customers of those suppliers. Specifically, aspects of the regulatory and policy framework, such as allowed pricing structures, or the ability to impose surcharges, can impact on consumers across a number of dimensions, including in relation to questions of distribution (for example, whether some consumers are cross-subsiding other consumers), affordability, and, because

market. Similarly, restrictions on comparative advertising can limit the ability of suppliers to point out the superior attributes of their products and services relative to rivals.

⁴⁶ For example, the benefit of restricting commission payments to intermediaries depends on how the reduction in average prices from taking away such payments compares to any increase in consumer search costs associated with the removal of brokers.

⁴⁷ For example, firms may have incentives to introduce measures that address the cognitive limitations, or relative inattention, of consumers. An oft-cited illustration is that firms may have incentives to overcome the consumer confusion about product offerings (sometimes referred to colloquially as 'confusopoly') by offering a simple product and pricing proposition.

⁴⁸ As Armstrong (2008:134) puts it in relation to policies which restrict choice in the market on this basis: "*Such policies are usually highly re-distributive between consumer groups, and often have the flavour of putting fences alongside cliff-top paths: they protect careless or vulnerable walkers from falling off, but they reduce the utility of everyone else*".

⁴⁹ An oft cited example was the introduction by the British energy regulator (Ofgem) of non-discrimination clauses in suppliers licences, which limited the ability of companies to offer discounts in different parts of the country. This policy was premised, in part, on concerns about vulnerable consumers being less active and having lower levels of switching. Assessments of this policy have suggested that all consumers, including vulnerable consumers, faced higher prices after the policy was introduced. See Waddams-Price and Zhu (2013:16) and CMA (2015b: 32).

these aspects impact on the long-term viability of network operators, on consumers long-term interests in energy security. These issues are discussed in sections 3 and 4, and, as will be demonstrated, are relevant to questions of consumer protection in a broader sense than is typically dealt with in specific consumer protection policies.

A particular issue arising in electricity markets in some jurisdictions and in some markets in other regulated sectors relates to the impact on traditional default suppliers of sustained under-recovery of revenues in the face of new products and services, a situation that is sometimes described as a 'death spiral'.⁵⁰ Such a situation can have uneven distributional impacts on consumers insofar as not all consumers are as able, or willing, to use alternative supply sources or to curtail demand in response to any increase in prices. Indeed it is sometimes argued that vulnerable or poorer customers may be less able to adjust their behaviour in response to the increase in prices of traditional suppliers, and are therefore left carrying the burden of the decreasing demand. As discussed in section 3, claims that the under-recovery of revenues for traditional electric utilities may be having uneven distributional effects (by shifting costs on to certain groups of consumers) are currently being made in the US and some parts of Europe. Specifically, it is claimed that those customer groups who have more limited opportunities to install renewable generation facilities, or to assess demand efficiency options, such as vulnerable customers or the urban poor, are effectively subsidising wealthier, middle class customers who can better assess their demand needs, and take actions such as installing solar PV power facilities. In effect, this raises the wider question of whose consumer interest is being protected under the regulatory framework.

2.5 Summary

This section outlined some of the general economic rationales for consumer protection regulation in competitive markets, and in retail electricity markets in particular. In summary:

- For most products and services, robust competition is the best form of consumer protection, and only minimal consumer protection regulations are required. However, in some competitive market contexts, such as where there are weak reputational incentives, or pronounced information asymmetries between suppliers and consumers, competition alone may not adequately protect consumers. Consumer protection regulations are sometimes also justified in some settings: on the basis of a perceived need to deal with 'irrational' consumer decision-making; to protect certain types of consumers; because the services supplied are considered essential; or because of the timing and magnitude of any potential consumer harm associated with poor service quality.
- The specifics of consumer protection regulations vary across jurisdictions and sectors. However, among the aims of most consumer protection regulations are to:

⁵⁰ In short, the default supplier under-recovers revenues as a result of reduced demand, and therefore increases its prices in order to cover its typically large fixed costs. The increase in prices is, however, applied across an ever-decreasing demand base, which creates even greater incentives for customers to curtail demand or to self-supply services (where this is possible), leading to a 'spiral'.

improve the information available to consumers; ensure that contractual terms are transparent and fair and that certain information is disclosed; maintain certain quality standards; and regulate who can supply a service, through authorisation and licensing requirements. In markets newly opened to competition, such as retail energy markets in Australia and elsewhere, additional consumer protection regulations have frequently been seen as necessary to: inform consumers of the risks and their rights in the new unfamiliar context; address the new incentives of suppliers in the changed context, including the potential for non-scrupulous business and marketing practices; and address any differential impacts on different categories of consumers that can be created by the opening of a market to competition. In addition, certain consumer-related regulations may be introduced to help achieve the policy objective of promoting competition in these markets.

- Consumer protection regulations are not costless. They can have important impacts on supplier (supply side) and consumer (demand side) behaviour, which, in turn, can affect the intensity of competition and the incentives for innovation. In addition to striking a balance between appropriate levels of consumer protection and competition, consideration needs to be given to how the wider economic regulatory framework impacts on the behaviour of different suppliers and, in turn, the customers of those suppliers (i.e.: the potential distributional effects of consumer protection regulations is often a relevant consideration).

3. Review of approaches to new products and services in other jurisdictions

This section surveys how regulators in other jurisdictions have responded to the introduction of new products and services in electricity markets. It looks, in particular, at the US, Germany, the UK, and the Netherlands, as well as responses at the European Union (EU) level. The purpose of this section is to highlight key aspects of international experience which may assist in considering how the Australian consumer protection framework might adapt to new products and services.

As we will discuss, the nature of the issues arising in electricity markets across the selected countries can differ, which reflects, in part, their different supply structures, and the different policies pursued with respect to retail competition and the promotion of renewable energy. However, all of the jurisdictions examined are, to varying degrees, currently grappling with issues associated with the emergence and integration of new products and services, and the implications of this for the traditional electricity supply model. Accordingly, regulatory approaches are, in these countries, as in Australia, currently under review, and there is, in most cases, little settled policy or regulatory approach. Notwithstanding this, the purpose of this discussion is to describe some of the key issues that have arisen, and how policymakers and regulators are framing, and responding to, these issues.

3.1 United States

This discussion is organized into three sections. It begins with a brief overview of the regulatory context for electricity supply in the US. It then describes the different types of new services and business models that have emerged in the sector. Finally, it considers the particular regulatory issues that have arisen in relation to consumer protection in the US context.

3.1.1 Policy and regulatory context

The extent of retail competition in the US, and level of restructuring of retail electricity markets more generally, varies significantly by state. Full retail competition (i.e.: including residential and small commercial customers), has been introduced in only a relatively small number of states.⁵¹ In a number of states where retail competition has been introduced, a default service provider, offering a standard offer service, is maintained to service those customers who do not shift supplier. This default supplier is typically the distribution utility in an area.

The regulatory structure for electricity comprises a mix of federal, state and, to some degree, municipal bodies.⁵² The question of whether or not alternative business models such as

⁵¹ See http://www.eia.gov/electricity/policies/restructuring/restructure_elect.html.

⁵² In general terms, the responsibility for the regulation of *interstate* activities typically tends to rest with the Federal Energy Regulatory Commission (FERC) (such as the interstate transmission of electricity and the wholesale electricity market) while responsibility for the regulation of *intrastate* activities rests with the state

onsite distributed generation facilities, should be subject to regulation, and how they should be regulated, often falls to the state Public Utility Commissions (PUCs).⁵³ In assessing whether or not to regulate, state PUCs must consider factors such as the impact on the stability and security of the electricity grid, and consumer protection issues. As discussed below, the regulatory treatment of onsite generation facilities varies between states.

There are a number of federal and state programmes in the US to assist consumers with special needs or those on low income.⁵⁴ Accordingly, in part, the issue of energy poverty is dealt with through specific and targeted policy measures rather than through general adaptations to the regulatory system, or through universal social welfare measures (as in some EU countries – see discussion below). In addition, in some states companies are required to create educative outreach programmes to inform certain groups of customers about energy conservation measures.⁵⁵

3.1.2 *New products and services and business models*

Although the contribution to overall electricity supply remains relatively small,⁵⁶ there has been a significant increase in the installation and operation of non-traditional means of electricity generation and supply in some states. The renewable technologies used to generate power vary – and include solar power, wind, geothermal, biomass and hydropower – but there has been a massive growth in the adoption of solar PV technology at the residential level (i.e.: behind the meter).⁵⁷

A number of factors have been seen as contributing to this growth in onsite generation facilities, including: declining installation costs,⁵⁸ high electricity prices in some states, and technological developments.⁵⁹ A major catalyst for the growth in alternative supply technologies has also been the generous subsidies and credits introduced to promote a shift towards renewable energy at the federal, state and municipal level.⁶⁰ Many forecasts

Public Utility Commissions (PUCs), such as the regulation of the retail markets and intrastate electricity. In addition, some utilities that are municipally owned, or rural cooperatives, are regulated by the municipal authorities, and operate under a different regulatory framework to other utilities. In relation to consumer protection issues, other bodies that can become involved include the Federal Trade Commission and the Federal Consumer Financial Protection Bureau, as well as state based bodies such as Attorney General Departments.

⁵³ Although this issue can be influenced by legislation.

⁵⁴ For example, in California, the California Alternate Rates for Energy (CARE) programme provides a 20% discount on monthly electric bills if your household income falls below a particular level. Customers who satisfy the CARE income thresholds are also eligible for the Energy Assistance Program which provides free weatherization services to consumers. The federal government also provides grants to provide weatherization services and to help qualifying customers pay their energy bills under a series of federal initiatives known collectively as the 'low income home energy assistance program'

⁵⁵ For example in California. See CPUC (2015d).

⁵⁶ According to some accounts solar represents about 1% of all generation.

⁵⁷ It is estimated that the residential distributed solar market grew by 50% annually in 2012, 2013 and 2014. See NC Clean Energy Technology Center and Meister Consultants Group (2015:3).

⁵⁸ In California, it is estimated that the average cost of installed residential systems decreased by 53% between 2008 and 2014 (from \$10.87 per watt to \$5.14 per watt). See CPUC (2015b)

⁵⁹ In some states, such as Texas, the focus has been less on solar power, more on wind power. This is being aided by the residential installation of pole-mountable wind turbines.

⁶⁰ These incentives include tax credits, cash rebates, renewable energy credits, property tax credits and other benefits such as net metering. An important incentive at the federal level has been the 30% Investment Tax Credit (ITC) which reduces the federal income tax liability based upon the amount of capital invested in the PV project for system owners. State and municipal governments have also offered grants, loans, rebates and sales tax exemptions to provide greater incentive to install solar based technologies.

suggest further significant and rapid growth of onsite generation technologies – particularly solar PV power – over the next decade, especially in sunny states such as California and Arizona. However, this forecasted growth is dependant to some degree on the continuation of various government subsidies and rebates.⁶¹

Almost two-thirds of installed residential solar power is under a third-party ownership model, such as a solar lease, or a third-party Power Purchase Agreement (PPA). Under this financing method, a customer hosts the solar panels on their premises while a third-party developer/operator installs, owns and operates the system on the customer's site. All of the electricity generated on-site is then sold back to the customer, sometimes via a long-term PPA. This financing model is attractive to customers as it avoids the high installation cost and on-going maintenance costs of solar panels, and addresses the issue that many customers lack knowledge about matters such as maintenance of the facility and interconnection with the electricity grid. The predictability of the price under these arrangements is also argued to be attractive to some customers, particularly large consumers of electricity, while the model can be attractive to developers who are often eligible to receive various subsidies and tax benefits associated with the installation of solar power and the generation of renewable energy (such as RECs).

The deal struck between the third-party operators and the customer – including the price paid for electricity – is negotiated, and accordingly the terms will vary depending on the extent to which the customer wants to contribute to the up-front installation costs and the length of the contract. In some cases a long-term contract is negotiated which sets a fixed, predetermined price for a period of up to 25 years (although the price typically increases annually by a nominal amount). A critical point is that, while the price offered by developers at the time of installation is often at or below the existing retail price paid by the customer, the extent of any savings over the longer term depends on the extent to which retail utility prices increase or decrease in the future.

3.1.3 Regulatory policy issues

While the main policy focus to date in relation to electricity markets in many US states has been on the regulatory treatment of the growing number of customer generation technologies 'behind the meter' – particularly solar power – and the financing models that have been adopted, it is recognized that other issues could be significant in the future, particularly if there is widespread adoption of storage technologies.⁶² In this section, we briefly consider four regulatory-related issues that have arisen across different states. These are: consumer protection issues around the installation by third-parties of onsite generation facilities; whether certain operators of onsite generation facilities should be classified as utilities (or competitive service suppliers) and subject to the respective regulatory regime; consumer protection issues associated with net metering policies; and the distributional effects of changes in the electricity supply market.

⁶¹ As some commentators note, once the ITC rebate is withdrawn in December 2016, this will reduce the incentives of residential consumers to install solar PV generation facilities. See NC Clean Energy Technology Center and Meister Consultants Group (2015:3).

⁶² See Borenstein and Bushnell (2015: 20) for wider consideration of these issues.

Third-party financing of onsite generation facilities and consumer protection

Some state PUCs have been facing the question of whether, and how, to regulate onsite generation facilities. In particular, this question has arisen in relation to financing arrangements such as third party PPAs where, as described, a third party installs and owns the onsite generation facility (i.e.: the solar panels on a host customers house) and sells the electricity back to the customer at a fixed price under a long-term supply arrangement. Specifically, there has been a question about whether PUC's might need to provide protections to customers in relation to such arrangements similar to those provided to customers of competitive suppliers in states with deregulated electricity markets. In addition, some state PUCs are considering the need to regulate to protect the security of the electric system in these circumstances and have questioned whether the consumer protections should differ for a third party who owns a system and sells the power to a retail customer in the service territory of a regulated utility, and for more traditional competitive suppliers in competitive markets.

Although customers signing up to third party PPAs are protected by general consumer protection laws – typically enforced by the state Attorney General's department – there is a question about whether state PUCs should also have some oversight over these operators. Third-party PPA operators argue that, as they operate in a competitive market, and have an incentive to maintain quality to retain customers, such oversight is unnecessary and that detailed contractual terms can assure customers of the rights and responsibilities under these supply arrangements.⁶³ However, some PUCs are concerned by the fact that the installation of onsite generation facilities represents a significant financial commitment for most small customers, extending in some scenarios over the long-term (up to 20 to 25 years). In this respect, customers are faced with the need to consider and assess a large number of issues including aspects of performance of solar PV facilities,⁶⁴ the relationship between system size and costs,⁶⁵ financing methods,⁶⁶ and issues associated with sale of the property where the system is installed.⁶⁷

The response to these consumer protections concerns has varied across states. Some states have sought to address these issues through educative and voluntary measures rather than mandatory regulation. A number of state PUCs (as well as the US Department of Energy) have produced consumer guides and calculators to allow customers to assess the implications of the decision to install onsite generation facilities. Among other things, these guides typically stress the importance of obtaining alternative quotes for installation, and considering what size solar PV installation are actually required. Some utility companies have also published materials to assist customers in making decisions about solar PV systems.

⁶³ See discussion at in Kollins, Speer and Cory (2010:6).

⁶⁴ The performance of solar PV facilities can be influenced by various factors such as the location of the facility (whether it faces the sun, or can be located on the south side of the roof) and the condition of the roof.

⁶⁵ The size of the system installed can be an important determinant of costs. Generally speaking the larger the installation of a system the higher the installation cost, but the lower per watt cost.

⁶⁶ This can include outright ownership, drawing down on a mortgage to fund the installation, leasing, or leasing with a PPA. Each of these financing methods all involve different combinations of up-front payments and on-going payment, including in some cases a price escalator.

⁶⁷ In some cases if a system is leased then the payments may be considered by a liability and result in a lien being placed on the home.

However, in some states, a different approach has been taken. In California, while third party solar PPA developers are exempt from regulation as a utility (see discussion below) they are subject to regulatory oversight in order to protect consumers. Specifically, developers are required to disclose specific information to customers, such as: estimates of kilowatt hours to be delivered; how the pricing is calculated over the life of the contract; an estimate of the price per kilowatthour; as well as an explanation of the operation and maintenance responsibilities of each party, the disposition of the generation system when the contract ends, and what happens to the contract in the event that the ownership of the residence transfers. In addition, third-party developers must register with the California PUC.

Notwithstanding these initiatives, there have been concerns in some states about inadequate levels of consumer protection and misleading sales practices, with particular issues noted in relation to warranty terms, maintenance complications and property transference issues.⁶⁸ Other issues identified have been inflated prices for panels and installations (to receive larger tax credits for investors); billing problems; problems with the lack of redress mechanisms for complaints; general customer confusion as to how their bills are being calculated;⁶⁹ inflated performance and savings claims; and the use of 'teaser rates'.⁷⁰ These issues have not only arisen in relation to household customers but have affected some community installations as well.⁷¹ In one state, a class action has been filed against instances of such practices.⁷²

More generally, questions have been raised about customer understanding of the terms of the leases or third-party PPA arrangements they enter, and their consequences. In particular, whether customers understand: that they are giving away their rights to tax credits and incentives; that they may be liable for any consequential costs, such as increases in property taxes; that they need to obtain planning or ordinance approvals; and what happens if a system is damaged or stolen. The unregulated rates agreed under PPAs have also raised concerns.⁷³ In short, questions have arisen as to whether the area is one which can be safely determined by contractual negotiation between the parties (where such negotiations and outcomes are subject to general consumer laws but no industry-specific consumer protections).

In Arizona, consumer issues around solar leasing companies have led to regulatory action. After the Attorney-General issued a consumer warning about the solar industry in 2014, and

⁶⁸ See Citizens Alliance for Responsible Energy (2015).

⁶⁹ Generally, see Scientific American (2014).

⁷⁰ See Congress of the United States (2014).

⁷¹ For example, a solar developer in Massachusetts was fined for failing to honour agreements to sell net metering credits to towns and non-profits.

⁷² In Louisiana a class action lawsuit was filed in July 2014 on the basis of allegations that a company had deceived some 2500 customers by, among other things, false advertising, intentionally overstating energy cost savings, failure to take account of the suitability of a customers premises, and failing to install in a timely manner, that the price paid at the end of the lease is much higher than market value, and that the contracts signed do not comply with the disclosure requirements under the consumer leasing act regulations. See Class Action Complaint United States District Court, Eastern District of Louisiana (2014).

⁷³ For example, it is claimed that some customers are signing up to price escalator that entails a large annual increase in prices (of up to 4%). Additionally, in some states are the charges levied if customers fail to make, or are late, with payments have been considered to be unreasonably high (in Hawaii one operator apparently charged up to \$7 per watt for the system for missing a payment).

the state PUC launched an investigation into the business practices of the rooftop solar industry,⁷⁴ a Bill was introduced into the Arizona Senate in early 2015 proposing various measures relating to the presentation of, and information required to be disclosed in, agreements for the financing, sale or lease of a onsite generation systems, including: how comparative estimates of savings have been calculated, and the total costs over the life of the distributed generation system.⁷⁵ It also proposed that an explicit disclosure statement be included in the agreements which states that utility rates are subject to change, and therefore the projected savings from distributed generation are also subject to change.

At the federal level, some members of the US Congress raised concerns in late 2014 that leasing companies were using misleading sales techniques, that consumers were not made fully aware of the long-term implications of the transactions and that some companies had been using deceptive marketing techniques.⁷⁶ The core concerns were that *“solar leasing companies may be overstating the economic benefits of signing a long-term solar lease while failing to disclose important information during the sales process.”* Representations have also been made to the Federal Trade Commission on these issues.⁷⁷

Should some onsite generation owners/operators be classified as utilities?

An issue that has been considered in some US states is whether, in some circumstances, onsite generation operators and owners could be classified as a ‘utility’ and therefore subject to the same regulatory conditions as traditional electricity suppliers. This question has particularly arisen in the context of the third-party PPA financing arrangement, which, as noted, is a popular method for financing residential solar investments in the United States.⁷⁸

In essence, it has been argued that, because third-party owners sell electricity to customers (who host the PV facility under the PPA arrangement), these third party owners can potentially be deemed to be a seller of electricity in state legislation or for the purposes of PUC regulations, and regulated as a utility on this basis.⁷⁹ Such an outcome is seen to produce significant disincentives for developers and operators of third-party PPA facilities, as it increases administrative and compliance costs. This issue has been a live one in states such as California, Colorado, Florida, and Arizona, where the definition of a utility revolves around being a seller of electricity, and has required those states to consider various judicial and regulatory solutions to the problem.⁸⁰ A related issue has been the potential in some states, where some degree of retail competition has been introduced, for third-party PPAs to

⁷⁴ See Arizona Corporation Commission (2014), and subsequent submissions filed at Arizona Corporation Commission (2015).

⁷⁵ See Arizona Senate (2015).

⁷⁶ Concerns were raised to the to the US Federal Consumer Financial Protection Bureau. See Congress of the United States (2014).

⁷⁷ In December 2014, a cross-party group of members of the US Congress from Texas and Arizona sent a letter to the Federal Trade Commission. Again, the principal concern was that third-party leasing companies may be using deceptive marketing strategies to overstate the savings that will be received, while understating the risks associated with signing up to an agreement which can span a couple of decades. See, Congress of the United States House of Representatives (2014).

⁷⁸ Kollins, Speer and Cory (2010) identify and examine in detail some of the legislative and regulatory challenges with the third-party PPA financial model.

⁷⁹ The FERC has ruled that they do not have jurisdiction over behind-the-meter third-party PPA solar generating systems. See Federal Energy Regulatory Commission (2009).

⁸⁰ See Kollins, Speer and Cory (2010) and Farkas (2012).

be defined as a ‘competitive supplier’ on the basis that they provide electric services. Again, this has required judicial and regulatory clarification.⁸¹

The potential for third-party operators to be regulated as utilities is argued by some to act as a significant barrier to the further growth of the market.⁸² They contend that such regulations are only appropriate in contexts where the supply structure comprises integrated monopoly suppliers or competitive suppliers, and not to contexts where customers either own or lease power generation equipment, which is located behind the meter. Specifically, it is argued that there is not the same need for regulation of these facilities as for traditional utilities, where the rationales for regulation are based on consumer protection and grid reliability.⁸³ In this respect, courts required to interpret statutes which trigger public utility regulation in the context of third-party PPA’s, have sometimes focussed on the issue of whether the nature of the third-party PPA arrangement is such that its effect on the public interest involves the same considerations which underlie the state regulation of utilities.⁸⁴

In addition, it has been argued that regulating third party PPA operators as utilities would result in asymmetric treatment between PPAs and alternative financing mechanisms for solar power.⁸⁵ In some cases, such as in Florida, it has been argued that the financing methods are different insofar as they involve different allocations of risk. However, others have disputed this, arguing that the *“allocation of operating risk is better viewed as a contractual term, rather than the sine qua non for regulation as a utility.”*⁸⁶ Finally, the necessity for utility-type regulation of PPA operators has been disputed by some on the basis that, issues that are acutely relevant to traditional utilities – such as the essential nature of the service, service reliability and security of supply – are less relevant to PPA arrangements because the customer can remain connected to the utility and the grid.

Consumer Protection issues associated with net metering policies

A principal attraction of new products and services such as solar PV facilities is that they can allow consumers, or third-party operators, to sell any excess generation to the utility operator

⁸¹ This issue arose in Oregon where it was determined that third party PPAs are not competitive suppliers because they do not supply ancillary services. See Kollins, Speer and Cory (2010:vi).

⁸² Farkas (2012:93) notes: *“many states’ renewable energy policies are schizophrenic—states seek to increase distributed PV capacity through economic incentives and renewable generation goals, yet many have failed to amend their regulatory structures to promote increased PV development by explicitly exempting third-party developers from burdensome regulation.”*

⁸³ See Farkas (2012).

⁸⁴ Farkas (2012: 107) refers to an Iowa Supreme Court decision, where it was concluded that utilities are clothed in the public interest because of the fact that they provide an *“indispensable service that must be provided indiscriminately to all customers”* and that: *“third-party PPA contractors, in contrast, do not provide an indispensable service, as the customer remains interconnected to and dependent upon the primary electric utility for basic electrical service. There is no risk of unequal bargaining power or exorbitant power rates because there is substantial competition among developers offering third-party PPAs. Similarly, customers retain the same protections they are afforded in any other market transaction—namely, the ability to contract and to negotiate terms to best meet their financial and energy needs. Customers could always resort to the myriad of consumer protection laws and common law causes of action to protect against guileful developers.”*

⁸⁵ That is, customers who own the PV facility, or have a solar lease, (without a PPA and where the leasing company is not selling power) would not subject to regulation as a utility.

⁸⁶ Farkas (2012:107).

through a process known as net metering.⁸⁷ In effect, customers can ‘bank’ in the grid any excess electricity that is produced from their solar facility in the form of a credit, which is then used to offset the purchases which they later make from the retail utility (using grid supplied power). Importantly, the value of the credit can, in some states, be valued at the retail rate (not the wholesale rate). Consequently, the attraction of net metering tends to be greater in states that have high retail prices.

Some state governments have argued that net metering can be beneficial to utilities by allowing onsite generation to offset demand at peak periods,⁸⁸ and forty-four states and the District of Columbia allow for net metering.⁸⁹ However, for a variety of reasons, the practice of net metering is contentious; and regulations in five states prohibit third party operators from net metering under a PPA arrangement,⁹⁰ while the legal status of such arrangements in a further 21 states is unclear. Such restrictions have been argued to reflect concerns that third-party operators will oversize the host facilities so as to act as a wholesaler of electricity (i.e.: to masquerade as a customer-generator; when they are really merchant generators).⁹¹ Others suggest, however, that if this was the concern, there would be more obvious ways to address it.⁹²

A more general concern with the practice of net metering is that it may lead to an over-compensation for onsite generation (when it is compensated at the retail price).⁹³ That is, because retail rates are not generally set to reflect long-run marginal cost, this can result in payments by utilities which are substantially in excess of the avoided costs of generation. As discussed below, this can result in significant bill savings to operators of onsite generation facilities who are eligible for net metering, but raises problems of revenue recovery for utilities, which, in turn, can impact on consumers who do not net-meter.⁹⁴

Distributional effects of changes in the electricity market

The preceding discussion raises an issue about which consumers benefit from policies and regulations designed to incentivise the installation of onsite generation. The distributional impacts of such policies and regulations are an increasingly contentious issue in some US states, with some analysis suggesting these impacts are uneven.⁹⁵

In the US, three particular questions are being debated in relation to the distribution of costs and benefits of retail distributed generation among consumers. These are:

⁸⁷ Simply put, net metering means that the electricity meter spins forward when electricity flows from the utility to the customer, and backwards when the distributed generation system produces electricity surplus to the customer's consumption.

⁸⁸ See Connecticut Clean Energy Fund (2005: 8).

⁸⁹ See NC Clean Energy Technology Center and Meister Consultants Group, (2015:6).

⁹⁰ These states are Florida, Georgia, Kentucky, Oklahoma and North Carolina.

⁹¹ See Pennsylvania Public Utility Commission (2012).

⁹² Such as the imposition of ‘caps’ on net metering (which restrict generation to a certain percentage of the site's total energy demand). Further to the extent to which such third-party arrangements make net sales to the utility, then such parties risk being classified as a wholesale seller of electricity and subject to federal regulation by the FERC. See Farkas (2012:110).

⁹³ See Borenstein and Bushnell (2015).

⁹⁴ For example, see discussion in Borenstein (2015).

⁹⁵ A report prepared for Louisiana Public Service Commission earlier in this year concluded that the direct benefits of solar NEM installations fall more heavily on high-income households, as solar NEM households tended to have a 35% higher than average median income. See Louisiana Public Service Commission (2015).

- Who should pay for the costs associated with intermittency?
- Whether onsite generation operators are contributing enough to the fixed costs of the utility network?
- What are the overall social benefits of onsite generation?

(i) *Who should pay for the system/operational costs associated with intermittency?*

Given the intermittency associated with most forms of distributed generation,⁹⁶ and the current state of storage technology,⁹⁷ there remains a need for back-up conventional generation and system operation. Moreover, the intermittency of distributed generation can give rise to both short and long term management and cost issues for a grid/system operator. In the short-term, system operation issues arise around balancing the system in the face of sudden fluctuations in supply. Over the longer-term, and, particularly as the amount of (intermittent) distributed generation capacity increases, changes need to be made to conventional generation facilities to accommodate this change in the generation profile - i.e. there will be a need for flexible conventional generation facilities which can ramped-up quickly (such as gas-fired generation).⁹⁸

The relevant question for current purposes is: who should pay for such short-term and long-term management measures? The incentives for conventional generators to invest can be limited where the wholesale market clearing price for electricity is determined by renewable energy, which is subsidised, and can involve the supply of electricity at very low or zero marginal cost.⁹⁹ Moreover, the costs associated with changing the profile of the network involves a form of insurance for distributed generation facilities; conventional power will always be available in the event that the sun doesn't shine or the wind doesn't blow. Accordingly it is argued that such facilities should contribute to these costs. This line of argument has been accepted in some countries, such as Kenya, where a distinction is made between 'firm' and 'non-firm' feed-in-tariffs for solar energy: the firm-FIT is higher on the basis that the solar energy provider assumes responsibility for providing back-up generation for the solar power, while the non-firm FIT is lower and recognizes that the system operator assumes the responsibility for providing back-up generation.¹⁰⁰

(ii) *Are onsite generators contributing enough to the fixed costs of the grid?*

The second debate in some US states is about revenue recovery – and whether onsite generation facilities are contributing a sufficient share to network costs.¹⁰¹ While this issue

⁹⁶ Significant fluctuation in generation from the sun can occur on a second-by-second basis, and from the wind on a minute-by-minute basis. See Borenstein and Bushnell (2015:21).

⁹⁷ If low cost storage facilities become available in the future, then the need for back-up peaking plants will be mitigated, as operators of onsite generation facilities can potentially be self-sufficient to a greater degree.

⁹⁸ Borenstein and Bushnell (2015) discuss this in the context of the 'duck curve' noting that: "*The most flexible conventional generation source is gas-fired peaker plants, but are least efficient and most expensive. The Duck Curve needs a generation mix which can ramp down when the sun rises and ramp up when the sun sets. According to some studies the most cost-effective solution would be to run gas-fired plants during the middle of the day, and curtail PV production.*"

⁹⁹ See Borenstein and Bushnell (2015).

¹⁰⁰ This example is from Berg and Kury (2012:3).

¹⁰¹ See NC Clean Energy Technology Center and Meister Consultants Group, (2015:3).

might not seem to be directly relevant to the more specific types of consumer protection regulation under consideration in this paper, the viability of utilities – particularly where these are going to supply back-up to intermittent power sources – is clearly an issue of fundamental consumer importance.

Some studies have indicated that onsite generation operators, such as solar power installations in states that apply net metering, do not contribute a sufficient share of revenues to cover utility costs, meaning they are cross-subsidised by other utility ratepayers.¹⁰² However, the issue is contentious, and other studies have concluded that net-metered customers produce net benefits to all customers, or that the value of solar electricity is equal to or greater than the retail rate.¹⁰³

To the extent to which there is sustained under-recovery of revenues by network utilities this ties into a much wider, and more controversial debate, about the future viability of grid-delivered electricity in a context of a growing share of retail distributed generation.¹⁰⁴ In the US, various possibilities have been proposed to forestall this situation arising, including: reducing the compensation rates for net metering to avoided costs,¹⁰⁵ or increasing the fixed cost charges levied on retail distributed generation (i.e.: a solar-PV rate) in order to recover a more significant share of fixed costs from customer-generators.¹⁰⁶ The introduction of such charges have proved contentious, and some studies have argued that while they can improve the short-term cost recovery of utilities they can be unduly discriminatory, misrepresent the potential benefits of customer-generation facilities, and do not take account of all of the factors that are contributing to lower revenue recovery by utilities.¹⁰⁷ A recent US Department of Energy study advocates for alternative approaches to allow for stable utility cost recovery based around revenue decoupling; a minimum monthly contribution/minimum bill for all customers; and rates that reflect the varying cost of electricity at different times of use.¹⁰⁸

¹⁰² A recent study for the Louisiana Public Service Commission, for example estimated that on average solar NEM installations only made a 64% contribution to utilities in that state. They conclude that because solar customers pay less than the full costs, the remaining costs – which they estimate to be in the vicinity of \$2 million per annum – are being cross-subsidised by other utility ratepayers. A 2013 study by the California Public Utilities Commission Energy Division found that high-income households tend to have a higher penetration of solar facilities, and that after NEM residential customer pay 88% of their full cost of service (compared to 154% before installing distributed generation). See Louisiana Public Service Commission (2015) and CPUC (2013a).

¹⁰³ See references to studies in Maine and Mississippi in NC Clean Energy Technology Center and Meister Consultants Group, (2015:4). See also US Department of Energy Sunshot Initiative (2014b).

¹⁰⁴ This can lead to the so-called 'death spiral' described in section 2 above. As Borenstein and Bushnell (2015) note: *'Ultimately, some argue, the monopoly utility disappears.'*

¹⁰⁵ In the first quarter of 2015, five states considered actions to reduce the rate paid for excess generation to avoided cost or near avoided cost. In Arizona, Hawaii and New Mexico these proposals have been made by investor-owned utilities. See NC Clean Energy Technology Center and Meister Consultants Group (2015: 8).

¹⁰⁶ In the first quarter of 2015 there were 24 proposed fixed charge increases pending or decided across different states. Of the 8 that were decided: three were approved at the requested level; one was approved at half the level; and three were rejected. The average increase for these eight states was 41% above the existing level of fixed charge (from \$11.96 per month to \$16.86 per month). See NC Clean Energy Technology Center and Meister Consultants Group (2015:21).

¹⁰⁷ See US Department of Energy Sunshot Initiative (2014b).

¹⁰⁸ See US Department of Energy Sunshot Initiative (2014a).

(iii) *The overall benefits of onsite generation*

A wider debate developing in some US states concerns whether the social costs associated with supporting the development of onsite generation – such as solar power – may be greater than the benefits.¹⁰⁹ This is particularly relevant because, as noted, there are currently substantial federal and state financial incentives to facilitate the development of such customer-generation facilities, and regulators in some states have committed to such developments.¹¹⁰ In a recent analysis, two leading US energy economists conclude that the political momentum to support renewable distributed generation (particularly solar, but also other intermittent sources of generation) is privately economic as it shifts rents, but costly from a societal point of view, and that to the extent to which it results in a revenue shortfall for the utility, shifts costs onto the utility's remaining rate payers.¹¹¹ This is clearly a wider discussion than relevant for the current purposes, but it highlights the increasing concern by some commentators that public and regulatory policies – including rate design – may be having significant distributional impacts, which, in the context of any broad sense of consumer protection, would be remiss to ignore.¹¹²

3.2 European Union

In Member States of the European Union (EU), such as Germany, the Netherlands and the UK, key elements of energy, competition and consumer policies are framed and conditioned by the various directives and obligations established at the EU level. Therefore before we can consider the approaches that have been adopted in Germany, the Netherlands and the UK, it is useful to briefly examine policy and regulatory developments in relation to new products and services at the EU level. This discussion is organized into two sections. Firstly, it briefly describes the policy and regulatory context. Secondly, it considers some of the policy issues associated with new products and services that are arising at the EU level.

3.2.1 *Policy and regulatory context*

Broadly, the regulatory architecture in relation to electricity markets in the EU is as follows. The European Commission formulates a general regulatory framework for EU member states (such as the Electricity Directives). Each Member State must then transpose the high-level principles of the Directives into national law, and a National Regulatory Authority (NRA) in each Member State is then responsible for applying and implementing the domestic legislation. It follows that NRA's across the various Member States are, within limits, able to adopt different regulatory approaches and methods even when they are regulating the same utility industries.

¹⁰⁹ A recent study for the Louisiana PSC concluded that the estimated costs of solar NEM installations outweighed benefits by \$89 million in NPV terms. See Louisiana Public Service Commission (2015:ii).

¹¹⁰ For example the California Public Utilities Commission has noted that their own orders have emphasized the state's commitment to DG development. See CPUC (2012:2).

¹¹¹ Borenstein and Bushnell (2015) conclude that: *"The social welfare gain from increasing reliance on distributed PV generation, however, is still far from clear."*

¹¹² A report by the Texas Comptroller of Public Accounts makes this point: *"When taxpayers are asked to foot the bill for energy policy choices, we need to be sure that they are the right choices. Adding generation is expensive no matter the source, but as policymakers and elected officials, we must ascertain if we have chosen correctly or if changes are both good and necessary."* See Texas Comptroller of Public Accounts (2015).

Full retail competition in energy, including for households, has been in place in all EU Member States since 2007, although the extent of actual retail competition varies significantly among countries and retail supply in electricity markets remains concentrated in many EU countries.¹¹³ In EU Member States, three electricity Directives has influenced the regulation of the industry.¹¹⁴ In combination, these Directives require Member States to take appropriate measures to protect consumers in electricity markets, and in particular, ensure that there are adequate measures in place to protect ‘vulnerable consumers’,¹¹⁵ and final consumers in remote areas. Various consumer protections have been incorporated into the Directives including: certain required contractual terms; rights of withdrawal on modification of these terms; transparent pricing information; non-discriminatory payment methods; costless changes in supplier; rights to consumption data and inexpensive complaints resolution mechanisms.¹¹⁶ These specific consumer protection measures for retail electricity consumers are in addition to general consumer protection rights contained within other pieces of EU legislation, the most important of which being the directive on unfair terms in consumer contracts, the consumer rights directive, unfair commercial practices directive, distance selling directive and door-to-door sales directive.¹¹⁷

In sum, the consumer protection frameworks for retail electricity markets in EU Member States – including Germany, the Netherlands and the UK discussed below – guarantee EU citizens various rights relating to: connections; choice of supplier; switching suppliers; contractual terms and conditions; accuracy of information; complaints and dispute resolution. In addition, the protection measures required can differ by consumer category, and specific protection measures need to be applied to vulnerable consumers (although Member States have discretion to define what is meant by a vulnerable consumer).

3.2.2 Regulatory policy issues

At the EU level a number of policy issues are currently being considered in relation to electricity markets that touch on matters associated with consumer protection and the development of new products, services, and alternative business models in electricity markets.

Energy ‘consumer rights’ and the ability to go ‘off-grid’

As noted, household consumers of electricity in EU member states have certain ‘rights’. Important among these are the rights to: be connected to a local electricity network and to be supplied with electricity of a specified quality; and to choose a supplier. Distribution companies must connect household customers to their network, and may appoint a supplier

¹¹³ The most recent Eurostat data from 2013 suggests there were six or fewer main electricity retailers in all but two countries (Austria (7) and Slovenia (8)), and the cumulative market share of the main retailers exceeded 70% in 22 countries. See Eurostat (2015b).

¹¹⁴ In 1996, 2003 and 2009.

¹¹⁵ Although Member States have discretion to apply this concept according to their own situation.

¹¹⁶ The Annex setting out these protections was included in the Second Directive, although it was expanded in the Third Directive.

¹¹⁷ Respectively: Directive 93/13/EEC of 5 April 1993; Directive 2011/83/EU of 25 October 2011; Directive 2009/29/EC; Directive 97/7/EC of 20 May 1997 and Directive 85/577/EEC of 20 December 1985.

of last resort to ensure provision of universal service.¹¹⁸ In addition to these rights, Member States may also impose ‘public service obligations’ on electricity undertakings. Among other things, these might relate to security of supply, the regularity, quality and price of supplies, or environmental protection.¹¹⁹

As discussed below, in the context of Germany and the Netherlands, these rights – which rest with the consumer – are seen as important protections against potential lock-in arrangements arising with certain new supply arrangements. In particular, the ability of consumers to choose an alternative supplier, and to obtain access to grid supplied electricity, are seen to protect consumers who are part of an ‘off-grid’ arrangement. As a consequence, the scope for operators or suppliers to go fully off-grid is arguably limited under the current regulatory framework, as suppliers/operators must always ensure that their customers can choose an alternative supplier or access the public distribution network.

Socialisation of balancing costs of small-scale renewable generation

The question of the distributional impacts of the socialisation of the balancing costs associated with small-scale renewable generation is also an active area of inquiry at the EU level. As discussed earlier, a characteristic of most onsite generation is intermittency, which can give rise to large fluctuations in balancing and system costs. In some EU Member States, such as Germany discussed below, renewable generation facilities have preferential or guaranteed access to the network, meaning that the system operators must take all generation when it is available and must call on other sources of generation when it is not (including at short-notice). This gives rise to increased balancing costs, which are socialised and paid for by all electricity consumers, and there are some questions as to whether onsite generation facilities should carry more of the financial responsibility for the intermittency associated with their supply profile.

Flexibility and the role of demand reduction aggregators

In response to the continuing growth of renewable-based generation there is also policy discussion in Europe on how best to ensure a more flexible and responsive supply-side and demand side. A particular area of focus across Europe is on measures to encourage greater demand side responsiveness, or flexibility. Flexibility can take various forms ranging from demand side responses to time-based tariffs, to more active measures where consumers respond to signals and are rewarded for doing so. Such flexibility is seen to offer various advantages in terms of encouraging greater energy efficiency, reducing congestion costs and responding to peak demand. In some EU member states, such as France and the UK, some new business models are emerging to assist in developing demand-side flexibility

¹¹⁸ The functions of the supplier of last resort are not specified but are suggested to include: (a) supporting customers in case of payment difficulties, if they cannot find a supplier, or if they are dropped by their current supplier; (b) ensuring smooth supply in the event of failure of a retail supplier; and (c) supporting inactive consumers (such as when a fixed term contract expires, or a final household customer does not choose a supplier at market opening or when moving home).

¹¹⁹ Such public service obligations are required to be ‘clearly defined, transparent, non-discriminatory and verifiable’ and are intended to guarantee equality of access to all consumers. A question that has arisen in this respect is whether there is a tension between the principles of competition, and the potential imposition of public service obligations in relation to price. Court decisions have determined that, in certain circumstances, such requirements may be imposed in order to reconcile the objectives of liberalisation and consumer protection.

measures, including so-called ‘demand reduction aggregators’ (or Curtailment Service Providers in US terminology) who contract with consumers to allow them to participate in demand response programmes (at the moment they are not targeted at household consumers). The key function of such aggregators is to combine multiple small consumers into a single response unit which is of sufficient size to be a viable option for system management purposes (and therefore respond to the problem that a single consumer rarely is of sufficient size to participate in demand response programmes). The Agency for the Cooperation of European Energy Regulators (ACER) has recently committed to reviewing the potential impact on consumer protection of the development of new services – such as demand side responsiveness – and of making proposals to the European Commission for the introduction of appropriate consumer protection measures where necessary.¹²⁰

Implications of different concepts of ‘vulnerable’ consumers’ for the scope of consumer protection regulations

Another issue at the EU level is the impact of the different meanings given to the notion of vulnerable consumers in different Member States. As noted, the EU framework requires specific consumer protection measures for ‘vulnerable’ consumers, however, the concept of ‘vulnerable’ is left undefined and within the discretion of EU Member States. In countries such as Germany and the Netherlands, and other northern European countries, the concept of vulnerability is defined having regard to existing universal social policies that guarantee certain rights to citizens who are experiencing financial hardship (including rights to electricity). In other jurisdictions, notably the UK, the notion of vulnerability has been interpreted broadly to cover not only financial hardship, but also to situations where a consumer is significantly less able than the typical consumer to represent their interests in the energy market. This raises a debate about the extent to which inactive or uninformed consumers should also be considered to be a form of ‘vulnerable’ consumer, and whether policy measures should be introduced to address such inactivity and ‘engage’ consumers, or whether the scope of policy should be more appropriately focussed on financial hardship coupled with measures to ensure that consumers are aware of their rights and empowered to act. The relevance of the scope of policies towards vulnerable consumers is that it is sometimes cited as a potential barrier to entry for some emerging business models.

There is also discussion at the EU level as to whether the continued regulation of household retail prices in some Member States is necessary to protect vulnerable consumers, and indeed, whether it may distort the functioning of the market. A 2014 report of the European Commission concluded that the universal retail price regulation applied in some Member States tended to be detrimental to retail competition insofar as it discouraged competitors from market entry and investment and recommended that “*Member states should explore other policy measures to address concerns about vulnerable households*”.¹²¹ More generally,

¹²⁰ See ACER (2014: 20).

¹²¹ European Commission (2014:7-8). The Agency for the Cooperation of European Energy Regulators (ACER) also shares this view, and has committed to issuing guidance which can assist Member States in phasing out regulated end-user prices in ways that ensure that consumers are protected where competition is not yet effective. See ACER (2014: 18).

it has been argued that the existing rules have not had the anticipated impact in terms of empowering consumers of electricity to participate effectively in electricity markets.¹²²

Smart metering and data protection

Finally, an emerging regulatory issue at the EU level in relation to electricity markets relates to customer data management, particularly meter data, and in particular, concerns by some customers about who has access to their data and for what purpose. There is a recognised tension here – while consumers, and consumer-generators, can have legitimate concerns about data protection, the availability of data can be critical to the operation of effective markets, and limiting access to consumer data can act as a potential barrier to effective competition. In March 2015, the CEER concluded that how data is managed and shared raises both risks and opportunities for consumers. On the one hand, more efficient provision of reliable and detailed data can assist in billing and the switching process. However, the availability of such data can also increase complexity for some consumers, while vulnerable consumers are less likely to benefit from the developments associated with available customer meter data, and smart metering may actually increase the risk of potential remote disconnections. At this stage, the CEER has responded to these perceived risks and opportunities by setting out five guiding principles for data management – privacy and security, transparency, accuracy, accessibility and non-discrimination – and proposes to undertake further work in this area.¹²³

3.3 Germany

The discussion in this section is organized into three sections. It begins with a brief overview of the policy and regulatory context for electricity supply in Germany, it then discusses the different types of new services and business models that have emerged, before considering particular regulatory-related issues that have arisen.

3.3.1 Policy and regulatory context

There are around 900 distribution network operators in Germany, each of who is required to elect a default supplier for electricity for a three-year period. The default supplier for an area is then required to be the supplier of last resort (SoLR) for that area. In exchange for performing the SoLR function the supplier is allowed to charge a higher price. Germany introduced retail competition for all customers, with households able to choose from a large number of suppliers,¹²⁴ although most have contracts with their default supplier (although the majority of customers are on a non-default contract).¹²⁵ There is no single dominant retail

¹²² The European Consumer Organisation has argued that the existing Directives have not had the desired impact in terms of empowering consumers of electricity. Suggestions include, among other things, further changes to presentation and transparency of contractual conditions, measures to address aggressive and misleading sales practices and various measures to add comparability and assist switching. See Bureau Européen Des Unions Des Consommateurs (2013).

¹²³ See CEER (2015).

¹²⁴ In 2013 it was estimated that there was an average of 97 suppliers in each network area, with households able to choose from an average of 80 suppliers. See Bundesnetzagentur and Bundeskartellamt (2014:8).

¹²⁵ It is estimated that some 34% of household customers remain on a standard contract with their default supplier, 21% are served by a company other than the default supplier and a relative majority (45%) have a special contract with the default supplier. See Bundesnetzagentur and Bundeskartellamt (2014:9).

supplier, and recent estimates suggest that the aggregate share of the largest 4 suppliers was 34% in 2014.¹²⁶

The Bundesnetzagentur (Federal Network Agency) is responsible for the regulation of the electricity networks and for consumer matters involving large supply companies and those whose operations cross state borders. For smaller energy supply companies,¹²⁷ consumer agencies in each Länder are responsible for consumer protection. Specific consumer protection measures are contained in relevant energy legislation and, consistent with EU Directives, include requirements for invoices for electricity supply to be simple and understandable and to contain certain prescribed content.¹²⁸ In addition, all energy supply contracts must satisfy the basic civil law which contains numerous protections relating to consumer protection.

Since July 2007 any party who wishes to supply household customers has to register to show that they have the technical, operational and financial capacity to do so. These registration requirements refer to registration for each 'customer installation' meaning that if you are supplying within a customer installation – such as, for example, an apartment within a building – there is no need to register. Similarly, consumer-generators who consume energy onsite are not required to register.

Since the early 2000s, Germany has pursued a policy of shifting electricity production and consumption towards a low-carbon system based around renewable sources. Since the launch of the *Energiewende* (energy transition or energy revolution) in 2010, such policy efforts have intensified,¹²⁹ and Germany has set itself ambitious targets for renewables' share of power consumption of 55-60% by 2035 and 80% by 2050.¹³⁰ In the last five years in particular, the total installed capacity of solar PV power has risen rapidly as has the contribution of such PV solar power to net electricity consumption.¹³¹ An important policy driver has been the Renewable Energy Sources Act (EEG) which introduced a series of feed-in-tariffs (FITs) for renewable energy.¹³² However, support for renewables under the EEG will peak at a particular level of capacity and will be withdrawn after that.¹³³ Recent

¹²⁶ See Bundesnetzagentur and Bundeskartellamt (2014:9).

¹²⁷ Those with less than 100,000 customers.

¹²⁸ Such as: the duration of the contract, consumption in the period and in the same period in the previous year, a graphical representation for household customers of their consumption, a reference to a comparison group of customers, and information on dispute resolution procedures. Suppliers are also required to offer final customers bills on a monthly, quarterly or semi-annual basis, and have only 12 months to settle accounts. There are also various labelling requirements (in terms of environmental impact and contribution of each energy source).

¹²⁹ This policy was given greater emphasis following the decision of the German government to shutdown of all of Germany's nuclear power stations by 2022, and more recently, as a result of political problems in the Ukraine on which Germany relies for gas supplies from Russia.

¹³⁰ Estimates by the German TSOs indicate that by 2035, the capacity share of wind and solar power will be 161.4 GW, while the share of conventional generation will be 83.3 GW (this compares to a 2013 share of wind and solar power of 68.8 GW and conventional generation of 101.2 GW).

¹³¹ In 2014 it was 38.2 GW, up from 10.5 GW in 2009. In 2012-13 alone there was an increase in installation of solar power capacity of 3.3 GW. See Bundesministerium für Wirtschaft und Energie (2015).

¹³² At the end of 2013 it was estimated that some 78.4GW of installed capacity was eligible for payments under the EEG. See Bundesnetzagentur and Bundeskartellamt (2014:5).

¹³³ The EEG has set an upper limit on the amount of overall installed PV solar capacity of 52 GW (about 7% of German wholesale generation), after which the support for renewables in excess of market revenues will end.

amendments to the law will also change the way renewable energy will be supported and marketed in the future.¹³⁴

In Germany, as in many Nordic and Northern European countries (including the Netherlands), there is a universal social law that covers issues associated with citizen hardship. As such, issues associated with fuel poverty, and other aspects of hardship, are addressed through this general policy, rather than through a series of specific protections contained in the energy regulatory framework. In simple terms, socially vulnerable consumers get a social benefit in the form of a universal payment which is calculated to cover basic expenses such as rent, electricity and heating.

3.3.2 *New products and services*

Perhaps more than any other country, the German government has promoted a localised, distributed system of renewable generation where households and collectives install such facilities. As a consequence of these policies, as of 2014, it was estimated that there were around 1.4 million PV systems installed around the country, the majority of which were owned and operated by private households and farmers (i.e.: the financing models seen in the US are not a major feature in Germany).¹³⁵ Around ninety-eight percent of this capacity is estimated to be connected to the low-voltage distribution network.

This rapid growth in the installation of solar power has been driven by reductions in investment costs (the largest outlay for PV operators, which have fallen by around 13% since 2006) and the use of FITs which are intended to support the installation costs, and provide a fixed return on investments. FITs are long-term contracts which specify a fixed tariff for a period of 20 years irrespective of the start-up date. In simple terms, the grid operators are legally required to purchase all the power produced from renewable energy facilities at the FIT rate, which they then sell into the wholesale market. The TSOs then recover any shortfall between the FIT price and the wholesale price through a compulsory EEG-surcharge (EEG-Umlage) which is applied to the bills of consumers (although some industrial consumers are exempt – see discussion below).¹³⁶ It is therefore often stressed that incentives for investment in renewable energy are not funded through public funds, but rather via electricity consumers.¹³⁷

The level of FIT is stipulated in the EEG, and can vary by size and type of plant, and in the case of solar PV whether it is groundmounted or a rooftop facility.¹³⁸ The FIT payments are gradually due to expire from around 2020 as a result of the 20-year period coming to an end for the first installations, and once they expire they will be replaced by a system of market

¹³⁴ The EEG has been amended on a number of occasions. As discussed below, the most recent amendment in 2014, reduced the level of feed-in-tariff for new installations, extended a surcharge to self-consumption, and made important changes to how renewable energy will be supported and marketed in the future.

¹³⁵ See Fraunhofer ISE (2015: 5; 33).

¹³⁶ The EEG-Surcharge is calculated by the Transmission System Operators each year on 15 October, and the calculation is subject to review by the Bundesnetzagentur.

¹³⁷ This distinction is important in the context of the European State Aid rules.

¹³⁸ In March 2015, renewable plants which have entered operation will receive an amount ranging between 8.65 and 12.50 € cents/kWh for at least 90% of their electricity for the next 20 years. However, the *average* FIT paid can be substantially higher than this and it is estimated that the average FIT for PV solar power in 2013 was 32 euro cents/kWh (which incorporates the higher remuneration rates for older facilities). See Fraunhofer ISE (2015:11)

pricing for renewable energy. FITs are sometimes described as a form of power purchase agreement, which guarantees a fixed level of compensation for 20 years, at a rate that allows the investor a guaranteed return on investment. However, while both net metering (in the US sense) and feed-in-tariffs are similar, in that they allow consumers to generate power onsite and sell any excess to a utility, they differ in relation to the compensation paid for excess power and the metering arrangements required. Specifically, under a FIT arrangement any excess electricity generated by a customer renewable generator is sold on to the grid operators at a standard (government/regulator determined) fixed FIT price for that particular renewable facility (i.e.: a standard PV solar price) which is set under a twenty-year long-term agreement.¹³⁹

There are expectations that storage will play an increasingly important role in the German energy market, and that battery will become the norm for new installations of PV solar power.¹⁴⁰ Some commentators have argued the German market is leaving the first market introduction phase, and entering a new market penetration phase of renewables deployment.¹⁴¹ This second stage is said to involve a shift from policies which support installations of renewable energy, to policies which develop complementary technologies (such as storage) and foster market mechanisms which allow for a future where a significant proportion of electricity is renewable.

Germany is also seeing the emergence of other new products and services and providers, including energy savings shops and companies who offer energy counselling. Many of these services tend to be supplied by new entrants who are typically Internet based. Electricity aggregators are also appearing in Germany, which allow smaller load facilities – such as household onsite generation facilities – to aggregate short-term consumer loads for the purposes of sale in organised electricity markets, such as balancing markets or over-the-counter exchanges. One function performed by aggregators is so-called ‘flexibility’ functions, which involves the aggregator measuring the load profile of a consumer-generator, and steering, recording and conducting the billing function for the different procedures. There is also some peer-to-peer like developments emerging through the direct marketing of specific green energy sources (such as windfarms) in a green electricity market.

3.3.3 Regulatory policy implications of market changes

The consumer protection issues which have tended to arise in Germany have not principally related to the sales practices associated with, and the financing arrangements for, renewable generation, but on: the substantial costs of the FIT system, including affordability and distributional issues; various consumer-generator issues such as compensation, metering, and grid connection; and questions about the potential viability of traditional integrated utilities.

¹³⁹ Although this FIT rate for new facilities is adjusted every three months.

¹⁴⁰ It is claimed that because of a subsidy programme which provides loans to install batteries alongside solar panels, Germany already has over 4000 residential storage systems. Some estimates suggest that by 2018 the number of PV systems with batteries will be above 100,000. See HSBC Global Research (2014:5).

¹⁴¹ See Brattle Group (2014:5).

The costs of the FIT approach

Although it is widely accepted that the German approach, and the use of FITs in particular, has been effective in terms of achieving high levels of installation of renewable generation, it is also widely acknowledged that this result has come at substantial cost, which has been borne by retail (particularly) household consumers.¹⁴²

In 2014, the German government announced a policy of phasing out FIT as the primary method for setting prices for renewable energy and proposed a phased shift towards a system based on competitive bidding (in the form of auctions) for renewable power facilities by 2017, starting with larger facilities.¹⁴³ Under this approach, developers and operators of renewable facilities will be encouraged to directly sell their power to retailers or to offer it for sale in the daily electricity exchange, rather than sell it on to the local utility. Any shortfall between the amount received and the FIT will be made up by a marketing bonus.¹⁴⁴

Distributional impacts and affordability

A growing concern in Germany has been affordability, with German retail electricity prices, particularly for households, among the highest in the world. A most notable factor behind price increases is the renewables surcharge which is estimated to now comprise some 18% of the mean total retail price.¹⁴⁵ In addition to this surcharge, retail prices have increased as a result of the network expansion required to accommodate increasing amounts of renewable generation.

It is therefore generally undisputed that the FIT programme has had a significant impact on retail prices, with such prices almost twice that of the average US rates, and far exceeding even those in states like California which also have relatively high levels of renewable installations.¹⁴⁶ This raises a question of whether the increase in prices associated with the FIT programme has disproportionately hurt consumers, or specific sub-sets of consumers. Reports suggest increases in disconnections and threats of disconnection.¹⁴⁷ More

¹⁴² In response to installation rates far in excess of expectations, and associated concerns about the growing cost of the FIT programme, the FIT level has been progressively reduced over time, particularly for PV power. However, it is argued by many commentators that adjustments to the FIT rate in response to installations exceeding targets have not been frequent enough. (See Brattle (2014:2)). It is estimated that the total amount paid for PV solar power has increased from €2 billion in 2007, to around €11 billion in 2013. In 2013, the then European Commissioner for Energy, described the expansion of PV power in Germany as 'out of hand' and proposed a limit on it until sufficient storage capacities had been developed.

¹⁴³ Some analysts argue that given the ceiling of 52GW threshold in installed capacity of PV solar power, further reductions in the FIT for the remaining 16 GW of power is unlikely to have a major impact on total FIT payments as many of the payments are already 'baked in' to terms of the long-term contracts that have been concluded. As such, it is argued that measures to abandon any FIT commitments for the remaining capacity may have the effect of slowing down the construction of what are now very cost-effective installations. See Fraunhofer ISE (2015:12) and Brattle (2014:19).

¹⁴⁴ In April 2015, a first round of pilot tenders for 150 MW of ground-mounted PV electricity which was overseen by the Bundesnetzagentur. According to reports, it received some 170 bids, of which it approved 25 offers and the contracted price was 11.29 €cent/kWh. These bidders have two years to implement their proposals.

¹⁴⁵ Bundesnetzagentur (2013: 38).

¹⁴⁶ See Brattle (2014:12).

¹⁴⁷ Some reports suggest that in 2013-14 over 340,000 households were disconnected, and that nearly seven million threats of disconnection were issued to customers on standard contracts (an annual increase of 23,000). See Bundesnetzagentur and Bundeskartellamt (2014: 9).

generally, it has been argued that increases in retail prices are a form of regressive tax, which is hitting the poorest disproportionately hard.¹⁴⁸

However, the rationale for the application of the renewables-surcharge to all consumers (including households, but excluding exempt industry – see below) is premised on a ‘cost-by-cause’ principle, insofar that the costs of transforming the energy system should be borne by all consumers.¹⁴⁹ In this respect, some commentators argue that concerns about the burden on low-income households should be dealt with through measures related to energy efficiency or the use of increasing block tariffs. Moreover, because of the universal social security system, increases in electricity prices should be allowed for through increases in the fuel component of these social benefit payments (although there have been some complaints that the amount of social benefit is too low).

The debate engages wider distributional issues, because energy-intensive industries have been exempt from the EEG-surcharge to a large extent raising complaints that significant portions of German industry are not ‘paying their share’. Moreover, these exempt industries are seen to gain a further benefit in the form of lower wholesale prices from the ‘merit order effect’, which are the result of the growth of renewable energy.

Consumer protection and consumer-generator complaints

Discussions with the Bundesnetzagentur have indicated that there have generally been no significant issues associated with misselling or deceptive practices in relation to solar PV power installations as has been reported in other countries, such as the US. This is perhaps unsurprising as the FIT level is centrally determined by the TSOs and approved by the Bundesnetzagentur, and is not subject to negotiation between private parties like in the US under some third-party financing arrangements. In addition, under the renewables law, all distribution system operators must connect renewable electricity to the grid, and no conditions have historically been applied about how much electricity can be fed-in.

In short, consumer-generators are guaranteed a fixed price, and an unlimited supply to the grid. While this significantly limits the scope for potential disputes, some issues have arisen between consumer-generators, such as renewable plant operators, and network operators, in relation to the renewables law. To address these issues, a specialised dispute resolution system has been created,¹⁵⁰ which engages in mediation, joint dispute resolution and arbitration. Most arbitration requests relate to solar electricity, which reflects the large amount of installed solar PV capacity, and that it is installed by a large number of small-scale household producers who often require advice on energy matters. According to the arbitration body, the vast majority of issues they consider relate to problems with compensation or remuneration surcharge payments.¹⁵¹ Other matters that have arisen

¹⁴⁸ The leading German newspaper Der Spiegel has noted that the ‘reckless and expensive’ expansion of solar and wind power has disproportionately impacted the poor, and that it is a form of regressive tax. See Der Spiegel (2013).

¹⁴⁹ See Fraunhofer ISE (2015:25).

¹⁵⁰ The EEG-clearinghouse (EEG-clearingstelle) was established in 2007 and is partly funded by the Ministry of Economic Affairs and Energy.

¹⁵¹ Discussions indicate that these issues have arisen because: (1) consumer-generator households used to send in a bill once a year stating what they had fed in to the grid and calculating their own payments according to

include: issues surrounding the clarification of grid connection terms, whether a facility is classified as a plant for the purposes of the renewables law, meter operations, and recorded consumption levels.¹⁵²

Right to choose a supplier and the potential to go 'off-grid'

An issue that has arisen in Germany is what would happen if a specific customer installation – such as the landlord building or a specific community installation – would like to be a fully self-sufficient supplier and remove the connection to the public grid. This type of scenario has been considered by the regulator who has noted that if this occurs, then the operator (such as the landlord) must satisfy certain conditions, such as: not applying any additional charges to the bill from grid-supplied electricity; detailing the composition of the bill; and giving consumers within the installation the right to choose an alternative supplier of electricity if they wish to do so. In particular, it was concluded that if the operator applied any additional costs, then it could be classified as a closed network (in which case it is not allowed to supply any household customers). Alternatively, if it was to have household customers, then it risks being classified as a public grid, and would have to be registered as such. For this reason, and to avoid these requirements, many customer installations maintain a grid connection, even if it is not utilised (which as discussed below raises new issues of cost recovery).

Impact on wholesale prices and traditional utilities

It is generally accepted that the Energiewende policy has been detrimental for traditional integrated utility companies who have experienced record losses in recent years. These losses have been attributed by some companies to significant reduction in wholesale prices for conventional generation, and more generally to a '*crisis in conventional power generation*'.¹⁵³ Utilities have played a limited role in PV power production to date, with the focus of some of these companies being, rather on large off-shore wind projects, which in part reflects the fact that there can be financial disincentives for installing large scale solar power facilities.¹⁵⁴

Because renewable power has priority of feed-in under the law, it is always sold first when it is available, and more expensive conventional generation sources are pushed further down the merit order (the so-called 'merit order' effect). The overall effect of this is lower wholesale prices (given the negligible marginal costs of renewable electricity), and the displacement of conventional power generation,¹⁵⁵ which, in combination, lowers the overall profits of traditional integrated utilities. However, for some integrated utilities, losses sustained from

the EEG FIT rate; (2) DSO have sometimes provided monthly payments based on estimated and not actual usage; and (3) to get FIT you need to be registered, but some consumer-generators have not done so.

¹⁵² See <https://www.clearingstelle-eeq.de/statistik>

¹⁵³ See POWER (2014).

¹⁵⁴ Since 2011 new PV plants larger than 10 MW are excluded from the EEG.

¹⁵⁵ The displacement of conventional generation is particularly pronounced during the middle of the day where historically this period of peak demand was satisfied by gas and coal power plants, but now can be satisfied by solar production which is at its peak at this time. Moreover, on some very sunny days – such as 15 April 2015 where a record 27.7GW of power was generated – the system can be flooded with power, all of which must be accommodated on the network, and resulting in negative prices as generators effectively pay consumers to take energy off the network.

lower wholesale prices is being offset by increases in revenues from offering power in the short-term balancing market. The intermittency associated with renewable generation, as well as slower than anticipated expansion of the transmission grid, has led to an increase in the amount of power being called upon at short notice from the balancing market, where it is estimated that balancing market prices can, at peak times, be up to 400 times that of the wholesale prices.¹⁵⁶ Nevertheless, some argue that traditional German utilities will need to adapt and evolve to survive, by fostering relationships with end users, and participating in, and not resisting, the trend to toward localisation.¹⁵⁷

An emerging issue, and one likely to become more prominent in the future if low-cost storage options become viable, relates to the revenues recovered by the appointed default supplier in an area. Specifically, if more consumer-generators become self-sufficient and only maintain a connection to the grid as back-up, then the default supplier in an area is faced with a situation of being required to service a large number of households who do not consume much grid-supplied electricity, which is problematic given a volume-based pricing structure. The situation is exacerbated by the fact that some non-default suppliers are effectively refusing to offer contracts to PV households on the basis that they are not profitable (i.e.: customers who consume less than 500 kWh). In short, the situation is one where some default suppliers might have a customer base comprising: (a) customers who consume very little from the grid as they are customer-generators; (b) are high default risk and therefore are not being serviced by other suppliers; or (c) are there by default, which means that the default supplier has to seek them out to receive payment (i.e.: new tenants in a flat who have not registered with a supplier). It is suggested that to address this problem either the prices paid to default suppliers will have to increase further to take account of their customer base (and the insurance aspect of it), or the structure of charges will have to change.

3.4 United Kingdom

As with the other countries, the discussion in this section is organized into three sections. It begins with a brief overview of the policy and regulatory context for electricity supply in the UK, it then discusses the different types of new services and business models that have emerged, before considering particular regulatory-related issues that have arisen.

3.4.1 Policy and regulatory context

The UK was one of the first countries in Europe to introduce full retail competition.¹⁵⁸ Six integrated companies (with generation and supply) supply the majority of retail customers

¹⁵⁶ See Bloomberg (2014).

¹⁵⁷ This might involve forging partnerships with smart-meter, solar battery and solar panel providers to present themselves as full service providers. RWE, the third largest company in Germany, has stated that it sees its future as being an 'integrated energy manager' which coordinates the activities of the various market players. This approach of offering integrated products and services – such as virtual power plants – is one that has, according to some accounts, already been adopted by some of the municipal electricity suppliers in Germany (of which there are over 1000).

¹⁵⁸ The retail electricity market was gradually opened to competition in the period from 1998-1999. Formal price controls on domestic retail energy consumer were removed in April 2002.

(some 95% in 2013), while there are 14 smaller domestic electricity suppliers with a combined market share of 5%.¹⁵⁹

The British energy regulator, Ofgem, regulates the network elements of electricity supply (transmission and distribution networks), including arrangements for connection of distributed generation, and more generally oversees wholesale and retail markets and various aspects of consumer protection, including the licensing of suppliers. All electricity suppliers are required to obtain a supply licence to supply electricity to premises. The standard electricity supply licence contains various provisions relating to the supply of electricity to domestic consumers, including various consumer protection requirements (relating to marketing methods, tariff design and payment methods), and information requirements relating to bills. The classification of suppliers for the purposes of licensing and consumer protection depends on the likely form of supply arrangement. An exemption framework is applied, and exemptions can apply to individual cases or a class of activity (such as size of facility) and may be unconditional, or be subject to certain conditions including being time-limited. A new 'Licence Lite' was introduced in 2015 which relieves certain eligible suppliers from certain standard licence conditions, specifically in relation to certain industry codes.¹⁶⁰ It does not, however, relieve them of consumer protection obligations.

Since the mid-1990s the UK has also adopted policies to effect a shift towards a low-carbon, renewable electricity industry. In 2013 the contribution of all renewables to UK electricity generation was estimated at 14.9%, an increase from 6.7% in 2009.¹⁶¹ The vast majority of renewable energy comes from bioenergy, wind and hydroenergy and only an estimated 4% from other sources (such as solar). One recent area of change in the supply market is an increase in the number of community installations of renewable generation, such as installations on schools, churches and local organisations.

Ofgem's concept of vulnerable consumers differs from that applied in Germany and the Netherlands. Specifically, the concept of vulnerability applied by Ofgem is one where *"a consumer's personal circumstances and characteristics combine with aspects of the market to create situations where he or she is: significantly less able than a typical consumer to protect or represent his or her interests in the energy market; and/or significantly more likely than a typical consumer to suffer detriment, or that detriment is likely to be more substantial."*¹⁶² An important part of Ofgem's strategy is to require supply and distribution companies to incorporate consideration of consumer vulnerability in designing products and services.

¹⁵⁹ See Ofgem (2014b).

¹⁶⁰ It is intended to assist new suppliers and distributed energy generators by allowing these new suppliers to enter into a commercial arrangement with an existing supplier who is responsible for ensuring compliance with certain technically challenging and costly elements of a supply licence. However, Licence Lite suppliers have to demonstrate that they have robust alternative arrangements in place with a third party licenced supplier to manage their code obligations.

¹⁶¹ See: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/337684/chapter_6.pdf

¹⁶² Ofgem (2015a).

3.4.2 New products and services and business models

Although there has been an increasing adoption of onsite generation facilities, these have not typically been subject to the types of long-term leasing or financing arrangements as exist in the US. Rather the majority of onsite generation facilities tend to either be owned by the operator, or to a more limited extent, installed under a so-called ‘rent a roof’ arrangement, where a third-party installs the facility and provides electricity to the household for free or at a small discounted fee in exchange for receiving the full feed-in-tariff (FIT). A FIT scheme has been in place since 2010 to promote the installation of small-scale renewable generation technologies. The scheme pays the owner/operator of an eligible renewable generation facility¹⁶³ a ‘generation tariff’ for self-consumed generation, and an ‘export tariff’ for electricity which is exported back to the grid. FIT tariffs vary by the size of system, technology installed and the date of installation and are calculated by Ofgem. The FIT tariff for new facilities can change every three months. However, once an installation is registered to receive FIT payments, it will continue to receive the generation tariff and export tariff as long as the installation remains eligible (which will be adjusted for inflation). FIT payments are made by ‘licenced electricity suppliers’ that participate in the scheme.¹⁶⁴

Another renewables-related policy initiative is the Domestic Renewable Heat Incentive (RHI) which is aimed at encouraging homeowners and landlords to make investments in renewable heating technologies like a biomass boiler, a heat pump or solar thermal panels, and to switch away from conventional fossil fuel heating. There has been a growth in third party finance and ownership arrangements for these investments, whereby a third-party finances some or all of the initial purchase and installation costs of the renewable facility in exchange for some of the RHI payment. Under the current arrangements, third-parties are not eligible to apply directly for the RHI, however the homeowner and the third-party might come to an arrangement whereby the third party and the homeowner jointly own the renewable technology but the homeowner applies for the RHI payment. The payment is then split between the homeowner and the third party intermediary. These third party suppliers are currently not subject to the same level of regulatory oversight as energy suppliers, although Ofgem says it would expect to see “*a level of consumer protection*” in any third party agreement.¹⁶⁵ Ofgem is also currently producing a factsheet to assist homeowners in making informed decisions in relation to these products/arrangements.

More generally, various so-called non-traditional business models (NTBMs) have entered the electricity market. A recent consultation by Ofgem listed the various forms that such NTBMs can take in the British market, including models which focus on:¹⁶⁶

- Local service offerings: including community energy and municipal energy supply arrangements.

¹⁶³ Such as solar PV, wind hydro or micro CHP with a combined total installed capacity of less than 5MW.

¹⁶⁴ These FIT Licensees are the main point of contact for customers, and are responsible for making payments based on meter readings. Suppliers with more than 250,000 domestic customers are mandatorily required to join the FIT scheme, while other licenced supplier can join the scheme voluntarily.

¹⁶⁵ Ofgem (2015e:3).

¹⁶⁶ Ofgem (2015c:13).

- Bundled service offerings: such as multi-service providers who combine energy supply with other services (such as telecoms, entertainment) and energy service companies (who might offer long-term energy performance contracts or energy service contracts, which can involve the financing and investment in demand management or other low carbon projects such as hot water and lighting).
- Customer participation: such as enhancing demand side flexibility, prosumers, and aggregation of distributed generation, peer-to-peer services which directly connect renewable generation to customers, and brokering services which allow customers to collectively deal with suppliers.

In recognition of the potential regulatory impacts associated with these different business models, Ofgem launched a consultation in February 2015 on NTBMs. While acknowledging the potential for these new entrants to transform the energy market and to bring various desirable outcomes for consumers, Ofgem also accepts that such NTBM's can raise 'fundamental challenges' for regulation and for its statutory obligations to protect current and future consumers in relation to what remains an essential service. In this respect, a particular focus of the consultation is whether there are adequate protections for vulnerable consumers.

A key question being examined is whether these NTBM's should be subject to the same levels of regulation as existing suppliers. Ofgem recognises in its consultation paper that NTBM's are often small, and that the complexity and cost of regulation can place a disproportionate burden on these businesses (given their limited staff and resources and lower customer base over which to spread costs). In particular, it notes that regulatory compliance costs, environmental and social obligations and requirements to comply with various codes may make it difficult for new organisations to establish themselves.

In addition, Ofgem accepts that NTBM's may require new approaches to regulation, particularly consumer protection. For example, that there may be a need for the regulatory arrangements to recognise that some consumers are willing to accept a greater risk of disruption, or higher prices, by actively participating in community energy schemes in exchange for what they perceive to be a fairer set of arrangements. More generally, the potential tensions between detailed consumer protection and innovation are being explored. For example, it has been noted that some NTBM's may be discouraged from offering certain products and services because they may not be appropriate for particular vulnerable consumers, while certain obligations placed on suppliers – such as next-day switching – could stifle innovation, by crowding out alternative niche suppliers who do not have the systems in place to comply with such detailed and prescriptive requirements.

3.4.3 Regulatory policy implications of market changes

The consumer protection issues that have arisen in the UK relate to: general concerns about perceived problems of low levels of consumer engagement in the market; the regulatory treatment of NTBMs and third-party intermediaries; some instances of the misselling of solar PV installations; the potential impact of smart meters on consumers; and issues regarding supplier behaviour more generally (which has led to the introduction of standards of conduct on traditional electricity suppliers).

Perceived problems of low levels of consumer engagement

A major concern of Ofgem over the past six years has been what it has perceived as a low level of consumer engagement with energy markets. Specifically, it has been concerned that many consumers, particularly vulnerable consumers, were not benefitting fully from competitive markets. Drawing on concepts from research in behavioural economics, various reviews by Ofgem have found that residential energy customers exhibited “*status quo*” bias and a “*limited capacity when making decisions*”, and that a number of features of the energy markets were “*accentuating these consumer biases*”, therefore deterring consumers from active participation.¹⁶⁷ In particular, Ofgem concluded that residential consumers found individual tariffs complex and difficult to understand, and were confused by the multiplicity of different tariff options. Ofgem also implied that retail suppliers may have an incentive to increase the number of tariffs, and the complexity of choice facing consumers, insofar as complex pricing structures made it more difficult for consumers to make switching decisions, and harder for those that do switch supplier to assess whether or not they had realised any savings.¹⁶⁸

These concerns led to the introduction of new tariff requirements on retail energy suppliers, which included: limiting the number of tariff choice offers to domestic consumers;¹⁶⁹ standardising tariff structures; and creating rules to simplify bundles and discounts. Some of these interventions designed to protect consumers have proven controversial, and the effects of such policies are currently the subject of an Energy Market Investigation being conducted by the Competition and Markets Authority (CMA). In its February 2015 Issues Statement, the CMA noted that there was some evidence suggesting some of these measures may have softened competition,¹⁷⁰ while in its July 2015 Provisional Findings Report it concluded that some of these measures had constrained consumer choice in ways which may have distorted competition and reduced consumer welfare.¹⁷¹ In particular, the CMA finds that the introduction of the four-tariff rule had led to the withdrawal of tariffs, and this may have made some customers worse off.

One other development in relation to consumer protection in the British electricity market is that Ofgem is proposing that energy companies be required to proactively identify any customer who needs a service to equalise their experience in the energy market. This involves a change from an existing scheme where customers must self-identify themselves for extra services and protections.¹⁷² In short, under this proposal electricity suppliers will have to actively consider the needs of different types of customers.

¹⁶⁷ See Ofgem (2008) and Ofgem (2011b).

¹⁶⁸ See Ofgem (2011b). In a press release it was noted that the number and complexity of tariffs was ‘bamboozling’ consumers. See Ofgem (2011a)

¹⁶⁹ To just four core tariffs per supplier.

¹⁷⁰ CMA (2015a:36).

¹⁷¹ CMA (2015b: 32)

¹⁷² Ofgem is also currently reviewing its approach to the Priority Service Register (PSR) licence requirement placed on electricity suppliers. The PSR is a scheme run by energy suppliers whereby specific groups – such as customers who are of pensionable age, are registered disabled, have long term ill health or have a hearing or visual impairment – are offered extra services and protections. Under the current arrangements customers need to sign up to the register.

Regulatory treatment of third party intermediaries

Another issue that has arisen in Britain is what level of regulatory oversight should be applied to Third Party Intermediaries (TPIs), which are defined as organisations or individuals that give energy related advice, aimed at helping consumers buy energy and/or manage their energy needs. Examples of TPIs include: price comparison sites, switching sites, energy brokers and other companies that offer support to consumers with energy procurement. TPI's are currently not subject to the same regulation as energy suppliers,¹⁷³ and Ofgem is currently undertaking a review to consider and assess potential regulatory issues associated with domestic TPIs.

The challenges and risks associated with TPIs who offer face-to-face services, such as switching advice and tariff advice services, was recently considered by Ofgem.¹⁷⁴ It accepted that good quality face-to-face services could improve consumer welfare by making consumers more informed, particularly those who do not have access to the Internet. At the same time, certain risks were identified in relation to: vulnerable consumers; the extent of coverage of offers on the market by such services; as well as more general concerns about doorstep selling, and aggressive selling practices where TPIs have sales-based incentives. Ofgem is also examining the TPI arrangements for suppliers of third party finance for domestic renewable heat installations (described above). As discussed above, existing measures are educative for consumers rather than mandatory or prescriptive for suppliers.

Smart meters and consumer protection

A further consumer protection issue which Ofgem has recently consulted on is in relation to smart meters.¹⁷⁵ The consultation recognises that smart meters can empower consumers by giving access to real-time information which can allow them to be manage their consumption, and can allow for the entry of third-party suppliers who offer new and improved services. However, potential risks have also been associated with smart meters, particularly for vulnerable consumers including: the possibility of erroneous transfers to prepayment mode; a failure in communications infrastructure which prevents or delays top-ups; and challenges around real-time validation of consumers.

A particular risk identified with smart meters is the potential for disconnection. Specifically, the introduction of smart meters may mean that more consumers will be on a form of prepayment arrangement (as the distinction between traditional prepayment and other forms of electronic payment such credit and direct debit customers is diluted).¹⁷⁶ This change in payment methods effectively shifts the responsibility for disconnection from the supplier to the consumer, creating a risk that customers could inadvertently self-disconnect. Risks have been also been identified with the potential for the remote disconnection of customers with smart meters (i.e. suppliers switching off energy supply remotely without visiting a home). To address this risk, Ofgem has introduced rules which require energy suppliers follow a

¹⁷³ There are however some voluntary regulatory measures in place. For example, Ofgem accredits providers of price comparison services if they meet the Confidence Code, a voluntary code of practice for domestic energy price comparison services, which sets out the minimum requirements providers of price comparison services.

¹⁷⁴ See Ofgem (2015d).

¹⁷⁵ See Ofgem (2013).

¹⁷⁶ See (Ofgem 2013:22).

number of steps for disconnecting customers, including undertaking all reasonable steps to determine whether or not a customer, or anyone in the household of a customer, is vulnerable.

Misselling of solar PV installation

Although concerns about misselling do not appear to be as significant in the UK, as the US, particularly in relation to solar PV facilities, issues have arisen at various times. One area prone to misselling concerns is where customers have been sold installations on the basis of promises that the FIT will be at a particular rate, whereas, in fact, the tariff can be changed by the government at any time. Some consumers have also been misled by failures to disclose on-going costs with installations, and by over-estimates of the actual performance of facilities,¹⁷⁷ which has had implications for the period over which the costs associated with the installation can be expected to be recovered through electricity savings. There have also been concerns around the use of high-pressure sales techniques, including door-stop and telephone selling techniques in breach of a consumer code which have resulted, in some cases, in litigation and judicial remedies.¹⁷⁸

An area which has come under scrutiny is the misselling of the so-called 'Green Deal' by providers and electricity suppliers, which allows consumers to take out long term loans (up to 25 years) to pay for various energy efficiency and savings adjustments to their house. To address concerns about consumer protection, the Department of Energy and Climate Change introduced a Green Deal Code of Practice which, among other things, requires providers to issue a statement of the expected energy bill savings, and show how these should be sufficient to meet the Plan instalments.

Misselling issues have also arisen in relation to the marketing of Green and Renewable energy offers. In late 2013, Ofgem launched an investigation into consumer protection in the Green and Renewable Energy Offers market to address concerns the market can prove difficult for some consumers to understand, and that some products being marketed as renewable did not have any additional environmental benefits. Among other things, Ofgem's proposal was that Green and other Renewable Energy Offers be marked more clearly, and that Green Supply Guidelines be extended to cover all of the green tariffs market.

Standards of conduct and requirements to treat customers fairly

Finally, and by way of context, there have in recent years been a number of investigations of misselling tactics employed by the major traditional electricity suppliers.¹⁷⁹ Partly in response

¹⁷⁷ A 2011 survey by the consumer body Which found that three-quarters of salesmen overestimated how much energy the panels would produce by failing to properly take account of cloudy days. This has implications for the period over which the costs associated with the installation can be recovered through electricity savings.

¹⁷⁸ In 2012, the High Court found that a solar PV company operator employed high-pressure sales tactics and misled customers on the performance and potential investment returns associated with a solar PV facility. According to reports, some customers were subjected to 2 hour sales pitches, false claims that the systems would be reinstalled free of charge if they moved home, and asked customers to sign contracts which promised that the customer would receive the purchase price back in 5 years through a scheme which did not exist.

¹⁷⁹ In 2012, EDF was fined £4.5 million for misselling for making potentially false claims about financial savings. In 2013, Scottish and Southern Energy was fined £10.5 million for prolonged and extensive misselling, including giving customers misleading statements, inaccurate information on charges, and misleading information about comparisons with other suppliers. While in 2014, British Gas was fined £1 million for misselling.

to these concerns, in 2013 Ofgem introduced new standards of conduct for traditional, licensed electricity suppliers which require them to 'treat customers fairly'. These requirements cover three areas relating to: behaviour,¹⁸⁰ information¹⁸¹ and process.¹⁸² At the moment the standards of conduct cover electricity suppliers as well as any brokers or third party intermediaries that represent suppliers. It has, however, been suggested that such requirements might be extended to other (non-traditional) suppliers in the market.

3.5 The Netherlands

The discussion in this section is organized into three sections. It begins with a brief overview of the policy and regulatory context for electricity supply in the Netherlands, it then discusses the different types of new services and business models that have emerged, before considering particular regulatory-related issues that have arisen.

3.5.1 Policy and regulatory context

The Netherlands was also among one of the first countries in Europe to introduce full retail competition, and the electricity market was fully opened to competition in 2004. In 2013 it was estimated that there were 45 electricity retailers to final consumers,¹⁸³ and four main electricity retailers.¹⁸⁴

The Dutch energy regulator, Autoriteit Consument & Markt (ACM), enforces competition law, sector specific regulation and consumer law in the energy sector. In the electricity industry, the ACM conducts sector-specific regulation to facilitate competition and consumer protection in the area of energy supply, and to improve efficiency and ensuring security of supply in the area of energy networks.

In the Netherlands, anyone who sells electricity to small-end users – such as households or small businesses – is required to apply for a licence. In order to obtain a licence the supplier must show that it has the technical, financial and operational capability. Companies that provide other energy related services – but do not sell electricity – are not required to obtain a licence. However, an important restriction is that those who supply equipment (such as PV solar panels) are not allowed to combine, or bundle, the sale of that equipment with the supply of electricity (such as under a long-term supply arrangement as seen in the US). This is premised on a need to avoid consumers being locked-in to a single supplier, and to ensure that consumers can exercise their right to choose a supplier (as required under EU directives).

¹⁸⁰ Suppliers must behave and carry out any actions in a fair, honest, transparent, appropriate and professional manner.

¹⁸¹ Suppliers must provide information (whether in writing or orally) which is: complete, accurate and not misleading (in terms of the information provided or omitted); communicated in plain and intelligible language; relates to products or services that are appropriate to the customer to whom it is directed; and fair both in terms of its content and in terms of how it is presented (with more important information being given appropriate prominence).

¹⁸² Suppliers must: make it easy for the consumer to contact them; act promptly and courteously to put things right when they make a mistake; and otherwise ensure that customer service arrangements and processes are complete, thorough, fit for purpose and transparent.

¹⁸³ Eurostat (2015a).

¹⁸⁴ Who sell over 5% of national consumption. See Eurostat (2015b).

The Netherlands has also adopted policies to encourage a shift towards renewable energy. However, for a variety of reasons the contribution of all renewables to electricity generation is lower than in the UK and Germany and the share of renewable energy in total energy consumption was estimated at around 4.52% in 2013 (although electricity's share was 1.98%).¹⁸⁵ The vast majority of renewable energy comes from bioenergy, wind and solar. However, the extent of installed PV solar panels, while rising, is estimated at just over 1GW of installed capacity.¹⁸⁶ As in other countries, support for investments in renewable energy technologies is provided by loans and various tax benefits, and there is also a feed-in-tariff (FIT) in place.

As in Germany, the Dutch approach to addressing consumer vulnerability is largely through wider social policies and schemes, which address matters associated with fuel poverty as part of a wider social security payment. There are however additional protections related to consumer health risks in the form of restrictions on suppliers to disconnect consumers in winter, and a requirement that if a customer defaults on payment the supplier is under an obligation to offer assistance by providing the customer with information about how to settle the debts (for example, by registering with social help schemes).

3.5.2 New products and services and business models

Given its access to North Sea reserves, gas remains an important fuel source for cooking and heating in the Netherlands, and electricity is mainly used at the household level for lighting. Notwithstanding this point, there is a range of new products and services emerging in the Dutch electricity market, including third party intermediaries such as brokers and collective switching services, and municipal and community owned generation facilities are slowly emerging. Many new suppliers that apply for a license to supply these services also offer new services such as energy saving equipment and solar panels, however, as noted above they are not allowed to market the supply of electricity in combination with these other services (i.e.: the supply of electricity must always be marketed as a stand-alone service). As discussed in section 4 below, an interesting development in the Netherlands is online electricity supply platforms that allow consumers to purchase electricity directly from independent producers, such as farmers who have wind turbines.

There are also interesting developments in terms of financing, for example, the crowd funding of some initiatives. Although there has, at times, been some proposals for long-term financing models, such as when a company leases solar panels to an apartment block in exchange for the FIT, no large-scale third party financing exists in the Dutch market. As discussed below, a recent change to the law provides an experimental clause which may allow for a limited number of applicants for local energy generation trials.

3.5.3 Regulatory policy implications of market changes

Discussions with the ACM indicate that there has not, to date, been any significant consumer protections issues associated with the introduction of new products and services. Although

¹⁸⁵ See: <http://statline.cbs.nl/StatWeb/publication/?VW=T&DM=SLen&PA=7516eng&LA=en>

¹⁸⁶ Although this is not all onsite or small scale solar power.

there have been occasional problems from time to time where consumers have netted-off their production of onsite electricity from consumption. There has not been any issues associated with the marketing of green and renewable offers as they are considered to be standard offers, and part of the consumer protection framework. The experience of price comparison websites has also generally been a positive one.

Combination of competition, consumer protection and energy specific protections

A factor which is seen to assist in accommodating the different business models being developed is the combining of competencies for energy specific consumer protection, and more general consumer protection, within a single regulatory agency. According to the ACM in the past, the general consumer protection framework was enforced by a separate body to the energy specific protections, which meant that different operators in electricity markets were covered by different agencies (i.e.: those licensed were covered by the energy regulator, while those who were not registered were within the remit of the consumer protection authority). Now all operators¹⁸⁷ (including price comparison websites, and retail suppliers) are overseen by the ACM in respect of all aspects of information provision, privacy, information disclosure etc.

Importantly, this combination of functions is seen to allow a shift in the future towards a greater reliance on suppliers being required to focus on information provision to consumers, and less on *ex ante* review of tariffs and offerings.¹⁸⁸ In short, if suppliers can demonstrate that their information provision policies are adequate then the requirements for oversight of specific tariffs and offering is felt to diminish.

New experimental policy for local generation supply arrangements

Of particular relevance to the current study is the recent change in the law to allow consumers, grid operators and suppliers to develop trials of local generation supply arrangements without regard to the existing regulatory framework. Examples might include consumer-owned microgrids, or other collective initiatives to produce, generate and supply electricity, as well as partial supply arrangements within a grid supplied area – for example where a street is organised to be self-sufficient. The purpose of this experimental clause is to evaluate what issues arise and whether a special regulatory regime may be required for local energy generation. The types of issues that may arise, which policy makers and the ACM are interested in understanding, are how costs are spread among different participants.

Although such initiatives will be exempt from the standard regulatory framework, those who wish to develop local generation supply arrangements will have to apply to the ACM for approval, and it is expected that only a limited number will be approved. They will also have to submit information about their tariff methodology to the ACM.

¹⁸⁷ The one exception are suppliers who provide financial products.

¹⁸⁸ In the Netherlands, suppliers are required to submit to the ACM all tariff offerings for review four weeks prior to their introduction.

Consumer information and engagement

As noted issues associated with vulnerable consumers are addressed through local government social policies with special protections in relation to disconnection. Accordingly, the concept of vulnerability does not specifically encompass low levels of engagement in the electricity market. In terms of engagement, it is noted that around 60% of consumers remain on the generic (or standard) tariff in the Netherlands; that is, the tariff that applies if you do not actively choose a supplier. As in other EU Member States, a focus of the regulator has been on how to increase consumer engagement (for which switching behaviour is often seen as a proxy), and in this respect the ACM has been encouraging suppliers to speak to customers about what information they need, and the form that the information should be supplied in. This includes through the whole cycle of a transaction from the initial offer, to the billing process and the invoice. There has also been a focus on the use of standard terminology.

3.6 Summary

A range of new products and services, and new entrants, are emerging across the jurisdictions surveyed. Among these: third-party developers/operators who install, own and operate onsite generation for small customers; community energy and municipal energy supply arrangements; third-party intermediaries offering various energy advice services; brokering or collective switching services; electricity aggregators; peer-to-peer platforms for direct marketing of electricity; and multi-service providers who combine energy supply with other services.

In the US, Germany and the UK, there has been a significant growth in the adoption of onsite solar PV technology at the household level (i.e.: behind the meter) in recent years. However, the financing of this onsite generation differs across jurisdictions. In the US, the majority of installed residential solar power is under a third-party ownership model, such as a solar lease or a third-party PPA agreement (where in some cases a long-term contract is negotiated between private parties which sets a fixed, predetermined price for a period of up to 25 years). In contrast, in Germany, the UK and the Netherlands, most onsite generation facilities are financed by the owner of the property and are funded through a feed-in-tariff that sets a guaranteed price for renewable generation for a set period (of up to 20 years).

All suppliers of electricity to customer installations/premises/small-end users are typically required to be registered in Germany, the UK and the Netherlands. However, as most onsite generation in these countries is not subject to a third-party ownership or leasing arrangement, onsite generation owner-operators are generally not required to register as suppliers. Even when electricity is supplied by a third-party (such as a landlord in a block of flats), consumers in EU Member States have a right to choose a supplier and to be connected to the local distribution grid; which means that they are not locked-in to a single supply source. The situation in the US is less clear, and some state regulators have sought to have some oversight over third-party operators. In some states, questions have arisen as to whether third-party operators/owners of onsite generation facilities should be classified as a 'utility' and therefore subject to the same regulatory conditions as traditional electricity suppliers, or alternatively, classified as a 'competitive supplier'.

The regulatory issues, and policy responses, differ across the countries surveyed, reflecting the different supply contexts and policy choices. Among the specific issues and responses:

- In the US, there are concerns about inadequate levels of consumer protection and misleading sales practices related to the sale of onsite generation facilities in some states. These issues have led to investigations by PUCs in some states, and at the federal level. Some states, such as California and Arizona, have imposed (or are looking to impose) certain disclosure requirements. The practice of net metering is also contentious, and there are claims that the policy has uneven distributional effects. This policy is prohibited in some states for third-party operators, and subject to close legal review in others.
- There have generally been no significant issues associated with misselling and consumer protection in relation to solar PV power installations in the EU countries surveyed (although there have been some cases in the UK). This may reflect the fact that the FIT rate is fixed centrally (by the government or regulator), and not subject to private negotiation between parties. Some issues do however arise in these jurisdictions, and in Germany a specialist dispute resolution body has been established to consider these matters.
- In Germany, wider concerns exist about the costs of the renewables policy, who is bearing the costs of intermittency, and the distributional impacts that this may be having on certain categories of consumer. The level of the FIT has progressively been reduced and the German government recently announced a phased shift towards a system based on competitive bidding (in the form of auctions) for renewable power facilities.
- In Britain, the regulator is currently examining the regulatory treatment of non-traditional business models, third party intermediaries and the potential impact of smart-meters on consumer protection. A relevant recent regulatory initiative has been the introduction of principles into the regulatory framework in the form of standards of conduct that require traditional, licensed electricity suppliers to 'treat customers fairly'.
- In the Netherlands, a recent change in the law will allow for the trial of local generation supply arrangements without regards to the existing regulatory framework. The purpose of this experimental clause is to evaluate what issues arise and whether a special regulatory regime may be required for local energy generation.

There are some common themes across surveyed jurisdictions in relation to the impacts of new products and services:

- A common issue relates to the future viability of the default suppliers in a context where an increasing proportion of consumers install onsite generation facilities. This issue is seen to be of particular importance given that these suppliers are generally called on to supply back-up to intermittent power, and given projections that low-cost storage options may become more viable in the future for a larger number of

consumers. Among the possibilities suggested to address this problem include that: the prices paid to default suppliers increase to take account of their customer base (and the insurance aspect of it); onsite generation be offered differential FIT rates based on reliability; and the structure of charges change to allow for a greater component of cost recovery based on fixed charges.

- The potential impact of smart-meters on consumer protection is a common focus of many regulators, including at the EU level. While smart meters are seen to empower consumers, they can also give rise to potential risks particularly as they can make supply arrangements more complex for some consumers (such as vulnerable consumers). There are also wider issues associated with who has access to customer metering data, and for what purpose.

The introduction of new and products and services can raise new risks for some types of consumers, and this raises a wider question about whether the approach to assisting consumers who have low-incomes or special needs should adapt to take account of this fact. In the US, a number of federal and state programmes assist consumers with special needs or those consumers on low income, although there are calls for some state PUCs to take a greater role in the oversight of some third-party financing arrangements. In Europe, specific consumer protection measures exist for vulnerable consumers, however, the concept of 'vulnerable' is left within the discretion of EU Member States. In countries such as Germany and the Netherlands, the concept of vulnerability is generally defined having regard to existing universal social policies that guarantee certain rights to citizens who are experiencing financial hardship (including rights to electricity), along with specific policies in relation to disconnection. In the UK, the notion of vulnerability has been interpreted broadly to cover not only financial hardship, but also to situations where a consumer is significantly less able than the typical consumer to represent their interests in the energy market. A debate this raises is the extent to which inactive or uninformed consumers should also be considered to be a form of 'vulnerable' consumer, and whether consumer policy measures are needed to address such inactivity and 'engage' consumers. The relevance of the scope of policies towards vulnerable consumers is that it is sometimes cited as a potential barrier to entry for some emerging business models.

4. Review of approaches in other regulated industries

This section briefly surveys the regulatory approaches adopted in other regulated industries and activities where new services and products are challenging traditional services, and calling into question consumer protection arrangements. The industries considered include telecommunications, postal services, gas, water, airlines, private transportation, and the so-called ‘sharing economy’. The survey is not intended to be comprehensive but to draw out any relevant insights about how regulatory frameworks have responded to new products and services, and the extent to which these may have relevance to electricity markets. As we will see, the extent of entry of new products and services varies significantly across the different industries. In addition, in some industries – most notably communications, postal services and transport – policymakers and regulators across a number of jurisdictions are still in the process of understanding how regulatory frameworks should, or might, adapt to the emergence of new products and services.

4.1 Telecommunications

Of all the industries examined in this section, the regulatory implications associated with new products and services in telecommunications are perhaps the most similar to those being confronted in electricity. The telecommunications industry is seeing high and rapid uptake of new products and services, particularly so-called over-the-top Services (OTT) which involve services supplied ‘over’ the public Internet without the involvement of a network operator. These services are provided by companies with very different business models to traditional suppliers, and who tend to focus on specific segments of the market or niche services. As in electricity, the emergence of these entrants is seen as potentially highly beneficial for consumers insofar as they bring new services to the market, and employ different and innovative business models.¹⁸⁹

As described below, these new products and services are not easily classifiable under the existing categories to which regulatory obligations and consumer protections attach. Consequently, many of the issues which are confronting policymakers and regulators in electricity are also arising in telecommunications. In particular, there is an acknowledged need across many jurisdictions for policies which are technologically neutral, and do not unduly favour one type of technology or service delivery method over another. It is also recognised that emerging products and services are potentially disruptive to the business models of existing incumbent telecommunications providers and this has led to calls across a number of jurisdictions for a balance to be struck between encouraging innovation and growth, and ensuring traditional network operators recover their fixed costs, meet any universal service obligations and remain viable.

¹⁸⁹ Examples include services such as Skype and WhatsApp which allow consumers to call and text over an Internet connection using a range of devices (PCs, tablets and mobile phones), while services such as Netflix and Amazon Prime allow customers to watch films and TV programmes on various Internet connected devices.

4.1.1 New products and services

Various forms of entry have occurred since the introduction of competition in the telecommunications industry: full-scale entrants who compete head-to-head with the incumbent in providing an end-to-end service; entrants who make certain investments in network infrastructure, but also acquire ‘unbundled’ access to certain services/elements of the incumbent, most notably the local copper wire network; and entrants who purchase services at the wholesale level from the incumbent and re-sell these services under a different name at the retail level. More recently, another form of ‘entry’, and entrant, has become prominent in the form of so-called ‘over-the-top’ services, such as VoIP¹⁹⁰ services, mobile messaging services, applications and cloud services and Internet television.¹⁹¹ Many of these services directly compete with, and are rapidly displacing, the voice, data and video services provided by traditional telecommunications providers.¹⁹²

Historically, the different network infrastructure technologies tended to be associated with specific services (i.e.: the public-switched copper network for fixed-line voice calls, cable for television etc). Accordingly, different infrastructure mediums (PSTN, cable networks and mobile networks) have faced different regulatory oversight and obligations, notwithstanding the fact that they may have come to be supplying the same, or closely substitutable, services to one another.¹⁹³ These differences in regulatory treatment have sometimes been accentuated by the application of an asymmetric regulatory approach in some jurisdictions to assist the development of entry into the market.¹⁹⁴

Recent decades have seen a greater separation of the underlying network infrastructure from the services provided on that infrastructure and networks now provide multiple services using a common technology infrastructure.¹⁹⁵ This has given rise to a recurring issue in telecommunications regulation – that is still contested today in the context of OTT products and services – which is how different services and technologies should be classified under the regulatory framework.¹⁹⁶ Broadly speaking, in many jurisdictions a distinction is sometimes drawn between ‘information services’ and ‘telecommunications services’. This

¹⁹⁰ VoIP is a general label given to services which transmit voice traffic using the Internet Protocol (IP). VoIP services convert voice signals into a digital signal which then travels over the Internet.

¹⁹¹ For more information on these services see ITU (2015).

¹⁹² While most telecommunications incumbents are also shifting towards IP-based packet switching technology, these are private managed packet networks, which means that they use mechanisms such as prioritization, and other ‘traffic shaping’ techniques, to reduce latency (i.e.: delay) and ensure greater levels of reliability than the public Internet (which is unmanaged and a ‘best efforts’ principle applies). An important difference is that while some (unmanaged) OTT services are offered for free or at limited cost to the end-user, the managed IP services provided by traditional incumbents are subject to charges that are intended to recover the costs associated with the underlying network.

¹⁹³ For example, while traditional, fixed-line network operators, are typically subject to detailed *ex ante* regulation, similar regulatory obligations have not always been imposed on cable network operators.

¹⁹⁴ The rationale for this approach has sometimes been described as being based on a variant of a more general ‘infant industries’ argument, whereby entrants are encouraged to prosper and grow without being burdened with full regulatory oversight and responsibilities. Supporters of asymmetric policies argue they can act as a powerful policy instrument, changing the incentives of potential entrants and benefiting consumers. There are however objections to asymmetric regulation, including that: it can impose asymmetric cost burdens, which can lead to a bias toward particular firms or technologies, and lead to productive efficiency losses which reduce welfare; it can create competitive distortions among operators; and that it can impact on the incentives of firms to invest and innovate. In particular, it is suggested that the incentives for investment by the incumbent or regulated firm can be dampened, while the incentives for entrants to invest can be excessive.

¹⁹⁵ Largely as a result of digitization, and developments in IP technology.

¹⁹⁶ See Bach and Sallet (2005).

distinction is critical as it determines the rights and obligations imposed on providers of services, and in some jurisdictions, who is able to regulate them. In the US, for example, cable services have generally avoided being subject to certain regulatory requirements on the basis of being classified as an ‘information service’ and not a ‘telecommunications service’. The EU regulatory framework, which is intended to be technologically neutral, also draws a distinction between an ‘information service’ and an ‘electronic communications service’. Generally speaking, across most jurisdictions, providers of ‘telecommunications services/electronic communications services’ have been subject to stricter forms of regulatory oversight than providers of ‘information services’.¹⁹⁷

4.1.2 Consumer protection framework

Among the types of consumer protection related regulatory requirements that have been imposed on *traditional* telecommunications service providers include requirements related to: access to emergency services, privacy and data protection, network reliability, minimum quality standards, provision of Universal Services, wiretapping for law enforcement services, and lifeline and other services for ‘vulnerable’ people.¹⁹⁸ A number of these requirements are also imposed on ‘*competitive* telecommunications providers’,¹⁹⁹ and, although such providers are not required to provide a universal service they may be required to contribute to a universal service fund. Generally speaking, issues associated with low levels of consumer engagement have tended to feature less prominently in the telecommunications industry than in other industries, like electricity. Switching rates have tended to be high, and consumers have embraced developments in mobile telephony and Internet services, although this has given rise to its own set of consumer protection concerns.²⁰⁰

In Australia, the licensing and regulatory requirements distinguish between: carriers who own telecommunications infrastructure used to supply carriage services to the public; carriage service providers, who use a carrier’s infrastructure; and content service providers. Carriage service providers (CSPs) and content providers are not required to be licensed, but are covered by certain regulatory obligations. In terms of consumer protection, various industry codes,²⁰¹ establish rules in relation to information provision to consumers, billing processes, complaints handling, privacy protection, advertising of services etc. Important among these is the Telecommunications Consumer Protection (TCP) Code which provides protection from bill shock, confusing mobile plans and poor complaints handling. It applies to all CSPs and is overseen by an industry compliance body. Another agreement is the ‘customer service guarantee’ which applies to all CSPs and is intended to protect residential and small business customers from poor telephone service, and provide compensation if the standards are not satisfied. However, there is a temporary exemption scheme which allows

¹⁹⁷ For example, telecommunication service providers are often subject to various common carriage requirements to provide access to their networks and infrastructure on specific regulated terms, and specific consumer protection requirements such as requirements to offer access to emergency services and to contribute to the funding of the universal service.

¹⁹⁸ A survey by the ITU in 2013, found that the most commonly cited consumer protection provisions related to: access to information and transparency; equity and right of access to services; protection of personal data; privacy; confidentiality of information and the right to complain. See ITU (2013:2).

¹⁹⁹ This is typically a defined category of entrant, who competes in the supply of traditional products and services. An example would be Optus in Australia and the Competitive Local Exchange Carriers (CLECs) in the US.

²⁰⁰ For example, associated with potential customer confusion, including through complex pricing practices (such as bucket plans) or billing practices which lead to what is termed ‘bill shock’.

²⁰¹ Which are registered with Australian Communications and Media Authority (ACMA).

CSPs, who are not universal service providers, with a small market share, to be exempt from compliance obligations. This was intended to encourage market competition for services.²⁰²

4.1.3 Approach to regulation of new services

The approach to the regulation of OTT services has been a controversial one, and various arguments in favour and against the extension of consumer protection regulation to these new services have been proposed. The specific types of consumer protection issues that have been identified in relation to OTT services include.²⁰³

- Whether there is a need for some degree of minimum quality of service for unmanaged OTT services (at the moment they are provided on a 'best efforts' basis with no quality of service guarantee to the user), and if not, whether consumers are made aware of this fact
- What access requirements should be introduced for those who have disabilities or are less able to engage with the services
- Whether specific privacy, confidentiality and data protection requirements should be imposed on OTT operators (in relation to collection and storage of personal data for example)
- Whether there is a need to address potential misleading and false advertising, including unsolicited advertising
- How contracts completed online are treated under the consumer protection framework
- Complaints filing and handling issues
- Issues associated with online fraud
- Whether legal interception requirements should also be extended to OTT services

In considering the appropriateness of regulations to address these and other issues, most policymakers and regulators have been concerned to strike a balance between not stifling entry and innovation by overburdening OTT providers, or applying inappropriate regulatory frameworks, while at the same time ensuring adequate levels of consumer protection.

The focus on what that balance should be is a current focus in a number of jurisdictions. In the EU, not all OTT services are subject to the same consumer protection requirements as traditional telecommunications operators,²⁰⁴ however this is currently under review with the stated aim of creating a level playing field for new and traditional market players.²⁰⁵ This has been interpreted as signalling an intention to subject some OTT services to the same regulatory regime as telecom operators, including requirements in relation to emergency

²⁰² See ACMA (2015).

²⁰³ See also International Telecommunications Union (2014).

²⁰⁴ The current regulatory framework tends to apply specific consumer protection requirements on services that are defined as 'electronic communication services', which in a nutshell, means that they involve the 'conveyance of signals' on an electronic communications network. However, because many OTT services do not involve the conveyance of signals, they are not necessarily captured by this definition.

²⁰⁵ In May 2015, the European Commission launched a new digital single market for Europe, part of which expressly recognised a need to overhaul the telecoms rules to ensure a level playing field for all market players, traditional and new. See European Commission (2015).

calls.²⁰⁶ These changes are also seen by some as perhaps responding to the actions of some traditional telecoms operators to the emergence of OTT services, such as limiting the use of such services by customers (i.e.: ability to use Skype on a mobile phone), changes to pricing structure to align prices more closely to traffic, and in some cases, by discriminating against traffic of competing OTT services (such as the blocking, throttling or discrimination of legal content and applications). It is also seen as an attempt to align the different approaches being adopted across EU Member States, which at the moment show considerable diversity. For example, in 2013, the French telecommunications regulator launched legal proceedings against Skype for failing to register as a provider of electronic communications services, and therefore not complying with obligations in relation to the emergency calls and the legally mandated interception of certain calls.²⁰⁷

The situation with respect to the consumer protection and regulation of VoIP – and OTT services more generally²⁰⁸ – in the US is contentious and hotly debated. At one extreme, some argue that OTT services, such as VoIP providers, should be regulated as if they are public utilities.²⁰⁹ Others, including associations of state PUCs, have argued that a technology neutral approach should be adopted, and that some consumer protections need to be preserved and consumers made fully aware of what they are signing up to regardless of the technology or communications protocol used to provide services.²¹⁰ Others still have argued against such policies, noting that VoIP is nothing more than a software application and that attempts to regulate it would harm innovation.

The approach to the regulation of VoIP has proven to be a flash point between some state regulators and state governments, as well as between the federal regulator (the Federal Communications Commission, FCC) and some state regulators. The FCC has not ruled on whether VoIP is a telecommunications service (and therefore generally within the ambit of state regulation) or an information service (generally not subject to state regulation). However, it has designated *some* VoIP providers – those whose services allow calls to, or from a traditional telecoms network, – as ‘interconnected VoIP’ providers, which requires them to provide some additional consumer protections.²¹¹ Some state PUC’s have attempted to designate VoIP as a ‘telecommunication service’ and subject them to regulation, in order to apply consumer protections, universal service obligations and carrier of last resort obligations which apply to traditional telecommunications providers.²¹² In May 2015 it was reported that Minnesota became the first state to regulate VoIP as a ‘telecommunication

²⁰⁶ See Fioretti (2015).

²⁰⁷ More recently the issue of whether Skype is a telecoms operator has also been considered by a Belgian Court. See Sawers (2015).

²⁰⁸ In the US, for example, there are proposals to regulate some OTT online video services – such as Netflix – in much the same way as traditional cable and satellite operators.

²⁰⁹ See Lyons (2013) and Downes (2012).

²¹⁰ See National Association of Regulatory Utility Commissioners (2014).

²¹¹ Such as: access to certain 911 services; services to certain disabled customers; cooperate with law enforcement officials; follow certain data protection rules and contribute to federal Universal Service Fund programmes.

²¹² These attempts have proven to be controversial and it is reported that legislatures in over half of the US states have passed legislation which prohibits the state PUCs from regulating VoIP services. For example, in California the state legislature prohibited the PUC from regulating VoIP services until 2020. It is claimed that this legislation is intended to stop PUCs retarding innovation by imposing regulatory costs on Internet services. There are also concerns that absent a federal policy, this will lead to a patchwork of state-by-state regulations.

service' on the basis that some VoIP providers were not contributing to state programs.²¹³ It should be noted that even where a state has not designated VoIP as a telecommunications service, state PUCs do have some authority in relation to certain consumer protection issues.²¹⁴

In the UK, the regulator Ofcom has introduced a regulatory code which requires VoIP service providers to ensure that consumers have access to information about the capabilities of the service.²¹⁵ Importantly, where consumers take a VoIP service that does not offer emergency services or which is dependent on an external power supply then VoIP suppliers are required to obtain positive acknowledgment, label the capability of the service on equipment or via information on a computer screen and play an announcement each time an emergency call is attempted.²¹⁶ In addition, VoIP services that allow users to make calls to normal national phone numbers,²¹⁷ must also have the ability to connect to emergency numbers.

In Australia, certain VoIP service providers are considered to be Carriage Services Providers (CSPs) and a range of legislation, codes and standards apply to them. In addition, VoIP service providers who allow customers to make calls to, or receive calls from, the traditional public telephone network are subject to additional obligations and consumer protection codes.²¹⁸ However, the substantial growth in the take up of VoIP services in Australia²¹⁹ has led to an increasing recognition that this may require a close re-examination of the regulatory framework, given that traditional fixed line services represents a declining set of total communications services. In addition, ACMA has observed that the current consumer safeguards, including universal service obligations, are based on a service and technology specific regulatory framework which may need to be revisited given the emergence of VoIP.²²⁰ The need to re-examine the regulatory framework is being given further impetus by the increasing ability of consumers to effectively build their own communications links using combinations of OTT services, networks and devices.²²¹ This is raising questions about end-to-end connectivity and the scope, and need for, universal service obligations. Put simply, if a consumer has multiple pathways to communicate, does this make redundant a regulated service of last resort requirement?²²²

²¹³ See KTTC (2015).

²¹⁴ Practices like so-called slamming (when a provider charges without the consent of a customer) and cramming (when items are added to a bill with the customer's consent).

²¹⁵ For example: whether the service includes access to emergency services; the extent to which the service depends on the power supply of a user's home; whether directory assistance is available and whether consumers are able to keep their telephone number if they switch suppliers.

²¹⁶ According to Ofcom this was in response to research which suggested that a significant percentage of customers believed that they had access to emergency calls when this was not the case.

²¹⁷ So-called Type 2 and 4 VoIP services (and not PC-to-PC services such as Skype).

²¹⁸ See: <http://www.acma.gov.au/Citizen/Consumer-info/My-connected-home/Voice-over-internet-protocol/voip-legislation-codes-standards-i-acma>

²¹⁹ It is estimated that the number of VoIP users is now nearly half the number of fixed line services. See ACMA (2014: 8).

²²⁰ See ACMA (2014).

²²¹ For example, consumers can communicate now using a range of services (voice, texts and video calls) on a range of different devices (PCs, fixed and mobile phones, tablets) and networks (mobile, fixed line or cable).

²²² This issue is raised in a recent ACMA discussion paper. See ACMA (2014).

4.1.4 *Insights for consumer protection arrangements in electricity markets*

Although regulatory policy in relation to OTT services appears to be in a state of flux in many countries, there are some potentially relevant insights for electricity markets about how different policymakers and regulators are approaching the issues:

- First, many of the consumer protection issues arising for OTT services are similar in nature to those associated with the emergence of new products and services in electricity markets. For example, whether consumers are made aware of the potentially different quality of service associated with these services (in terms of interruption); the adequacy of protections for vulnerable consumers; privacy and data protection issues; and complaints filing and handling issues. There is also the question of what protections should be put in place – such as informed consent policies – for those customers who choose to: take particular risks with a new type of service (such as disrupted or interrupted services, fluctuating tariffs), lose access to certain protections (such as access to emergency number), or who choose to build their own networks and effectively go ‘off-grid’ (or ‘cut the cord’ in telecoms parlance).
- Second, the approach of some jurisdictions has sought to draw distinctions between different types of VoIP services, particularly on the basis of whether or not they interconnect with a traditional public telephone network or not. Generally, this has led to a situation where those VoIP service providers that interconnect with the existing fixed line network become subject to a range of additional consumer protections regulations, although not always to the same degree as traditional suppliers. However, it has also created a situation where other VoIP services providers, such PC-to-PC applications like Facetime and Skype, are not currently within the regulatory remit in some jurisdictions. If this approach was applied in the context of electricity markets, it might imply that only services and products which interconnect with the traditional ‘grid’ – for example, because the consumer obtains some supplies from the grid, or exports power to the grid – would fall within the remit of the consumer protection regulatory framework, although they may not necessarily be subject to exactly the same requirements as traditional suppliers.
- Third, given the rapid pace of change, policymakers and regulators in a number of countries have, to date, appeared reluctant to apply the full suite of regulations to all new entrants on the basis that this would be disproportionate. However, in some cases this has created a policy vacuum. In the US, the lack of policy clarity has sometimes led to divisions between some state legislatures and PUCs, and between state PUCs and the FCC. Similarly in Europe, Member States have applied different approaches to the regulation of VoIP services. However, this appears to be changing, with an increasing appreciation of a need in the EU, the US and Australia to develop policy in this area.²²³

²²³ In the EU there is current policy focus on ensuring a ‘level playing field’, while in the US many commentators have observed that the time has come for the policymakers and the FCC to address the regulatory approach to

- Fourth, the telecoms experience highlights that consumer protections developed in relation to traditional supply structures may not be appropriate in newer contexts and new regulatory frameworks may be required. In this respect it is recognised that the regulatory impact of the new circumstances is two-way – that is, they impact not only on new providers of services but also on the rationale for the continuing regulation of traditional operators. For example, it raises the question of whether a traditional network operator needs to be subject to a supplier of last resort requirement if there are now multiple ways to communicate (this goes to the essentiality question).

4.2 Postal services

In many parts of the world, including in the EU, the US and Australia, policies directed at market opening have been introduced in the postal services sector. The scope of these policies vary by jurisdiction, but typically private mail operators have been able to compete with a (typically government-owned) incumbent provider at various points in the value chain, including ‘upstream’ activities (such as mail houses, printers and mail aggregators), and ‘downstream’ activities (such as parcel delivery, express delivery and logistics). However, in many jurisdictions, an incumbent provider (such as Australia Post) retains exclusive rights over certain mail and letter deliveries.²²⁴

4.2.1 New products and services

In general terms, two new types of entry are impacting on the postal services industry. The first is entry by new suppliers of postal services, and include operators that provide priority mail, express mail, bulk parcel post and bulk international mail services.²²⁵ Some entrants supply end-to-end services by collecting, sorting, transporting and delivering the parcels through their own network, however other entrants only undertake some activities, such as collection, sorting and long-distance transportation, but utilise the services of the incumbent for the ‘last-mile’ delivery in areas where it would be too costly for them to deliver. There has also been ‘upstream’ entry in terms of mail sorting companies who engage in various activities such as pre-sorting mail prior to delivery in order to reduce costs.

The second area of entry impacting on the postal services industry is digital products and services. Most obviously, competition to traditional letter services has come from electronic mail, as well as SMS, on-line chat systems (such as FaceTime or GoogleChat) and social media (Facebook) for personal communications, and specific applications such as banking

VoIP and other OTT services, noting that this will make the much contested net neutrality debate seem like ‘easy street’. See European Commission (2015); Hettick (2014) and ACMA (2014).

²²⁴ In Australia, for example, Australia Post has an exclusive right for collecting and delivering reserved letter services (i.e.: letters up to 250 grams) within Australia and for issuing stamps. In the US, the United States Postal Service (USPS) has an exclusive legal right to deliver non-urgent first class, outbound US letters and to put mail in private mailboxes.

²²⁵ In many cases, these companies are associated with incumbent operators in other jurisdictions (such as TNT) or are major logistical or transportation firms, and some of these companies now have significant market shares in their segments, for example in express or package deliveries. Examples of these companies include: DHL, TNT, FedEx and UPS, and in Australia, Linfox and Toll.

apps for commercial communications (eg. which allow you to check your account balance as a substitute for a paper account sent monthly by the bank). It should be noted, however, that, while the emergence of digital products and services may have reduced demand for traditional letters, the growth in electronic commerce – particularly distance selling – has increased the volume of parcels and packages that are being delivered using postal services in many jurisdictions.

As discussed below, a prominent policy issue in postal services across many jurisdictions relates to the scope, viability and funding for the Universal Service Obligation (USOs). Generally speaking, the USO obligations set out a minimum range of services of specified quality and prices that must be provided to all citizens, irrespective of their location. Critically USO requirements are generally imposed by governments on providers so as to meet various wider social and other policy objectives, such as ensuring access to postal service regardless of location (in terms of both collection and delivery). However, fulfilling these objectives require operators to incur costs which they would not otherwise have incurred in the normal course of business. The level and financing of USO costs is proving to be a highly controversial issue in many countries – such as in Australia and the UK – particularly in a context where demand for some traditional mail services is declining (meaning that the USO costs have to be recovered from an ever-decreasing customer base) as a result of customers substituting away from traditional mail to other forms of communication, notably email but also texting and video calls etc.

4.2.2 Consumer protection framework

The consumer protection framework in post has traditionally been heavily intertwined with the commitments made by an incumbent supplier in relation to the universal/community service obligations. In many jurisdictions, including Australia, the US and the UK, the incumbent operator is either fully or partially government controlled.²²⁶ The scope of the USO varies across countries but can cover commitments in relation to minimum levels of service, frequency of delivery (i.e.: number of deliveries per week), geographic coverage and commitments to keep prices for stamps affordable.²²⁷ In Australia, Australia Post's Community Service Obligations (CSOs), include obligations to: provide a letter service for both domestic and international letter traffic; make the service be available at a single uniform rate within Australia for standard letters; ensure the service be reasonably accessible to all Australians wherever they reside; maintain performance standards for the service which reasonably meet the social, industrial and commercial needs of the community.

While the USO/CSO obligations provides certain minimum levels of service in relation to letter deliveries, other general types of consumer protection regulation relate to the security

²²⁶ However, these operators are generally self-funding meaning that they rely on sales of postage, product and other services to fund their activities.

²²⁷ In the EU, the regulatory framework for postal services provides a USO defines a minimum range of services of specified quality which must be provided in all Member States at 'affordable prices' for the benefit of all users, irrespective of their geographical location

of mail services and the protection of data. There can also be regulation around mail-scams which can be used as a way of exploiting vulnerable consumers.²²⁸

4.2.3 Approach to regulation of new products and services

New entrants can be distinguished between entrants who provide similar services to the traditional incumbent operator and entrants who provide substitute services to some of the traditional operators services (for example: digital providers of email).

Treatment of new providers of traditional services

New entrants into the traditional postal services activities such as end-to-end services, parcel delivery, priority mailing or business mail services generally face a lower level of regulatory obligations than those faced by traditional incumbents, in part, because traditional operators are required to satisfy the various requirements of the USO/CSO. As a consequence, entrants have been able to select which areas to service both geographically, and in terms of the services they offer and the frequency by which they offer services. The extent of oversight of other operators in terms of consumer protection varies across jurisdictions and types of postal operator (i.e.: the services they offer). As a result of direct competition in some segments of the market, incumbent operators in a number of jurisdictions have argued that it is becoming increasingly difficult to finance its activities. They argue that entrants ‘cherry-pick’ the areas that they want to serve (typically higher volume and cheaper to deliver areas such as urban areas) leaving the remaining higher-cost, more geographically dispersed, areas to be served by the incumbent. It is certainly the case that the profitability of incumbent providers in many parts of the world has suffered in recent years,²²⁹ although there are generally thought to be a variety of factors behind this.

In Europe, national regulators have jurisdiction to develop rules for non-universal service operators with respect to complaints handling, the collection of statistics and account information, and must enforce the European-wide requirement that all postal operators maintain certain measures to protect the rights of users. However, Member States can develop different arrangements in implementing these high-level European requirements. In the UK, a distinction is made between *postal* operators and *regulated* postal operators for the purposes of consumer protection.²³⁰ *Regulated postal operators* are required to provide a regulated postal service and satisfy certain consumer protection requirements.²³¹ In contrast, *postal operators* are only required to have a complaints process in place. Generally speaking, the consumer protections associated with package and bulk mail operators is typically less than for letter mail. This has sometimes led to problems arising with the

²²⁸ Postal service operators in Australia and the US are active in terms of assisting authorities in identifying such schemes. In Australia, Australia Post is legally able to remove mail which it considers to be ‘scam mail’, and must notify the ACCC and the consumer protection agency in which it occurs.

²²⁹ In the US, for example, the USPS has experienced losses for most of the past decade it is estimated that mail volumes fell by 20% over the period 2008-2012, while Australia Post has recently announced that it is at a ‘crisis point’, having recently recorded its first loss in 30 years. See Sydney Morning Herald (2015a).

²³⁰ Regulated postal services are for items which cost less than £1 and weigh less than 350 grams.

²³¹ For example, they must meet certain minimum standards for handling complaints; must meet minimum standards around keeping mail secure and dealing with issues of mis-delivered or mis-collected mail; and must be a member of the postal ombudsman. In addition, since March 2012, all regulated postal operators have been required to comply with the Mail Integrity Code of Practice (MICOP) which aims to minimise the potential for postal packets to be subject to loss, theft, damage or interference.

collapse of parcel delivery services at critical times,²³² and a March 2015 House of Commons report raised more general concerns about a 'race to the bottom' which may be arising as a result of postal service competition.²³³

In Australia, postal operators or courier companies other than Australia Post are not generally subject to additional consumer protection or service obligations over and above those provided under Australian Consumer Law. The Postal Industry Ombudsman can investigate complaints against postal operators, but while Australia Post is a mandatory member of the scheme, membership by other postal operators is voluntary.

Treatment of providers of substitute services

Generally speaking, operators of digital services that substitute for letter services (e.g. email services) have, for various reasons, not been subject to the same types of service and performance obligations as traditional mail operators. However, in many jurisdictions, such as Australia, the UK and the US, specific laws have been passed to deal with consumer issues associated with unsolicited commercial messaging-mail (spam).²³⁴ In short, this new type of service has led to some of its own new consumer protection issues and regulations.

Future viability of USO/CSO and implications for consumer protection

Separate to these specific consumer protection issues, there is increasing recognition of a potential tension between greater competition in postal services and the provision of a minimum standard of quality and service, through the USO.²³⁵ The viability of universal service operators has implications for consumer protection, particularly for certain sub-segments of the community (the elderly, those in rural communities and those with a disability) who may (although will not inevitably) rely more on postal services than other types of users.

The responses of regulators and companies to this issue have differed across jurisdictions.²³⁶ In the UK, Royal Mail has claimed that it is facing increasing competitive pressure, and that its continuing viability is being undermined by cherry picking. A recent UK House of Commons report raised the possibility that the regulator (Ofcom) place General Universal Service conditions on other postal operators to protect the universal service fund. In other jurisdictions the USO obligations themselves have been adapted to deal with

²³² In the UK, for example, the delivery company CityLink collapsed prior to Christmas 2014 (i.e.: a critical time), which led to calls for a greater focus by the regulator on this segment of the market to assess the impact on customers and customer services.

²³³ Particularly as a result of downward pressure on wages and terms and conditions offered to postal staff.

²³⁴ In Australia, legislation requires that senders of emails obtain the consent of a person before sending them a commercial electronic message. Such consent can be express (such as when an individual or organization provides their email address) or inferred (such as through an existing business or other relationship or through conspicuous publication of a work-related electronic address). Businesses must also make it easy for people to unsubscribe from mailing lists.

²³⁵ As the House of Commons committee noted: "*There is a fine balancing act to be set between ensuring that the minimum standards of Universal Service are maintained while encouraging a competitive market in the postal sectors.*" See House of Commons (2015).

²³⁶ Among the options that have been considered are requirements for all postal operators to contribute to a universal service fund or other sharing mechanism, and a direct public subsidy to cover the costs or a franchise bidding model where different operators compete to be the universal service provider.

funding issues.²³⁷ Australia Post has also argued that the issue of the viability of the CSO needs to be re-visited.²³⁸ It has recently applied to the ACCC for approval of a stamp increase as part of which the ACCC will likely examine the scope of the universal service obligation.

4.2.4 Insights for consumer protection arrangements in electricity markets

The approach that has been adopted to the regulation of alternative (entrant) providers of postal services has, generally speaking, been one where they have generally faced different service and performance obligations with respect to quality, coverage or frequency of service to those imposed on the universal service provider. The following insights are of potential relevance for the regulation of electricity markets:

- First, there are concerns that the future viability of traditional incumbent operators is being undermined by new entrants who target their services to the most profitable areas and customer-segments, and are not typically bound by the same consumer protection obligations as the incumbent. In short, there is an argument that traditional operators are being unduly restricted in responding to this competition, and as in electricity, this has led to some calls that the regulatory frameworks be changed to ensure that there is a level playing field.
- Second, and more generally, the rapid decline in the demand for traditional letter services (as a result of digital services) is giving rise to a tension in some jurisdictions between maintaining a minimal level of universal service and competition. In essence, this is similar to the 'death spiral' concerns that are arising in electricity, insofar as questions are being asked about the interaction between increased competition (in the form of onsite generation) and the continuing viability of the universal right to access grid-supplied electricity. In response, in the postal sector, many jurisdictions are currently considering whether all operators should be made to contribute to universal service obligations, or whether the minimal services required under the USO could be more flexibly applied and restricted.
- Third, in both industries, questions are being asked about whether there is a need to ensure that adequate protections are in place to ensure that consumers are protected in the event of the failure of alternative non-traditional suppliers at critical points in time. As discussed, in postal services, concerns have arisen following the collapse of competitive package delivery operators at critical times (such as prior to Christmas), while in electricity similar concerns have been raised about what happens if an alternative non-traditional supplier goes out of business

²³⁷ For example, in New Zealand, the scope of the USO has been reduced to three deliveries a week for the majority of delivery points while maintaining five days a week to certain rural delivery points and PO Boxes, while in Canada, Canada Post has introduced community mailboxes which serve individual neighbourhoods.

²³⁸ Australia Post has also been hit by declining letter volumes which have depressed the profits it makes on its parcel business. In the short-term, Australia Post has responded to reduced profitability by changing its delivery and pricing approach and offering a two-speed letter delivery service: a priority service which delivers according to current delivery standards, and a regular service which offers 1-2 days longer delivery times.

at short-notice in a context where there is no grid connection or supplier of last resort.

- Finally, the entry of new digital services as a competitor to traditional postal services has given rise to new consumer protection issues, for example, in relation to controlling for consumer harm associated with unsolicited spam. This highlights the point that in some cases, new products and services can potentially give rise to new rationales for consumer protection that do not exist for traditional services.

4.3 Air Transport

The air transport industry comprises a mix of regulated activities and competitive activities. In many jurisdictions, air traffic operations and airports remain subject to some form of economic regulatory oversight or monitoring regime or are publicly owned. However, the provision of airline services has progressively been opened up to competition in many parts of the world, including Australia.²³⁹

4.3.1 *New products and services in the airline industry*

Following the introduction of market-opening policies, domestic airline competition has typically been aided by the entry of successive waves of new competitors offering different services. A first wave of entry in many countries involved entrants who offered a similar service to that provided by the incumbent (typically formerly state-owned) legacy operators, adopted similar types of business models based on building a hub-and-spoke type network, and provided similar services (different classes of travel and full meals etc). However, this was followed by a second wave of entry by so called 'low-cost carriers' (LCCs) or budget airlines which focused on: direct point-to-point flights, offered different levels of service,²⁴⁰ applied additional charges for specific services,²⁴¹ adopted alternative pricing structures (such as one-way tickets with no refunds or possibility to change) and operated from less frequented airports.²⁴² In response to this form of entry, some legacy carriers established their own 'no-frills' airlines to compete directly with the new entrants, although most of these initiatives have proven to be short-lived.²⁴³

In the US, where airline competition has the longest history, the benefits of deregulation have been seen to include much lower-fares offered by low-cost carriers, which has placed pressure on legacy airlines, an increased range of price-quality options, and the expansion of services and destinations. Among the disbenefits identified have included deterioration in

²³⁹ Prior to liberalisation, it was typically the case that some fares were regulated, entry controls were in place, and airlines were required to seek regulatory approval to fly any route. Some of these requirements still apply to some international routes where 'open-skies' arrangements have not been negotiated between countries.

²⁴⁰ Such as a standard class of travel, no full meal services, no reserved seating, no frequent flyer programmes and no in-flight entertainment.

²⁴¹ Such as allocated seats, extra baggage, priority boarding or food.

²⁴² Such as Avalon in Victoria, London's Stansted or Luton airports and Frankfurt Hahn rather than the main airport hubs (such as Tullamarine or Heathrow). Examples of major low-cost carrier airlines include Southwest and JetBlue in the United States and Ryanair, EasyJet and Air Berlin in Europe.

²⁴³ For example low-cost carriers established by British Airways, Continental, Delta and United are no longer in operation. Exceptions include JetStar (part of Qantas) and GermanWings (part of Lufthansa).

the average quality of the flying experience, in part because of congestion and delays.²⁴⁴ Overall customer satisfaction with the industry in the US remains low,²⁴⁵ although it should not necessarily be assumed that this low level of customer satisfaction is attributable to LCCs alone.²⁴⁶ In Europe, the assessment has also been that competition has led to cheaper fares and significant route expansion, and allowed many more citizens the ability to travel. However, there have been concerns at times about low standards of service of some LCCs, and 'sharp practices' particularly in relation to online and telephone bookings.²⁴⁷

A specific consumer protection issue in the airline industry, particularly in relation to LCCs, relates to certain pricing practices, particularly so-called 'component' or 'drip' pricing. This is where a headline price is advertised at the start of a booking process to which additional fees and charges (some of which are unavoidable) are added as the booking process continues. In Australia, the ACCC has investigated and launched legal proceedings for such practices.²⁴⁸ Elsewhere in the world, such as in the EU and US, the issue has been dealt with through requirements with respect to information presentation and transparency.²⁴⁹

Another consumer issue in air transport relates to security and continuity of supply - i.e. what happens when an airline goes out of business. As noted, the opening up of aviation markets to competition has often led to large scale entry, followed by a period of consolidation and exit by some airlines. Australia has been no exception to this trend.²⁵⁰ Regulatory responses so far have involved self-regulatory measures. For example, in many cases, stranded passengers are able to access services of other airlines on a voluntary basis, while in 2014, IATA introduced a voluntary agreement to cover the repatriation of passengers in and out of Europe in such circumstances.²⁵¹

4.3.2 Consumer protection framework

As noted, new entrants, particularly LCCs, have sought to differentiate themselves from legacy airlines by offering a different range of products and services, and consumers are seen to benefit from this in terms of lower prices. However, these different product offerings can sometimes involve different passenger rights,²⁵² and this has sometimes also led to an

²⁴⁴ In short, the quality of service for full economy passengers is seen to have deteriorated, but that this was a function of competition and greater choice, and that the preference of the majority for a lower cost and quality service overrode those of a minority who would prefer a higher cost, higher quality service. See Kahn (1988:321).

²⁴⁵ See the results of the American Customer Satisfaction Index (2015), where airlines rate is ranked as the poorest performing private industry (alongside Internet Social Media).

²⁴⁶ Indeed, a recent study concluded that contrary to the commonly-held view, passengers of LCCs were less likely to complain about service quality than passengers of traditional network carriers. This was attributed to factors such as price-based expectations, a lack of information about complaints processes, or differences in front-line quality of service among airlines. See Wittman (2014).

²⁴⁷ See for example the House of Commons Transport Select Committee (2007:8).

²⁴⁸ See ACCC (2014).

²⁴⁹ In the US, airlines can display different components of a price (base fare, taxes and other charges) on print advertisements and websites, but must ensure that the total cost is the most prominent figure. In 2012, the UK the competition authority banned the use of hidden debit and credit payment surcharges by airlines on the basis that they misled consumers.

²⁵⁰ There have been some high profile airline failures in the period since deregulation, including full-scale international airlines such as Ansett and East-West Airlines, as well as low-cost carriers such as Compass Airlines I and II.

²⁵¹ IATA (2014).

²⁵² For example, in relation to the ability to change or alter tickets, refunds or compensation for delays or the imposition of additional charges (for example, not printing out a boarding pass at home).

increase in customer dissatisfaction and complaints, and in some jurisdictions to the introduction of specific additional airline passenger rights over and above those provided under general consumer law.²⁵³ However there has been some criticism of the proliferation of industry specific consumer protection policies around the world in relation to airline passengers on the basis that some regimes create confusion for passengers, reduce interconnectivity and lead to higher fares.²⁵⁴ In short, the balance between customer protection and industry competition has been questioned.

In Australia, there are no specific additional consumer protections for airline passengers over and above the general provisions of the consumer and fair trading laws and any protections agreed internationally.²⁵⁵ However, self-regulatory measures have been introduced by some Australian airlines²⁵⁶ while an Airline Customer Advocate, established by the government and funded by the airline industry, hears customer complaints. Notwithstanding these initiatives, the number of complaints lodged with consumer authorities is claimed to have increased in Australia as a result of the introduction of cheap point-to-point travel,²⁵⁷ particularly in relation to budget airlines.²⁵⁸

4.3.3 *Insights for consumer protection arrangements in electricity markets*

The experience of new entry into the airline industry offers the following potentially relevant insights for electricity markets:

- First, market-opening policies have led to significant entry by operators who offer different price-quality combinations to legacy carriers, and operate different business models. While, generally speaking, the entry of these new players has led to a massive boom in air passenger demand in many parts of the world, issues associated with consumer satisfaction have also emerged. Some argue these issues merely reflect a need for consumers to adapt their expectations to the new business models and services.²⁵⁹ The key insight is that if there is a rise in consumer complaints accompanying the entry of new suppliers – particularly those offering different levels of service – this may reflect the fact consumer expectations need to be adjusted to the new offerings. For example, in the electricity context, consumers may need to adjust to the fact that greater reliance on onsite generation increases the risk of interruption of service, but it may

²⁵³ In the United States, various laws and regulations require airlines, among other things, to reimburse passengers for lost bags, provide consumers involuntarily bumped from flights with greater compensation and to disclose ancillary and hidden fees. In Europe, passengers have acquired various rights in relation to delays, cancellation and overbooking, including financial compensation and there are additional rights for people with disability or reduced mobility. EU Member States can also apply their own consumer protection requirements under their consumer protection regime. For an overview of the rights in different countries see:

ICAO (2013b).

²⁵⁴ See IATA (2015).

²⁵⁵ See ICAO (2013a).

²⁵⁶ For example, customer charters that set out service commitments and complaints handling processes.

²⁵⁷ See Western Australian Department of Commerce (2014).

²⁵⁸ See for example recent reports on the performance of TigerAir, see Sydney Morning Herald (2015b).

²⁵⁹ As Justice Stephen Breyer, one of those responsible for the passing of the original US Airline Deregulation Act of 1978, recently put it: “So we sit in crowded planes, munch potato chips, flare up when the loudspeaker announces yet another flight delay. But how many now will vote to go back to the “good old days” of paying high, regulated prices for better service?” See Breyer (2011).

nevertheless come with certain other benefits, particularly reductions in price (i.e.: they are agreeing to a different price/quality combination).

- Second, a number of countries (although not Australia) have introduced a set of specific consumer rights for air passengers in response to consumer protection issues (for example, rights of consumers in respect of delay or cancellation). Critically, these rights rest with the passenger, and are not specific to particular airlines. In short, consumers are made aware of their rights if something goes wrong, and are encouraged to exercise those rights irrespective of the airline that they fly.
- Third, some consumer protection issues – such as the handling of complaints and the financial collapse of airlines – have been dealt with through voluntary or self-regulatory initiatives. That is, specific consumer protection solutions have been developed voluntarily by industry in some jurisdictions to address these issues, such as ensuring continuity of supply for those customers who are left stranded by the financial collapse of a supplier/service provider.

4.4 Taxis and private transportation

4.4.1 New products and services

Another area of transport where entry by new players is significantly impacting traditional supply structures is in private transportation, where competition to traditional taxi services is emerging from ‘ride-sharing’ platform operators. Prominent among these entrants are Uber, Lyft and Sidecar but other providers of such services are also entering the space in different countries. Ride-sharing services use a different supply model to traditional taxi services and involve private vehicles being driven by any driver who has registered with the platform provider. Customers can locate and book the closest car through an App on their phone or tablet, and payment is cashless (by debit or credit card) and handled by the ridesharing operator not the driver. The charging basis can differ across cities, with some fares being based on distance, others based on time. After a journey, customers and drivers can rate each other on the basis of indicators such as courtesy, behavior and effectiveness and drivers with low ratings are typically not allowed to continue on the platform.

4.4.2 Consumer protection framework

The entry of such operators is seen as highly disruptive to traditional taxi services, which involve licensed operators who must comply with certain required character and other checks. For example, in some jurisdictions, including states of Australia, licensed taxi operators are subject to a number of requirements intended to protect the consumer,²⁶⁰ and passengers have specific ‘rights’ including a right to: a licensed and accredited driver; a preferred route; access to view the metered fare; a clean and roadworthy cab; air

²⁶⁰ For example, in Victoria, taxis are licensed and, following recent changes, subject to oversight by the Taxi Services Commission.

conditioning; no music or conversation; carry assistance animals; refuse multiple hirings; pay with certain payment methods; and receive a receipt.²⁶¹

Traditional licensed taxi operators have protested against the emergence of this new service model on a number of bases. First they argue the public is placed at risk because drivers and their vehicles are not subject to the same degree of scrutiny and regulation as licensed taxi drivers. Second, it is argued that such ride sharing platforms avoid certain regulatory requirements – such as various insurance and worker entitlements. Finally, the pricing practices of some ride-sharing platforms has been criticised, particularly so-called surge pricing; a practice of responsive-pricing whereby the price of a journey responds to changes in supply and demand in the market.²⁶² This pricing approach differs to the generally non-market responsive pricing approaches adopted by traditional taxi services.

The emergence of ride-sharing providers has led to very different policy and regulatory responses across jurisdictions. In Australia, despite the fact that such ride-sharing services are reportedly widely used in most Australian cities, they are illegal in a number of states and are the subject of driver accreditation negotiations with government in others. Nevertheless, this may change following the recent Australian Competition Policy Review, which recommended that taxis and ridesharing be priority areas for regulatory review on the basis that regulation of the taxi industry had raised costs for consumers, including elderly and disadvantaged customers, and hindered innovation.²⁶³

Elsewhere in the world, ridesharing services such as Uber have also been controversial, and have been reportedly banned, fined, subject to investigation or court proceedings in the following countries: Belgium, Brazil, Denmark, France, Germany, India, New Zealand, the Netherlands, Philippines, South Africa, Spain, Taiwan, and Thailand. In the United States, some state PUCs,²⁶⁴ have entered into agreements with Uber and other ride sharing services (known as ‘Transportation Network Companies’) which allow these services to operate subject to fulfilling certain requirements such as: criminal background checks; driver training programs; car inspections; insurance and driving licence checks.²⁶⁵ However, investigations are continuing into the question of the impacts of these services on public safety and consumer protection.²⁶⁶ In July 2015, the California PUC fined Uber \$7.3 million for failing to comply with its reporting requirements, which included among other things: a failure to provide information about the number of customers who requested accessible vehicles, and how often it complied with these requests; the number of rides that were requested but not accepted; and the cause of each driving incident involving a driver.²⁶⁷

²⁶¹ See Taxi Services Commission (2015).

²⁶² That is, consumers can pay higher prices for a particular journey during peak periods, although the practice also is seen as signaling a need for additional drivers during these periods.

²⁶³ See Competition Policy Review (2015: Chp 10).

²⁶⁴ Most notably the California Public Utility Commission (CPUC).

²⁶⁵ In reaching this decision, the CPUC made the observation that Transportation Network Companies (TNCs) are a ‘nascent industry’ but that innovation did not alter its obligation to protect public safety. See CPUC (2013b:3).

²⁶⁶ In April 2015, the CPUC appointed a Commissioner and Administrative Law Judge to commence a second phase of investigation to address a series of questions about TNCs, including their impacts on public safety and consumer protection, and how to encourage innovation. See CPUC (2015a).

²⁶⁷ CPUC (2015c).

4.4.3 *Insights for consumer protection arrangements in electricity markets*

Notwithstanding the rapid growth in ridesharing services,²⁶⁸ the regulatory approach to new ridesharing products and services is still unsettled in many parts of the world. Some jurisdictions have banned the new services outright, others have sought to allow the services subject to satisfying various consumer and public protection requirements, while other jurisdictions are considering the regulatory implications of these services. As in the electricity industry, there is a widespread recognition by many commentators that regulation should not unnecessarily impede and forestall innovation in this area because such innovation may bring substantial benefits to consumers.²⁶⁹ However, striking the appropriate balance between innovation, consumer protection and the potential implications of the demise of the traditional taxi service is one which is under consideration and debate in many countries.

A related insight involves the consumer response to the new pricing practices that have been introduced – such as responsive (or surge) pricing – where prices respond to underlying market conditions. As noted there have been some complaints about this pricing approach by consumers who are familiar with the fixed, non-responsive tariff approaches of traditional taxi operators. This experience of consumer difficulty in adapting to market based pricing is potentially relevant in a context of a shift towards more responsive pricing for electricity.

4.5 Gas

In many jurisdictions, policies directed at opening up gas retail markets to competition were introduced at roughly the same time as those which introduced competition in retail electricity. However, the developments being seen in the electricity industry, such as the entry of new business products and services, are not generally being seen to the same extent in the gas market. This potentially reflects a number of factors, such as: the more limited household demand for gas than electricity in some countries (with gas being used mainly for heating and cooking purposes); an absence of policy initiatives and specific incentives focused on the development of alternative smaller scale gas facilities; and, perhaps most critically, the fact that it is not generally possible for consumers to extract and self-supply gas at a localized level (as it is, for example, in respect of onsite distributed generation). It also reflects the fact that significant shale gas reserves have been found in many parts of the world, including in the USA, Australia, and Europe, which has led to substantial falls in the price of mains-supplied gas.

There are various sources of non-mains supplied gas available in many jurisdictions, including Liquefied Petroleum Gas (LPG), Compressed Natural Gas (CNG) or Liquefied Natural Gas (LNG). These alternative gas sources tend to be used for a range of different purposes including cooking, heating and transportation. In most jurisdictions, including Australia, it is not unusual for a proportion of the population to not be connected to a mains gas grid which means that they need to source gas from alternative suppliers.

²⁶⁸ It is estimated that Uber now operates in 57 countries and is valued at \$40 USD billion.

²⁶⁹ See for example Heimler (2015).

4.5.1 *New products and services*

Notwithstanding the more limited development of new products and services in the gas market, there are some activities in the gas supply chain where non-traditional products and services are being introduced or gaining market presence. This includes energy efficiency services and products, such as more efficient condensing gas boilers for heating, as well as small scale bio-natural gas operations.²⁷⁰ A 2014 study identified various new gas applications, or markets for new services, as either commercially available or the verge of becoming so.²⁷¹ Among these:

- the supply of compressed natural gas (CNG) and liquefied natural gas (LNG) to final consumers in remote regions via ‘virtual pipelines’ (where gas is transported by road, rail or sea using trucks or other vessels);
- an increase of the use of gas in land transport; and the potential uptake of gas as an environmentally friendly fuel in water transport;
- the use of gas as a storage mechanism for renewable energy.

A relevant development identified in the study was the potential use of excess electricity – such as curtailed renewable energy and excess energy from system imbalances – to produce hydrogen and/or synthetic gas that could be injected into the natural gas system. This technology, known as ‘power to gas’ is currently being piloted, particularly in Germany. According to the study, the future commercial application is based on the exploitation of curtailed renewable energy, and also as a potential balancing tool for system operators.²⁷² The study considers the regulatory implications of each of these new developments. Among the most significant of its recommendations for current purposes are that CNG/LNG supplies are treated in the market under the same terms as piped gas, and that operators of local distribution networks which are supplied with CNG virtual pipelines develop network codes that provide clear and detailed rules for the dispatching of CNG by several suppliers.

4.5.2 *Consumer protection framework*

Retail competitors in the supply of gas through mains networks tend to be regulated in a similar way to traditional integrated suppliers of retail gas in many parts of the world. Suppliers of non-mains gas services tend to face different regulatory requirements across jurisdictions, and in some jurisdictions, alternative sources and suppliers of gas are subject to retail price regulations.²⁷³ However, in many other jurisdictions, alternative non-mains gas supply services are typically not subject to specific consumer protection or economic regulations, or are subject to voluntary commitments. In Australia, for example, automotive

²⁷⁰ Bio-natural gas, or renewable gas, is produced from biomass and is seen by some as potentially important renewable fuel source in the future to complement, or potentially even compete with, renewable wind and solar power.

²⁷¹ See Kantor (2014).

²⁷² It is noted that the commercial launch date for a 1000 MW power to gas facility is expected to be 2022.

²⁷³ For example, in South Africa, the government sets maximum prices for Liquefied Petroleum Gas (LPG), while in Pakistan the government has, in the past, proposed to regulate LPG in response to increasing prices.

LPG prices are deregulated, although some states have in place a voluntary code for the sale of retail LPG delivered to a customer's premises.²⁷⁴

One relevant issue given the non-universal coverage of gas mains networks is how suppliers treat consumers who are 'off-grid'. The example of the UK is instructive in this regard as some 15% of customers are estimated to lie off the mains gas grid and rely on other fuel sources, including LPG. According to some estimates, the cost of heating a house with LPG is 100% higher than it is with a mains gas service, however, because these customers are typically 'off-grid' they have limited substitution possibilities. Notwithstanding the fact that fuel poverty is higher among off-grid consumers than on-grid consumers,²⁷⁵ the off-grid gas market in the UK is not subject to any sector specific regulations (the protections provided under EC Directives and other regulations relating to retail gas only cover the on-grid market), and is therefore only regulated under general consumer protection and competition law. This has given rise to some competition and consumer protection concerns in the past.

For example, a 2004-06 investigation into the domestic bulk gas LPG market found that the existing supply arrangements had an adverse effect on competition in the supply of domestic bulk LPG.²⁷⁶ Among other things, it found that: suppliers imposed contractual restrictions on switching; some customers suffered from a lack of information about their ability to switch supplier and of alternative suppliers; suppliers did not offer sufficient information in advance about customers' liability for switching charges; and that customers found it difficult to assess which supplier would be most competitive over the whole life of the supply arrangement (thus reducing their incentive to seek out alternative price quotations). The investigation also found that there was a widespread practice of installing, and then removing, tanks when a customer switched suppliers, which raised costs.²⁷⁷ A subsequent 2010 market study by the competition regulator into 'off-grid energy', which again included the off-grid gas market,²⁷⁸ identified some complaints about contract terms for bulk LPG, including limited termination rights in the face of increasing prices during a two year lock-in period. A related concern in this respect was that some customers were offered low, but temporary, rates to entice them to switch supplier. A more recent review identified the following more general concerns with the off-grid sector: that off-grid suppliers are not licensed; that they offer a limited range of tariffs and payment methods; that there is no requirement on such suppliers to maintain a register of vulnerable consumers; that there are no obligations to provide support to indebted consumers, and that there are limited obligations on off-grid suppliers to introduce renewable or energy efficiency measures.²⁷⁹

In short, concerns have been expressed that a number of the consumer protections that apply to mains gas supply services do not exist for off-grid services, and that this may be

²⁷⁴ For example, in Victoria the code sets out various terms and conditions of supply to consumers, and provides a process for the resolution of disputes.

²⁷⁵ Estimates suggest some 53% of households with LPG heating were in fuel poverty in 2008. See GHK (2011).

²⁷⁶ Competition Commission (2006).

²⁷⁷ The remedies introduced by the Competition Commission to address these problems included: measures to standardize and improve information on the switching process, changes to customer contracts (including notice periods, and a cap of two years on any exclusivity requirements) and measures to improve the provision of information to customer about suppliers and their offers.

²⁷⁸ OFT (2011).

²⁷⁹ See GHK (2011).

harming some consumers, particularly vulnerable consumers (which is significant given the high levels of fuel poverty). In March 2015, the British regulator set out proposals to encourage gas network operators to connect more customers to the gas grid to address issues associated with fuel poverty.²⁸⁰

4.5.3 Insights for consumer protection arrangements in electricity markets

Although the potential opportunities for, and impacts of, new products and services in the gas supply chain is arguably not as significant as it is in electricity, in terms of consumer protection issues, the approach to the regulation and oversight of the non-mains gas supply market is potentially instructive insofar as it highlights some of the issues that can arise when consumers are not connected to a mains network. Of particular interest in this respect is the experience of the UK, where off-grid suppliers have been the subject of two investigations by competition authorities over the past decade, one of which found that there was an adverse effect on competition and that consumers, particularly fuel poor consumers, were being harmed by the supply arrangements.

4.6 Water and wastewater

Although the majority of urban customers of water and wastewater companies in the developed world receive services through a monopoly-operated mains system of water distribution and wastewater collection, there are some activities in the value chain where alternative forms of supply of these services exist, and where activities have been opened to competition. As is the case in the electricity industry, the potential scope for innovative approaches to water abstraction and distribution is likely to become an increasingly important policy issue in the future in response to expected changes in the climate (which could increase the potential for water shortages and droughts) and greater levels of urbanisation in many parts of the world.

4.6.1 Water: regulation of off-grid supply

In many parts of the world, including in developed countries such as Australia and the US, the coverage of a water distribution system is not universal, and some users are not connected to a public (mains) water system and need to store and collect water from other sources.²⁸¹ Consequently, although water is perhaps the most ‘essential’ of essential services, the concept of ‘universal service’ is often qualified in the context of water supply, and it is generally recognised that some customers will always be ‘off-grid’.²⁸²

²⁸⁰ Ofgem (2015b).

²⁸¹ In Australia it is estimated that some 16% of households outside capital cities are not connected to mains or town water, while in the US it has been estimated that some 15% of Americans rely on their own private drinking water supplies. This may reflect the fact that the distribution costs associated with the transportation of water and wastewater represent a high proportion of the final end-user prices, and contrasts with the situation in other network industries such as electricity, where the costs associated with transportation tend to be a small component of the overall costs of supply.

²⁸² It is often claimed that it is private water vendors provide an invaluable service to a large proportion of the world’s urban poor, who tend to live on the fringes of the mains supply networks.

In Australia, alternative sources of water supply include self-supply options such as the purchase of bottled water for drinking; rainwater captured in cisterns or storage tanks; the recycling of wastewater to produce 'grey' water; and abstraction from bore holes or wells located on a customer's premises.²⁸³ In terms of drinking water, in 2010, around 82% of households obtained supplies from mains/town water, 9.8% of households relied on water from rainwater tanks, and 6.6% of households relied on purchased bottled water.²⁸⁴

There are other ways water can be supplied to those not directly connected to the mains water supply. This includes private independent water service providers, who obtain water from their own boreholes and then distribute the water through their own pipes, or water carters, to supply points. A common form of alternative service provision is the bulk carting of potable water to customers who are not connected to the public water supply.²⁸⁵ While water carting of this type might be seen as a relatively fringe activity, there are some who argue that it may become more significant if the climate changes and droughts become more frequent. Moreover, this form of supply is increasingly seen as a parallel service to that provided by public water supply companies, by servicing areas where the piped network does not reach or is deteriorated to such a level that the quality of the water is poor.

In many parts of the developing world, these alternative suppliers are typically unregulated. However, in developed countries such as Australia, state government public health departments place strict quality and safety requirements on the loading, transporting and delivery of water. In addition the costs of servicing these off-mains areas can be subsidised.²⁸⁶ Aside from the requirements in relation to quality and safety imposed by public health authorities, alternative water suppliers – such as water carters – are not typically subject to specific consumer protection requirements over and above those contained in general competition law and consumer law. This contrasts with the special consumer protection regime which applies to some traditional water businesses who operate geographic monopolies.²⁸⁷

In response to prolonged drought conditions, an emerging activity in some jurisdictions, including Australia, is water trading. The ability of water rights holders to buy and sell excess water entitlements in periods of water scarcity or drought has led to the entry of water intermediaries, such as water brokers and exchanges. These water intermediaries can serve an important function in terms of reducing search costs and improving information flows,

²⁸³ The number of households using rainwater as a source of water is reportedly increasing with grey water also a popular source of water (particularly for households in Victoria, South Australia and the ACT with over 30% of houses using this source) as is purchased water. See ABS (2010).

²⁸⁴ See ABS (2010).

²⁸⁵ Water carting of this type is common in many rural and semi-rural parts of Australia (such as the Adelaide Hills). Some studies estimate that the costs of carted water can be over 30 times higher than the cost of the delivery of mains water to Australian cities and towns. Supplies of this sort often augment shortages in supply in rainwater which is captured in rainwater tanks.

²⁸⁶ In NSW, for example, the state government is subsidising water carting to some customers not connected to town water supplies as a result of drought which has left rainwater tanks dry and reduced the water quality of rivers.

²⁸⁷ In Victoria, a set of Codes and Guidelines sets minimum standards relating to quality, billing, complaints handling and information provision. In NSW, the licenses of two of the four government water utilities, contain a Customer Contract which sets out minimum customer service standards and the rights and obligations of customers. In addition, private corporations who wish to construct, maintain or operate any water industry infrastructure to supply water (potable or non-potable) must be licensed.

which can lower overall transaction costs, however in Australia there has been some concerns over potential misconduct by water intermediaries. Although no industry or activity specific rules apply to water intermediaries – they are governed by the general provisions of the Australian Consumer Law – the ACCC has published guidance notes for consumers setting out their fair trading rights, and for water brokers and exchanges setting out their fair trading obligations.²⁸⁸ The guidelines are insightful as they give a series of industry-related examples of what conduct might be considered to be misleading or deceptive, or unconscionable and what might constitute harassment and coercion, where the Consumer Law is applied in this context. In short, regulatory measures in this area have been advisory and educative rather than mandatory.

4.6.2 *Wastewater*

As is the case with water networks, not all consumers are connected to a wastewater network, so that, even in developed countries, there is no universal service requirement placed on companies to serve all consumers regardless of location.²⁸⁹ In developed countries, such as Australia, customers not connected to a mains wastewater system tend to install a septic tank which tends to be emptied periodically for a fee. As is the case with alternative non-mains water suppliers, suppliers of off-grid wastewater services tend to not be subject to any specific consumer protection obligations over and above those contained in general competition law and consumer law, and various public health requirements.

4.6.3 *Insights for consumer protection arrangements in electricity markets*

There are three potentially relevant insights from the water and wastewater industry for the purposes of this paper:

- First, notwithstanding the ‘essentiality’ of water, the concept of universal service is generally qualified in the water industry by virtue of the costs associated with servicing sparsely populated geographical areas. As such, an increasing minority of consumers in countries such as Australia obtain access to water and wastewater services ‘off-grid’, through rainwater tanks or other forms of self-supply. This provides an interesting comparator point for off-grid consumers of electricity insofar as it provides an example of an essential service which is not universally supplied to all citizens, and where, as a result, some consumers who are off-grid do not have the same consumer protections as those who are on-grid.
- Second, in recognition of the fact that the prospects for retail competition for households and SMEs are limited in most jurisdictions, the elements of the consumer protection framework in the water industry differ from those applied in utility industries, like electricity, where full retail competition has been introduced. In particular, measures designed to inform consumers of the risks of the new

²⁸⁸ See ACCC (2011a) and ACCC (2011b).

²⁸⁹ In the developing world, in particular, the informal sanitation sector is often larger than the informal water sector as a result of the poor state of sewerage systems in many cities. Consequently many urban poor use pit latrines or rivers to drain their wastewater.

market context or encourage search switching and consumer education are not relevant. However, given the essential nature of the service and the fact that it is being supplied by a monopoly, some additional consumer protection sometimes exist which focus on issues associated with quality, allow consumers to understand how their bill has been calculated, and requires suppliers to have complaints handling processes in place.

- Third, suppliers of alternative water and wastewater services – including third-party brokers and intermediaries – tend to be subject to standard competition and consumer laws when it comes to the terms and conditions of supply, and are not generally subject to additional activity or sector-specific consumer protection requirements (although they are subject to strict health laws). In addition, where concerns have arisen, such as in relation to water intermediaries, the approach has been towards regulatory guidance for suppliers and consumers, rather than any mandatory regime.

4.7 Peer-to-peer platforms and the sharing economy

A final area where new products and services are disrupting existing supply processes, and where concerns about consumer protection are being balanced against a desire not to hinder beneficial innovation and entry is in relation to so-called ‘sharing economy’ platforms or online ‘peer-to-peer’ business platforms. In a nutshell, sharing economy platforms create virtual marketplaces where many buyers and sellers can interact with one another and trade.

The emergence of these platforms has led to new business models emerging in industries that are traditionally subject to specific forms of regulation or oversight. An example already discussed is that of ride-sharing platforms such as Uber, while other examples include accommodation platforms such as Airbnb and online trading platforms such as Ebay.²⁹⁰ Peer-to-peer platforms are also emerging in the electricity industry in some parts of the world. In the Netherlands, the company Vandebron, uses an online platform to allow consumers to purchase electricity directly from independent producers, such as farmers who have wind turbines. Suppliers such as farms maintain a profile on the online platform and this provides access to potentially hundreds and thousands of consumers. A similar peer-to-peer energy marketplace, Openutility, is being piloted in the UK with the aim of allowing generators to sell their electricity directly to local consumers. It is typically the case that although the transaction can be conducted through the online platform, the transmission of electricity is still required across the grid network.

The emergence of online sharing platforms is generally considered to be a beneficial development which can encourage more efficient use of assets (by utilizing spare rooms or idle cars), reduce transaction costs and bring substantial benefits to consumers in terms of convenience and by the better matching of suppliers with consumers with specific

²⁹⁰ Other examples include bike-sharing platforms, car-sharing platforms, finance platforms (such as crowdfunding or peer-to-peer lending), and property sharing platforms (such as home exchanges or shared office/working spaces).

preferences. A number of these sharing platforms – such as Uber, Airbnb and Ebay – have developed their own rating mechanisms relating to the quality of service. For example, as noted above, users of Uber are able to rate the performance of drivers, and poor performers can be dropped from the platform.²⁹¹ The ratings systems are to promote informed decisions by consumers.

However, the adequacy of consumer protection in relation to these platforms has been debated, particularly as users of these platforms tend to be individuals or smaller suppliers who have only limited information about the other party. In particular, questions have been raised about whether consumer protections designed for conventional suppliers in some areas – such as for taxis (see above), hotels or retail electricity supply – should also be applied to these online platforms. In the US, the Federal Trade Commission (FTC) has recently launched a consultation to consider the consumer protection and economic issues associated by the sharing economy, noting that the substantial increase in the number of transactions on sharing platforms raises both the commercial importance of these suppliers and the potential for consumer injury.²⁹² Nevertheless, the FTC has recognized the potential ‘mismatch’ between existing regulation and online platform operators, and the need to tailor the regulations so as to not be disproportionate and discourage innovation and entry. The European Commission, while recognising the potential benefits of the sharing economy, has also noted instances of misleading commercial practices associated with pricing practices in these areas and has acknowledged consumer uncertainties about the extent of liability of the intermediary.²⁹³

4.8 Summary

New services and products are challenging traditional services, and calling into question consumer protection arrangements, across a number of regulated industries and activities. Among the most relevant insights for electricity markets from the different industries and activities surveyed in this section are:

- In telecommunications, some of the consumer protection issues arising for OTT services are similar to those associated with the emergence of new products and services in electricity markets (for example, issues related to levels of consumer awareness of different quality of service levels; and whether there is a need for informed consent policies for those customers who choose to take particular risks with a new type of service). In deciding whether to apply the regulatory framework to these new products and services, some jurisdictions have sought to draw distinctions between different types of services; particularly on the basis of whether or not they interconnect with a traditional network or not, which has led to a situation where similar types of services are subject to differential regulations depending on whether or not they connect to a traditional network or not. Concerns have arisen that the asymmetric treatment of services may be deterring innovation and creating an

²⁹¹ This is akin to a form of delegated exclusion which exists more generally as a means of weeding out poor performing suppliers in an industry/sector. See Tirole (1996)

²⁹² See Federal Trade Commission (2015).

²⁹³ European Parliament (2014:14).

uneven playing field, and there is increasing appreciation of a need in the EU, the US, and Australia to develop policy in this area. In this respect, one important insight from the telecoms experience is that the regulatory impact of the new products and services can be two-way – that is, they impact not only on new providers of services but also on the rationale for the continuing regulation of traditional operators.

- In the postal service markets across a number of jurisdictions, questions are being asked about the future viability of traditional operators in a context where new entrants are not typically bound by the same consumer protection obligations as the incumbent, and are targeting their services to the most profitable areas and customer-segments. A particular concern in some postal markets, is the implications that a further rapid decline in the demand for traditional letter services (as a result of digital services) will have on maintaining a minimal level of universal service, and who bears the costs of this universal service obligations (a concern similar to the 'death spiral' concerns arising in electricity). This is leading some countries to re-examine the scope, and financing of, universal service arrangements, and in particular, to consider whether a wider set of suppliers should contribute to the financing of the universal service obligations.
- Market-opening policies in the airline industry has led to significant entry by operators with different price-quality combinations, and who operate different business models. Generally speaking, this has led to a massive increase in air passenger demand, although issues associated with consumer satisfaction have also emerged. Some argue these issues merely reflect a need for consumers to adapt their expectations to the new business models and services. However, a number of countries (although not Australia) have introduced a set of consumer rights for air passengers in response to consumer protection issues (for example, rights in respect of delay or cancellation). Critically, these rights rest with the passenger, and are not specific to particular airlines. Another insight of relevance is that, in some cases, consumer protection solutions have been developed voluntarily by industry to address specific issues, such as ensuring continuity of supply for those customers who are left stranded by the financial collapse of an airline.
- Although the potential opportunities for, and impacts of, new products and services in the gas and water and wastewater sectors is arguably not as apparent as it is in electricity, in terms of consumer protection issues, the approach to the regulation and oversight of the non-mains supplied market is potentially instructive in both cases. In many countries, off-grid gas suppliers are not regulated in a similar way to main gas suppliers, and this has given rise to investigations by competition authorities in some places (notably Britain). Similarly, notwithstanding the 'essentiality' of water, an increasing minority of consumers in countries such as Australia obtain access to water and wastewater services 'off-grid', through rainwater (or septic) tanks or other forms of self-supply. In short, both sectors are examples of 'essential services' which are not universally supplied to all citizens, and where as a result some consumers who are off-grid do not have the same consumer protections as though who are on-grid. Where concerns have arisen the approach has often been towards regulatory guidance for suppliers and consumers rather than mandatory measures.

- Finally, policymakers in a number of jurisdictions are examining the appropriate balance between consumer protection and innovation/competition in relation to 'sharing economy' platforms (such as Uber, Airbnb etc). While the emergence of online sharing platforms is generally considered to be a beneficial development (it can encourage more efficient use of assets, reduce transaction costs and bring substantial convenience benefits to consumers), it can also potentially give rise to new consumer risks. The regulatory responses to these new services has varied significantly across services and jurisdictions: some new services (such as ride-sharing services) are banned outright in some jurisdictions, others have sought to allow the services subject to satisfying various consumer and public protection requirements, while other jurisdictions are considering the regulatory implications of these services. Some regulators are concerned about a potential 'mismatch' between existing regulation and online platform operators, and recognise a need to tailor regulation so as to not be disproportionate and discourage innovation and entry.

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