

Non-traditional business models: Supporting transformative change in the energy market

Summary of responses to discussion paper

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Overview:

When we published our discussion paper on 25 February 2015, we wanted to start a discussion with stakeholders about the wave of new non-traditional business models entering the market. We asked for your help in building an evidence base on the drivers and transformative potential of these models, and any risks and benefits they may bring for consumers. We were also interested in understanding any regulatory barriers.

We are pleased that such a diverse range of interested parties have taken the time to respond. This paper summarises the responses.

We have grouped them into two transformative themes: new models of flexibility in a changing energy system and local energy; and two cross-cutting themes: enabling innovation, and consumer protection and service.

There are strong links between this and other Ofgem work areas, in particular with our work on flexibility and future retail regulation.

We will publish our next steps by the end of the year.

If you have any queries about please get in touch at sustainable.energy@ofgem.gov.uk.

Contents

Contents	2
Executive summary	3
1. Introduction	5
2. NTBMs: definition, drivers and characteristics	7
Drivers	8
Characteristics of NTBMs	8
3. Summary of the transformative potential of NTBMs	10
Themes from responses	11
4. Transformative theme one – new models of flexibility in a changing energy system	13
Potential benefits	13
Challenges, risks and issues	13
Suggested measures	16
Next steps on flexibility	17
5. Transformative theme two – local energy	19
Potential benefits	20
Challenges, risks and issues	21
Suggested measures	24
6. Cross-cutting theme one - enabling diversity and innovation	27
Potential benefits	28
Challenges, risks and issues	29
Suggested measures	30
7. Cross-cutting theme two - consumer protection and service	32
Potential benefits of NTBMs for consumers	32
Potential challenges, risks and issues of NTBMs for consumers	33
8. Links with other Ofgem work areas	35
Flexibility	35
Quicker and more efficient connections project	36
Future retail regulation project	37
9. Next steps	38
10. Annex 1 – Questions from the discussion paper	39
11. Annex 2 – Glossary of key terms	40

Executive summary

Earlier this year, we published a discussion paper asking for your views on the transformative potential of non-traditional business models (NTBMs), and the challenges, risks and opportunities of their development and growth. We are grateful that many of you took the time to respond. This document summarises your responses.

Many of you told us that NTBMs have the potential to transform the energy system. They increase competitive pressure, unlock more value for consumers, drive improved consumer engagement, and enhance system resilience. Many of you said NTBMs can deliver desirable consumer outcomes. They can lower bills, reduce environmental impact, and improve services.

Many of the issues you raised are common to other work going on in Ofgem, in particular in the areas of flexibility, grid connections and future retail regulation.

We have identified two transformative themes, and two cross-cutting themes from your responses.

The transformative themes are:

1. New models of flexibility in a changing energy system

Many of you indicated that NTBMs are well placed to help consumers and communities engage with the changing energy system. They could unlock benefits of embedded generation, demand-side response and storage. However, you told us that NTBMs wishing to provide flexibility services cannot reach their full potential under current regulatory arrangements. You raised a range of concerns related to the installation and use of these sources of flexibility, and the market signals that support the provision of flexibility in the system.

Ofgem is taking forward work on flexibility in a number of priority areas relating to these issues.

2. Local energy

Many of you also expressed a desire to develop localised energy solutions, particularly local supply. You stated the drivers for developing localised energy solutions include the low-carbon transition, consumers' disengagement with energy markets and their desire for better services, and to better realise the social and economic benefits of energy for communities. Issues around heat, particularly heat networks, were also raised.

Many NTBMs told us that retail market policy relating to switching and tariffs and the national nature of supply licensing, balancing and settlement are key regulatory issues for you. You told us that the regulatory system should be reviewed so it can better accommodate local energy undertakings.

The cross-cutting themes are:

1. Enabling diversity and innovation

The majority of you commented that regulation needs to become more flexible and agile to accommodate, respond to and enable energy system change. Many of you argued that the status quo is maintained by the current regulatory regime, which is complex and prescriptive, stifles innovation and more suited to larger participants. Many of you suggested that regulatory changes including an increased reliance on principles, less burdensome regulation, and bespoke regulation could improve the situation for NTBMs and consumers.

Many of you told us that the current regulatory framework doesn't offer the flexibility to develop and trial innovative business models and, therefore, to demonstrate the impact of NTBM approaches. You have asked for an 'innovation space' within the regulatory framework to trial your business models and demonstrate your impacts.

2. Consumer protection and service

You identified consumer protection and service benefits as a key cross-cutting issue. While NTBMs may have consumer benefits, some of you highlighted potential consumer risks such as data misuse, the emergence of new local monopolies, increased market complexity and system instability. Some of you also mentioned that consumers might want a bigger say in the kind of protections available to them. While this might allow for more service differentiation and competitive pressure, others cautioned against establishing a potentially multi-tiered regulatory framework, citing the need for a consistent and level playing field.

Many of you told us that enabling the growth of NTBMs will have implications for consumers, both positive and negative. You told us we should consider these risks and opportunities when developing options for regulatory change.

The vast majority of you said that regulation needs to become more flexible and agile to enable NTBMs. It needs to accommodate, respond to and enable energy system change. We already have a number of projects underway examining elements of this change. In light of your responses we are considering whether we should examine these issues in the context of our wider work on regulation and future energy system arrangements.

With this in mind, we are considering where our efforts are best focused next, and will publish a proposed course of action by the end of the year.

1. Introduction

1.1. This is a summary of the responses we received to our non-traditional business models (NTBMs) discussion paper published on 25 February 2015¹.

1.2. The paper asked for your views on what's driving a wave of new entrants using NTBMs into the energy market. The reason we wanted to start a discussion with stakeholders about NTBMs was to better understand if and how they could transform the energy system. In particular, we wanted to understand if they can produce positive outcomes for consumers, in line with those in Ofgem's Corporate Strategy²: lower bills, lower environmental impact, improved reliability and safety, better quality of service, and better social outcomes.

1.3. We also said that this represents the start of a longer term engagement on these issues. We want to better understand how best to support and encourage innovative business models, while promoting fairness, protecting consumer rights and keeping consumer bills low.

1.4. Our paper asked for your help to build the evidence base that will help us better predict potential developments and their implications for the regulatory framework. This will help us act in the interests of existing and future consumers. We have summarised the questions from our discussion paper at Annex 1.

1.5. We are pleased that a wide range and number of stakeholders, including traditional market participants and new and prospective entrants, chose to respond. A number of you commented on how timely this work is. During the consultation period, we engaged with many people via workshops, conferences, bilateral meetings and social media. By our deadline of 20 May 2015 we received 59 formal written responses. We have published the non-confidential responses and the minutes of our stakeholder workshops on our website alongside this summary of responses³.

1.6. Stakeholders told us that evidence on the benefits, risks and impacts of NTBMs is scarce because the current regulatory framework doesn't offer the flexibility for them to demonstrate their potential.

1.7. This paper summarises responses. In particular, it addresses:

- The definition of NTBMs.
- The transformative potential of NTBMs.
- The key themes emerging from responses.

¹ 'Non-traditional business models' discussion paper, Ofgem: <https://www.ofgem.gov.uk/ofgem-publications/93586/non-traditionalbusinessmodelsdiscussionpaper-pdf>

² Ofgem Corporate Strategy: <https://www.ofgem.gov.uk/publications-and-updates/corporate-strategy>

³ Notes from NTBM workshops: <https://www.ofgem.gov.uk/publications-and-updates/non-traditional-business-models-workshops>



Non-traditional business models: Supporting transformative change in the energy market

- Links with other Ofgem work areas.
- Next steps.

2. NTBMs: definition, drivers and characteristics

2.1. We proposed a definition of NTBMs in our discussion paper⁴ to kickstart the conversation. This is below, and has been slightly amended to improve its clarity. NTBMs are:

Business models⁵ offering new products or services, or new ways of delivering these, that are different to those traditionally provided in the existing energy market. Those offering such services have diverse motivations (technological, financial, social and environmental) and ownership arrangements, and operate at various scales.

2.2. The vast majority of you supported our draft definition, although there were various comments such as:

- The definition should be broad, because there's a danger that being too precise could exclude future NTBMs that haven't yet materialised.
- The definition needs to allow for 'traditional businesses' which are developing or providing 'non-traditional' offers.
- The definition implies a focus on domestic customers and we should make sure that it does not exclude propositions for non-domestic customers.
- Considering NTBMs' potential to transform the market should recognise that some of them may want to only operate in a local area, rather than expand regionally or nationally.
- The proposed definition did not explicitly reference heat.

2.3. We think a definition remains necessary to clarify the scope of this work and are content that the slightly amended version of our initial one is a sound basis for this. We do not think it excludes innovative business models that do not yet exist, or innovative propositions offered by traditional market players. We believe our definition balances the clarity for framing this work, with the flexibility to accommodate the diversity of known and potential energy market players.

⁴ Original definition proposed in discussion paper: *Business models offering new products or services, or new ways of delivering these, that are different to those traditionally provided in the existing energy market. Those offering such services have diverse motivations (technological, social and environmental as well as financial) and ownership arrangements, and operate at various scales. Over time NTBMs have the potential to transform the existing energy system*

⁵ For the purposes of this definition, 'business models' encompasses business models in development, those already established and delivering, and other potential models which have not yet emerged or been conceived of.

2.4. Many of you noted that heat should be part of the scope of this work. Heat is currently unregulated. That said, we recognise that the provision of heat forms part of the services (including as part of bundled offers) that some NTBMs are looking to develop. We recognise that heat is an important component of the energy system and the way it is provided may change as we move to a low-carbon energy system. We consider heat in more detail alongside the other issues raised under the 'local energy' theme in Chapter 6.

Drivers

2.5. Our discussion paper examined why so many different types of NTBMs are emerging. We set out four drivers we thought were motivating new entry:

- Low carbon energy transition.
- Rapid technological innovation.
- Lack of consumer engagement and trust.
- A greater focus on affordability and supporting vulnerable consumers.

2.6. Many of you broadly supported these drivers. Some of your responses also pointed to an additional driver that we are calling 'active citizenship'. Although not universal, this appears to be an emerging trend, with some people wanting to participate more and have greater control over the products and services they are offered, and how they are delivered.

2.7. You also said that the growing opportunities to generate, distribute and supply energy more locally is a fundamental driver for a range of NTBMs, in particular those run by community energy groups. Some of these new NTBMs are planning to 'stay local' and not expand geographically. This reflects the growing emphasis on localism within broader government policy.

Characteristics of NTBMs

2.8. In our discussion paper we provided three descriptors to broadly characterise 'non-traditionality' in the energy generation, supply, distribution and services sectors. Importantly, these differentiate non-traditional models from traditional business models. These descriptors were:

- Value proposition.
- Motivations.
- Organisational arrangements.

2.9. We also suggested that NTBMs could be grouped into three broad activity types:

Local services	Bundled services	Customer participation
<ul style="list-style-type: none">• Community• Municipal• Housing Associations	<ul style="list-style-type: none">• Energy Service Companies• Multi-service providers• Market services	<ul style="list-style-type: none">• Peer-to-peer• Demand side flexibility• Prosumers• Next generation intermediaries

2.10. Your responses generally reflected that we had captured what is in the market and supported the characteristics and descriptors. You also made the following points:

- Traditional businesses can offer non-traditional services or innovative propositions.
- There are often blurred lines between traditional and non-traditional offers and some NTBMs' activities cover a wider spectrum than just one of energy generation, supply, distribution and service provision.
- There will be some NTBMs that we don't know about or that are yet to be developed so it is not possible to set out the characteristics of NTBMs rigidly – and this is likely to always be the case in this more innovative part of the market.
- The roles of the demand-side, of storage and distributed generation should be given equal importance as the role of the supply side in our consideration of the NTBM work area. The roles of heat also require further consideration.

3. Summary of the transformative potential of NTBMs

3.1. The reason we wanted to start a discussion with stakeholders about NTBMs was to better understand if and how NTBMs could transform the energy system. In particular, we wanted to understand if they can produce positive outcomes for consumers, in line with those in Ofgem's Corporate Strategy.⁶ These are:

- Lower bills than would otherwise have been the case.
- Reduced environmental damage both now and in the future.
- Improved reliability and safety.
- Better quality of service, appropriate for an essential service.
- Benefits for society as a whole including support for those struggling to pay their bills.

3.2. We asked you about the potential challenges, risks and opportunities of NTBMs. We were interested to know if regulation is getting in the way of these models, and what the benefits, costs and risks of any changes to regulation may be.

3.3. We examine aspects of the transformative potential of NTBMs in chapters 4-5 of this document. This section summarises the general points you made.

3.4. Many of you told us that NTBMs have the potential to positively transform the energy system, by driving innovation, providing competition for incumbents (recently as stated as important by the Competition and Markets Authority⁷), unlocking more value for consumers, driving improved consumer engagement and better service, and providing system resilience. Many of you said that NTBMs can deliver desirable outcomes for consumers, in particular by lowering bills, reducing environmental damage and improving services.

3.5. In general, you agreed that the drivers we set out are causing changes in the energy system: the low-carbon transition, technology innovation, greater emphasis on affordability, and consumer engagement issues. Many of you thought that these changes will be characterised by more decentralisation, more opportunities for new models of flexibility (including storage, demand-side response

⁶ Link to Ofgem's Corporate Strategy:

https://www.ofgem.gov.uk/sites/default/files/docs/2014/12/corporate_strategy_0.pdf

⁷ Link to CMA's Energy Market Investigation provisional findings report: https://assets.digital.cabinet-office.gov.uk/media/559fc933ed915d1592000050/EMI_provisional_findings_report.pdf

and distributed generation), a growing role for heat services, and more tailored customer service and bundled offers.

3.6. Many of you said that NTBMs will be more effective drivers of innovation in the energy system than incumbents. This is because NTBMs can be quick to leverage new technologies and can test innovative approaches (if permitted to do so) at a smaller scale with less risk and greater creativity than incumbent energy companies. Because of these benefits, many of you called for more enabling and flexible regulatory arrangements. Some of you also warned that there are risks to consumers of these new approaches and that these need to be better understood.

3.7. Others argued that traditional organisations can also contribute to transformative change in the energy system, by offering innovative value propositions for customers. Smart thermostat offers, for example, harness new technologies to let consumers control their heating at home or remotely.

3.8. You mentioned many ways NTBMs can drive transformative change. For example, they can help share assets and increase asset utilisation, especially for storage. They may promote innovation in other sectors, such as in the financial markets, through attracting new sources of capital, for example the growing use of crowdfunding.

3.9. You said that NTBMs could open up opportunities for a more flexible electricity distribution network with potentially lower costs to all customers. You suggested that networks could make use of them to help deploy smart grid technologies.

3.10. Some of you expect that NTBMs will help decentralise the energy sector. You expect to see smaller assets generating power and consumers using it closer to the point of production. The growth in decentralised renewables is contributing to the appetite for more localised energy solutions and/or more diverse approaches to consumer protection. Some of you also said that NTBMs have the potential to reshape the industry, making it more democratic with greater consumer engagement. The scale of the impact of NTBMs was not addressed, but many of you suggested that competitive pressure for incumbents will increase.

Themes from responses

3.11. There were a number of common areas that many of you raised in terms of how NTBMs could contribute to the benefit of consumers in a changing energy system. We considered these against Ofgem's consumer outcomes, as set out in our Corporate Strategy. Two transformative themes relating to how NTBMs could transform the energy system emerged from this process, with two cross-cutting themes on the implications for regulation. We have focused on these in more detail in the following sections. They are:

Transformative themes



Non-traditional business models: Supporting transformative change in the energy market

1. New models of flexibility in a changing energy system.
2. Local energy.

Cross-cutting themes

1. Enabling diversity and innovation.
 2. Consumer protection and service.
- 3.12. The two transformative themes focus on the specific functions and markets you said NTBMs will be prevalent in, and the consequential regulatory arrangements.
- 3.13. The first cross-cutting theme summarises your views of how the regulatory framework can best facilitate NTBMs in a changing energy system. The second addresses the comments that many of you made about the implications of NTBMs' activities for consumers, in terms of both risks and opportunities.
- 3.14. The following four chapters look at these themes in more detail. They do not provide a 'point by point' account of all the issues raised. Instead they are intended as summaries of the common issues you told us about.

4. Transformative theme one – new models of flexibility in a changing energy system

4.1. You generally said that NTBMs, through their business and delivery models, can make the system more flexible by harnessing the benefits of embedded generation, demand-side response and storage. The key issue for many NTBMs is how these changes could be enabled by the regulatory system.

4.2. Flexibility is a key feature of energy markets. Many traditional business models already provide flexibility to the system (such as thermal peaking plants). But there are now new forms of flexibility emerging which are also NTBMs. Over the past few months, Ofgem has been working to understand what is preventing flexibility from being used efficiently across the system. We focused on three sources of electricity flexibility: demand-side response (DSR), energy storage and distributed generation⁸ (DG).

Potential benefits

4.3. Many of you believe that flexibility is an important component of an evolving energy system. You acknowledged the benefits of new flexibility sources: DG can enhance network resilience, support demand management, improve consumer engagement and enhance energy literacy among consumers. DG can also help with managing constraints at particularly congested parts of the energy networks, as can DSR. Some of you argued that energy storage, both locally and at a larger scale, can lower bills and make the system more efficient.

Challenges, risks and issues

4.4. Many NTBMs wishing to provide flexibility services told us that they cannot reach their full potential under current regulatory arrangements. They noted a number of challenges relating to the installation and use of generation, storage, and DSR. Ofgem is taking forward work on flexibility in a number of priority areas relating to these issues, please see chapter 8 for more detail. Some of the common issues to emerge are summarised below.

⁸ Distributed generation (also known as embedded generation) is any generation which is connected to the local distribution network, as well as combined heat and power schemes of any scale. The electricity generated by such schemes is typically used in the local system rather than being transported across the UK.

Distributed generation

4.5. The growth of DG was a key issue for many of you. As DG can provide flexibility we have set out the issues and suggestions you raised in this chapter. You also mentioned it in the context of local energy (see chapter 5 for more detail). As well as identifying the opportunities it could present, both for the system and for the growth of NTBMs, you saw many challenges for the energy system architecture and the regulatory framework. In particular:

- System operation could become more complicated in a system with a lot of DG and storage. You asked how voltage, frequency, and security of supply could best be managed in this context.
- Some of you were uncertain about how to generate sufficient revenues to cover the costs of small-scale local operations.
- How regulation can more generally clarify roles and responsibilities and allocate benefits in this area was raised, for example in the case of how virtual prosumers⁹ accrue benefits.
- Stakeholders concerned with local energy raised the issue of grid constraints. Current approaches to constraint management can prevent community energy generation schemes from going ahead, in particular because of a focus on system reinforcement instead of demand-focused solutions at distribution level.
- You also mentioned that current Distribution Network Operator (DNO) incentives are not strong enough for DNOs to actively use DG to help with constraint management.

Storage

4.6. NTBMs and prospective NTBMs raised a range of issues relating to emerging models of energy storage. In particular:

- They were concerned about the absence of a clear regulatory classification for 'electricity storage', given storage can be classified as consumption and / or generation, and can be subject to both sets of regulations and costs because of this.
- Some argued that National Grid and DNOs should be allowed to invest in energy storage, because they, their customers, and renewable generators would benefit from it.

⁹ The capacity of several prosumers can be aggregated into a 'virtual power plant' and comprise an offer to power grid users eg suppliers for functions such as system balancing. See Annex 2 for a definition of 'prosumer.'

4.7. Related to the point above, one stakeholder questioned which party should own the electricity storage asset and which should be the service provider. It was argued that DNO ownership has an advantage, in that the storage facility is an integral part of the operational network and requires expert design, installation, commissioning and maintenance. On the other hand, if another party such as a commercial aggregator manages the asset, that party might be better placed to provide services to all parties.

4.8. Others told us that the Capacity Market (CM)¹⁰ is unsuited to storage. One of you raised the issue that capacity agreements require participants to deliver electricity at times of system stress, with penalties for failing to do so. You mentioned that these stress events are not explicitly limited in duration so some storage facilities would find it difficult to meet this agreement and would not participate.

4.9. Some said that getting funding and investment to build power storage projects is extremely difficult because there are no guaranteed sales against which to provide a return.

Demand-side response

4.10. You commented on the issues faced by those who want to offer DSR services. In particular:

- As with storage, it was argued that the current Capacity Market rules disadvantage DSR compared to generation.
- It is uncertain how enough revenue can be generated to cover the costs of small-scale initiatives which are not designed to grow (such as community energy schemes) particularly for business models not solely focussed on generation and supply.
- More DSR may require changing the regulatory framework, in particular to ensure it is on a level playing field with generation and to clarify market participants' roles and responsibilities.

Market signals

4.11. Many of you argued that existing market arrangements do not let price signals flow through the market to allow flexibility to be provided across the value chain.

¹⁰ Part of the government's Electricity Market Reform package, the Capacity Market will ensure security of electricity supply by providing a payment for reliable sources of capacity, alongside their electricity revenues, to ensure they deliver energy when needed. It is designed to encourage the investment needed to replace older power stations and provide backup for more intermittent and inflexible low carbon generation sources. More information can be found at:

<https://www.gov.uk/government/collections/electricity-market-reform-capacity-market>.

4.12. Many of you told us that DNOs will need to operate their networks more flexibly as DG increases. But you also said that there is a lack of clarity on how a DNO would signal to the local network that flexibility is needed – as there is no established local flexibility market. You noted that flexibility services tend to be procured on the transmission system level, as opposed to locally by DNOs. You also explained that in the absence of a mechanism for rewarding a consumer who makes no or less use of the transmission system, it is harder for local suppliers to differentiate themselves on price from national energy suppliers.

4.13. Some of you also said that the settlement arrangements for domestic customers currently inhibit the true value of flexibility from being signalled in the market. Currently, domestic settlement is carried out on a ‘deemed profile’ basis. Although half-hourly settlement is not necessary for demand-side response, some of you talked about the need for bespoke consumer profiles to support your business models and were concerned about the time and effort required to establish these.

Suggested measures

4.14. There were many suggestions and actions proposed to respond to the challenges above. The most common suggestion was for Ofgem to embrace and roll out regulation that increasingly relies on principles and to develop a more flexible and swifter derogation processes¹¹. A more flexible regulatory framework underpinned by clear and consistent principles could be better suited to a more flexible system, providing greater opportunities for energy market participation and innovation. It was noted that this would favour an agile framework that can move in unspecified directions rather than an approach that formulates a prescribed framework for industry to follow. Please see chapter 6 for details of stakeholder views on the need for a more agile regulatory framework.

Distributed generation

4.15. Responses on this issue generally indicated that more flexible regulation was required in order for DG to work efficiently with network services.

4.16. One of you cited an example where NTBMs are looking to enhance the impact of a community energy scheme by enabling greater local supply and balancing. A trial in Cornwall is looking at the potential for an ‘offset connection agreement’ combined with a ‘sunshine tariff’ to incentivise the local community to shift demand to times when the local solar farm is generating.

4.17. It was also argued that the move to a DSO model would encourage DNOs to procure DG as a flexibility service. If DNOs were to assume a greater role in

¹¹ You may wish to note that we published updated guidance on the retail markets review derogations process in June 2015 after the deadline for responses to the NTBM discussion paper. Further information can be found here:<https://www.ofgem.gov.uk/publications-and-updates/guidance-derogation-requests-domestic-retail-market-review-rmr-licence-conditions>

balancing, local energy services (demand and supply) would be required and a local market would develop to enable the balancing.

Storage

4.18. Particularly on the question of storage, it was suggested that the classification of electricity storage needs to be resolved so its potential can be realised.

4.19. It was also recommended that National Grid and DNOs should be permitted to invest in energy storage solutions.

Demand side response

4.20. For DSR, it was suggested that Ofgem should review the treatment of demand response-centred business models in regulatory policy and arrangements.

Market signals

4.21. It was recommended that half-hourly settlement should be mandatory for domestic consumers so as to allow innovation in areas such as time-of-use tariffs.

4.22. In relation to network charges, it was proposed that there should be a mechanism for rewarding a consumer who makes no (or less) use of the transmission system.

Next steps on flexibility

4.23. In our position paper on flexibility, also published today¹², we propose to initiate work to make sure that regulation supports an efficient, flexible energy system. We have prioritised those areas where we can play a role, and where we have found there to be broad consensus that action is needed now to achieve benefits for consumers. We will:

- Encourage DNOs to take a more active role in network management, moving to future DSO roles and engaging effectively with the System Operator.
- Clarify the role of aggregators.
- Clarify the legal and commercial status of storage.

¹² Link to Ofgem Position Paper - Making the electricity system more flexible and delivering the benefits for consumers: <https://www.ofgem.gov.uk/publications-and-updates/position-paper-making-electricity-system-more-flexible-and-delivering-benefits-consumers>



Non-traditional business models: Supporting transformative change in the energy market

- Explore how to support more large industrial and commercial customers to participate in providing flexibility.

We will also:

- Examine and feed into European discussions on how future distribution charges may need to evolve. We see this as a longer term piece of work which we will be initiating thinking on now.

4.24. These actions do not seek to complete the necessary changes, but rather address specific, priority issues as a step towards enabling key new roles and business models for the future system. We recognise that the journey to the future electricity system is a longer term transition which will require work on many fronts, and ongoing engagement with industry and others.

4.25. We look forward to moving our work on flexibility forward as part of a broader programme of work with the Department of Energy and Climate Change (DECC), intended to manage the transition to a smarter energy system. This work will also form part of a wider portfolio of related work in Ofgem, looking at issues related to the future development of the system.

5. Transformative theme two – local energy

5.1. Many of you raised the theme of local energy. We introduced some of the issues relating to local energy in chapter two. In this section we give a fuller summary of the issues you raised.

5.2. Existing and potential market participants argued that with the low carbon transition, affordability issues and a lack of consumer trust with incumbents, growing interest in local energy approaches is a trend that is set to continue. Another driver was suggested for the rise of local energy, which we have named 'active citizenship'. Although not universal, this appears to be an emergent trend, with some people wanting to participate more and have greater control over the products and services they are offered, and how they are delivered. Heat was also mentioned as a key local energy consideration, often in the context of district heat networks.

5.3. Many commented that community groups, local authorities, devolved administrations, incumbents and energy service providers are interested in seeing more localised energy solutions (particularly local supply) develop. Different motivations, characterisations and barriers for local energy were mentioned. These include:

- The role of prosumers as local energy actors.
- The growth in community-owned and municipal energy services and more emphasis on consumer participation and democratic accountability for energy services.
- Peer-to-peer relationships between local generators and consumers.
- The cost effectiveness of local supply models vis-à-vis national supply models within current regulatory arrangements.
- Micro-grid or off-grid systems.
- The role(s) of heat in local energy markets.
- Flexibility as a key enabler of local energy markets.

5.4. There are close links between this theme and the others in chapters 4 to 7. You also raised the issue about how local supply would interact with storage and DG, arguing that local consumption of generation or storage could provide system flexibility during periods of network constraint, and are likely to become a fundamental feature of the distribution system.

5.5. Some local models can operate within current regulatory arrangements, though NTBMs argued that these approaches can be complex and overly burdensome, particularly given the scale many local initiatives intend to operate at. Others claimed that they would be able to unlock much greater consumer value with changes to the regulatory framework. There are also those who claim their prospective business model can't operate without fundamental changes to the regulatory system.

Potential benefits

Relieving network pressure

5.6. You identified many potential benefits for alleviating network pressures and enhancing network efficiency. Some NTBMs claim that local energy can relieve pressure and congestion on the networks by matching demand to the generation available through, for example, using innovative tariffs and connection agreements that incentivise local demand shifting. Many of you commented that more local generation and consumption could reduce the need for network reinforcement caused by increasing electricity consumption.

Enhancing network resilience

5.7. You also told us that local energy can reduce network losses by incorporating storage solutions to help manage flows, provide flexibility services and reduce imbalances. One of you said that local energy can make the system more resilient by developing micro-grids that can work with the national transmission and distribution systems or operate on a stand-alone basis. Local energy could also mitigate the risk of failure in centralised generation as consumers could be served by local sources.

Lowering the cost

5.8. The potential for lowering the cost of energy for consumers via local supply was also raised, particularly by community energy groups. They told us that by selling directly at the local level using local tariffs (and potentially avoiding or paying reduced distribution and transmission charges), consumers would benefit from lower bills. The argument for lower bills brought about by increased competition from local energy suppliers was also raised.

Community and local economic benefits

5.9. Community energy groups and those interested in municipal energy argued that local energy can bring more benefits for consumers where the community is generating and supplying its own energy (particularly where local balancing and domestic half-hourly settlement is enabled). These benefits include more community cohesion, increased consumer confidence to interact with the energy market, the creation of local jobs, and positive effects on the local economy. Many

community energy business models allow profits to be recycled into energy saving measures or fuel poverty projects in the communities they operate in, and influence consumer energy behaviour.

Consumer trust

5.10. One of you has conducted research that suggests that people are three times more likely to trust a community energy company to give them a fair deal than one of the existing traditional energy suppliers.

Better for smaller players

5.11. Another cited benefit of local energy is that it gives smaller players a route to market, in terms of supply and demand side services. Local energy has the potential to 'disrupt' the traditional energy market through the profusion of local alternatives or offerings.

Challenges, risks and issues

5.12. You explained that there were risks, issues and challenges to realising local energy models.

Increased charges

5.13. Some of you said that there is a risk associated with potential changes to transmission charging arrangements. If charges were reduced to reflect less usage by local energy actors, it might increase charges for other users of the transmission network. You also suggested that more local energy could result in national stranded assets because of an increase in local generation and less use of the national transmission infrastructure.

System instability

5.14. Some of you were concerned about potential system instability arising from increasing amounts of local energy. Some argued that security of supply could be threatened by the development of private networks or virtual private networks, if there was no facility for backup supply. A concern was also raised about the technical capability and capacity of local organisations to discharge the responsibilities of balancing, managing credit, debt and billing.

Changing consumer protection

5.15. Some of you commented that a profusion of local energy systems could lead to the reconsideration of consumer protection measures. Some local NTBMs might argue for derogations to develop services which involve different approaches to

consumer protection. While this could lead to more choice for consumers, it could also increase risks to consumers, particularly those in vulnerable situations.

Bigger risk of supplier failure

5.16. Current market actors said there was an increased risk of supplier failure from allowing different and untested models to enter the market, leading to consumer detriment and additional industry costs. It was claimed that competition and security could be compromised by allowing more of these models. Consumer interests would need to be protected by, for example, requiring new local suppliers to have back-up arrangements with other suppliers. These could add complexity and cost for consumers.

Balancing and settlement - status quo bias

5.17. As mentioned in chapter 6 on 'enabling diversity and innovation', a major issue arising from the responses of non-traditional actors was that of a 'status quo' bias being present in current regulatory arrangements. In the case of local energy, it was argued that geographically-defined energy systems and markets find it very difficult to operate under current regulatory and trading arrangements, as these are designed for national models. The electricity system requires constant real-time management to ensure demand and supply are in balance. The balancing and settlement rules incentivise generators and suppliers to meet their production (supply) and consumption (demand) commitments. All participants are charged when they don't meet their commitments and are in imbalance.

5.18. Some of you said that as the system functions at a national level, those parties operating across different areas can better manage their portfolio, unlike smaller, locally-focused services. NTBMs argued that the system puts local operators in a weaker position. The current method of balancing the energy system was raised by a number of you as inefficient; the potential benefits of local balancing need to be realised.

Geographically-defined supply

5.19. Another issue cited is the nature of the current supply licensing regime. As things stand, a licensed electricity supplier has to offer terms to any GB domestic consumer that request them. Those interested in local supply business models called for geographically-defined / limited supply to be placed on an equal footing with national supply.

Costs and complexities

5.20. Many cited the cost and complexity of the supply licence regime for smaller actors as a key issue. While Licence Lite¹³ provides an alternative, many still consider it complex and costly, and may require a certain customer threshold to operate effectively. This would potentially not be appropriate to smaller, local communities or peer-to-peer supply models because of the systems and resource / cost requirements. This is particularly the case for community energy groups, who have limited flexibility and are more likely to rely on volunteers.

Additional costs for local suppliers

5.21. A number of those interested in supplying energy locally argued that the cost of using a third-party licensed supplier to discharge many of the high-competency and technical requirements of a supply licence (such as with Licence Lite) results in value being stripped from a local supply model. The amount of 3.5 pence per kWh was cited as the additional cost that a locally-focussed supplier would have to take into account when supplying their customers which affects the competitiveness of local suppliers vis-à-vis established suppliers. Another issue raised about Licence Lite is the need to rely on established licensed suppliers for the arrangement to operate. Some NTBM commentators questioned how willing the major suppliers would be to do this.

Power purchase arrangements

5.22. Some smaller suppliers and those looking to provide local energy services raised concerns about the current national model for the sale of DG output and whether it would let more localised approaches emerge, where power is either consumed locally and / or used for local balancing. Most DG output is currently sold via long-term power purchase agreements to national suppliers. NTBM stakeholders argued that this is slowing the potential for more distributed models and markets.

Network charges

5.23. The issue of network charges was also of concern to parties looking to develop local energy models. They said that uncertainty and lack of transparency in the formulation of DNO connection charges can be a risk and barrier to start-up for local developers (including community groups and local authorities). You also raised the issue that there is currently no way to reward a consumer who makes no (or less) use of the transmission system. This makes it harder for local suppliers to differentiate themselves on price from national energy suppliers.

¹³Licence Lite operating guidance: <https://www.ofgem.gov.uk/publications-and-updates/licence-lite-slc-11-3-operating-guidance>

Cost of grid connections

5.24. The cost of grid connections were cited as an issue for local groups, in particular for community energy groups who have limited options over where to locate their connection. This can make connections expensive and sometimes unaffordable for community groups. Consequently, you told us they could seem less attractive as a customer to DNOs, who some stakeholders argue may favour commercial developers. Community energy stakeholders claim the system is configured to best suit the traditional generation and supply model and, therefore, major energy suppliers. Community energy groups argued they are at a disadvantage because of this.

5.25. Stakeholders may wish to note that we have now published a summary of responses to our consultation on 'Quicker and more efficient connections.'¹⁴

Heat

5.26. Heat is currently unregulated, however it was mentioned frequently by stakeholders, in particular in the context of district heat networks and heat provision as part of a bundled service offer.

5.27. Many of you argued that as Energy Service Company (ESCo) models develop and become more commonplace there will be more interactions between regulated services and heat. The implications of these interactions needs to be better understood for new business models and consumer services.

5.28. Although not a direct regulatory issue, some stakeholders expressed concern that the high up-front capital costs for district heating schemes may affect their investability.

5.29. One of you also noted that while electricity and gas are supplied and billed on a price per unit basis, future suppliers may choose to offer alternative products such as a monthly 'all-in' price for 'comfort' which includes both heat and electricity. You told us that it is unclear what sort of licence arrangement would be needed to achieve this.

Suggested measures

5.30. There were a number of suggestions on measures that could enable local energy models to develop and meet the outcomes they are looking to achieve.

¹⁴ We recently consulted on 'quicker, more efficient connections' and have today published a summary of responses document which can be found here: <https://www.ofgem.gov.uk/publications-and-updates/quicker-and-more-efficient-connections-next-steps-0>

Supporting trials

5.31. You acknowledged that many local supply models have not been tested in the energy market and that this is an important step in assessing their viability, benefits, risks and impacts. Many of you suggested it would be beneficial if local energy models could do trials. You note that an innovation space for local supply could help trial new approaches such as data flows, local balancing mechanism units, contracts and tariffs, as well as funding to investigate innovative network solutions like battery storage at household and community level. Some local trials (funded by research councils, innovation bodies, government ,etc) are already underway, operating within current regulatory arrangements, but innovation in this area could be better enabled by reviewing regulatory conditions for non-traditional offers.

Regulatory treatment of non-traditional business models

5.32. You suggested clarifying the regulations for how models incorporating demand-focussed services models are treated, and investigating the impact of current settlement costs and charges on new market entrant business models.

Supporting community groups

5.33. Community energy stakeholders also suggested that a third party intermediary should be established to help community groups, by undertaking many of the technical, high-competence and costly electricity supply licence functions (such as code compliance) on their behalf.

5.34. One community energy stakeholder suggested that community groups could potentially gain preferential rates to export or use generation locally, thereby enhancing their investability. Others mentioned that the reduced carbon footprint of local generation and consumption should be measured and rewarded.

5.35. A range of measures were suggested in relation to community energy schemes and quicker, more efficient grid connections. These include DNOs allowing for connection payments post-installation, more usage of unconventional distribution connections and a proportion of new capacity being reserved for community energy schemes. You also suggested considering anticipatory investment arrangements for community energy projects.

Exemptions

5.36. Some of you suggested that local ESCo or multi-utility models should be exempt from supplier switching legislation as switching inhibits their business models. Others suggested that that existing exemptions from the requirements to hold supply and distribution licences need clarifying.

Changing codes

5.37. Some non-traditional actors suggested that there should be routes to propose changes to the Balancing and Settlement Code (and other industry codes) by bodies that are not a party to the BSC (or other codes). You suggested that a simpler regulatory model needs to be introduced.

Balancing and settlement

5.38. Many of you suggested that the role of the DNO will need to change as local energy becomes more prevalent. Many argued that DNOs need to take on a more strategic network management role, including responsibilities for local balancing and trading.

5.39. Some potential local suppliers recommended creating a local balancing unit to allow generation and supply to be balanced within a DNO region before positions are reported nationally. Advocates argue that the effect of this would be to reduce the scale and cost of potential imbalance and improve the competitiveness of new, smaller suppliers. A local balancing unit could potentially enable other business models such as aggregators, peer-to-peer, demand management and suppliers operating under the Licence Lite arrangement.

Tiered-regulatory arrangements

5.40. Some of you suggested that a tiered approach to regulation may be required. One respondent proposed a dual approach to regulation where national transmission-level generation and national competitive supply continues to be regulated according to existing arrangements, but where new local energy suppliers and energy service companies are supported by a Regional Energy Partnership. On the other hand, it was also mentioned that a tiered regulatory system would be complex and unfair, and that a level playing field should be maintained.

Heat

5.41. It was suggested that there needs to be a clear statement on policy and regulatory intentions around heat networks and to make sure that any regulation recognises the long payback periods associated with district heating.

5.42. In terms of the interactions between regulated and non-regulated activities, where heat is provided as part of a bundled offer to consumers, it was suggested that policies and regulations should be introduced to help parties to offer such products, perhaps without the need to comply with all the obligations currently required of energy supply licensees. One of you suggested that Ofgem should consider a derogation allowing customers to be supplied on a 'price for comfort' basis.

5.43. It was also recommended that any future regulatory arrangements for heat should consider the role of exemptions for sufficiently small private networks.

6. Cross-cutting theme one - enabling diversity and innovation

6.1. The vast majority of stakeholders commented that regulation needs to become more flexible and agile to accommodate, respond to and enable an energy system where innovation is standard. Many of you, in particular those advocating for NTBMs, see this as essential for NTBMs to realise their value propositions.

6.2. Current regulatory arrangements evolved with the traditional energy utility model. Many feel it favours incumbents while restricting innovative business models and smaller players. Some claimed that the 'status quo' is being maintained by the ways in which regulation is developed, that traditional energy companies have considerable influence and are generally better-resourced to dedicate the necessary time to industry working groups and engaging with policy development.

6.3. Many existing and prospective NTBMs called for a full evaluation of existing regulatory arrangements, which they see as prohibitively complex and rigid (eg industry codes¹⁵ were repeatedly referred to). Other issues that surfaced were the national focus of supply licensing, balancing and settlement arrangements, the grid connections regime (which may not be suited to models such as community energy groups) and the overall regulatory burden that many argue is prohibitively costly.

6.4. Many of you also pointed out that the expected pace and scale of change in the energy system mean that a regulatory approach which is more agile, responsive and permissive of innovation will be necessary.

6.5. NTBM stakeholders argued that the current system does not allow them to trial new approaches, identify risks and demonstrate their outcomes / impacts in a controlled regulatory market environment.

6.6. While stakeholders had different (and sometimes potentially competing) visions for future regulatory arrangements, there were a number of core models / approaches that emerged. These are:

- An increased reliance on principles and outcomes rather than prescriptive regulation.
-

¹⁵ In May 2015, we issued an open letter launching a review of the code governance reforms we introduced under previous code governance reviews (known as CGR and CGR2). We expect to consult on more detailed initial proposals for potential governance reform in the coming weeks. Separately, industry code governance is one of the areas also being considered by the Competition and Markets Authority (CMA) as part of the ongoing energy Market Investigation Reference. The CMA are developing proposed remedies. We are supporting the CMA by providing them with information and expertise throughout the investigation.

- Less burdensome regulation (including exemptions from current licence requirements).
- Bespoke regulation, designed to respond to particular initiatives (or initiative types).

6.7. The benefits and risks of these approaches are considered below.

Potential benefits

Reducing barriers to innovation and entry

6.8. Stakeholders told us that an increased reliance on principles could reduce barriers to innovation and entry by allowing incumbents and new entrants to develop new ways of operating within the market.

6.9. A focus on outcomes, rather than being prescriptive about how market participants should operate, allows more flexibility to develop tailored customer responses. In addition, some of you mentioned that relying more on principles would better suit the low-carbon transition and the need to reduce greenhouse gases.

6.10. Some NTBM stakeholders expressed the view that innovative supplier propositions that depend on longer-term business models should be exempt from supplier switching legislation. They argued that current retail market rules are hampering non-traditional offers and that there should be greater (and faster) use of derogations¹⁶ to allow more innovative propositions to reach the market faster.

6.11. Some said it is unfair to regulate community and municipal actors as smaller versions of larger-scale incumbents as their scope and motivations are different. They feel that bespoke regulation could allow for a case by case assessment of the consumer and system benefits of a particular activity. On the other hand, others argued that a 'level playing field' should be maintained for all market actors and warned that more complexity could confuse consumers.

Reducing complexity and the compliance burden

6.12. Smaller new entrants said they would benefit from reduced regulatory complexity particularly in the area of licensing. They argued that they faced a disproportionately heavy compliance burden under current regulatory requirements. In particular, electricity settlement arrangements were cited as key barriers to new entrants and innovations.

¹⁶ You may wish to note that we published updated guidance on the retail markets review derogations process in June 2015 after the deadline for responses to the NTBM discussion paper. More information can be found here: <https://www.ofgem.gov.uk/publications-and-updates/guidance-derogation-requests-domestic-retail-market-review-rmr-licence-conditions>

Enhancing social outcomes

6.13. You said that increased regulatory flexibility could let market participants deliver more and diverse consumer benefits. This could include provisions that recognise and support the delivery of social outcomes which have traditionally been outside the scope of both the regulator and traditional market players. Some NTBM stakeholders argued that consumers could benefit from the widespread participation of socially-motivated participants, such as community energy schemes, that focus on broader social outcomes such as community cohesion, skills, energy literacy and overcoming fuel poverty.

Challenges, risks and issues

6.14. Stakeholders also identified a number of challenges, risks and issues with the approaches outlined above.

Destabilising the market

6.15. Some stakeholders were concerned that moving away from the current (more prescriptive) regulatory framework to any one of these new approaches could destabilise the market, create uncertainty and correspondingly reduce investor confidence. Some of you warned against a new, potentially multi-tiered regulatory system.

Greater complexity

6.16. The flipside of allowing for a greater diversity of business models is the potential increase in complexity for consumers, which could have implications, particularly for those that are most vulnerable.

6.17. Some stakeholders noted that more agile and flexible regulation could lead to greater complexity as more diverse NTBMs are accommodated. Many NTBMs noted that a centralised regulatory system cannot continue to regulate an increasingly decentralised energy system. Several spoke of the need to recognise that different scales of operation were emerging within the market and that regulation needed to take account of this. The potential for overwhelming new local entrants with (even simplified) supply obligations was flagged as something that would have to be considered.

6.18. Some of you note that a successful transition to a more permissive regulatory environment will require more collaborative and trust-based relationships between the regulator and market participants. This is likely to involve issues related to data protection, as both the amount of data available and the number of actors with access to the data is likely to increase dramatically. The availability of new datastreams is likely to intensify market pressures and commercial interests which, when coupled with permissive regulation, will require a regulator with an ability to respond agilely to emerging developments.

Negative consumer effects

6.19. You told us that fostering a trial and error approach through permissive principles could have a disproportionately negative effect on lower income energy users due to, for instance, consumer intermediaries (like housing associations and local councils) being used as testing grounds for new business models. It was also suggested that modular or bespoke regulation and localised business propositions might allow companies to cherry-pick customers, leaving the most vulnerable excluded.

Defining the parameters of a new regulatory framework

6.20. Given the growing interest in multi-utility services, many of you commented on the challenge of defining the boundaries for a new regulatory framework. Regulatory arrangements designed to accommodate multi-utility or cross-sectoral NTBMs may lead to the emergence of market actors who haven't traditionally fallen within Ofgem's regulatory remit. Stakeholders cited the emergence of a dedicated heat market as a likely challenge in this sphere.

6.21. Some stakeholders raised concerns about potential gaps in dispute resolution for services across different utility sectors.

Suggested measures

Re-evaluating regulatory codes and licences

6.22. You suggested a number of measures aimed at enhancing the flexibility and agility of regulatory arrangements. Some responses, in particular from NTBMs, call for a full evaluation of regulatory codes and licenses with a focus on encouraging new entrants and innovation (and involving non-traditional parties in their design).

Advocates and champions

6.23. More generally, NTBM stakeholders suggested that Ofgem should consider how NTBMs are better involved across the entirety of our regulatory functions and that Ofgem should explore new ways to facilitate such engagement (eg through champions such as Ofgem's Independent Suppliers Champion¹⁷, and increased use of teleconferencing). It was also proposed that a dedicated high-level NTBM advocate be appointed within Ofgem to champion NTBM engagement. Using these methods, it was suggested that working groups be set up to explore in more depth the pros and cons of more flexible and agile regulation.

Regulatory objectives and institutions

¹⁷https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/341310/Challenger_Businesses_-_Independent_Energy_Suppliers_FINAL_ACTION_PLAN.pdf

6.24. Stakeholders also cited the need for regulation to reflect a more balanced set of Ofgem objectives, to incorporate wider energy system benefits, and to take into account multiple aspirations (potentially including broader public policy objectives).

6.25. The development of new institutions was also suggested to ensure the system evolves to complement initiatives and resources at regional and local levels and to inform transmission level investment decisions.

Quicker derogations

6.26. A more streamlined, quicker derogations¹⁸ process was recommended as an effective means of allowing innovative schemes to come forward. It was suggested that NTBMs whose business models require long-term contracts should be permitted to offer propositions that are exempt from supplier switching legislation.

Innovation space

6.27. NTBM stakeholders told us that in order for them to demonstrate their positive consumer outcomes, an innovation space needs to be created within current regulatory arrangements where prospective business models can test their propositions. This might involve exemptions from some current regulatory arrangements.

¹⁸ You may wish to note that we published updated guidance on the derogations process in June 2015 after the deadline for responses to the NTBM discussion paper. Found here:
<https://www.ofgem.gov.uk/publications-and-updates/guidance-derogation-requests-domestic-retail-market-review-rmr-licence-conditions>

7. Cross-cutting theme two - consumer protection and service

7.1. A general position put forward by existing and aspiring NTBMs is that they could deliver a better deal for consumers. Others advocated a cautious approach, because of a lack of consistent and coherent evidence of benefits. You expressed the view that it is critical that consumer protection issues (positive and negative) are fully considered. Consumer service and protection matters cut across the other themes. We explore these issues appropriate to each theme in chapters 4 to 6.

7.2. In this chapter we summarise the primary consumer benefits and risks associated with NTBMs. Unlike previous chapters we have not provided a summary of 'suggested measures' because these are already detailed in the previous chapters. Also, this summary section is more concerned with summarising the high-level benefits and risks that stakeholders have identified as needing to be fully considered in any next steps process.

7.3. In terms of high-level consumer benefits and risks, you suggested that:

- Consumer interests and protections could be enhanced by more tailored offerings, lower bills and improved customer service if the growth of NTBMs was enabled by the regulatory framework.
- On the other hand, the growth of a more distributed and fragmented market enabled by a more flexible regulatory approach could increase (and / or introduce new) risks for consumers resulting from issues such as: the misuse of data, the growth of local monopolies, consumer / NTBM requests for different approaches to consumer protection, or simply from increased market complexity.
- Concepts of consumer protection might be different in the future, with an increased reliance on principles and more devolved levels of risk (to consumers). Some of you cautioned against changes which result in a tiered regulatory framework, citing the need for a level playing field for businesses.

Potential benefits of NTBMs for consumers

Better customer service

7.4. Responses from existing and prospective NTBMs indicated that a more flexible and less burdensome regulatory framework would allow NTBMs to develop more local, niche, innovative or bespoke offers for consumers. We were told that this would in turn deliver more tailored and responsive customer service, particularly with the use of smarter data. Some smaller parties said that in general,

smaller-scale market players placed more value on their customers as the scale of their business models requires them to retain each one.

7.5. The growth of NTBMs would increase competition in the market which could in turn drive all suppliers to 'up their game' and deliver better value and service for all consumers.

More informed consumers

7.6. One stakeholder suggested that NTBMs (through more demand side activities or changes to consumer protection philosophy) could lead to more informed consumers, with different attitudes and appetite to risk even if the overall level of risk increases due to a more diverse and fragmented energy system. For example, the willingness of a consumer to take on more risk may lead to greater tolerance of outages in systems where people have more local control. This in turn could lead to greater consumer awareness and changing behaviours more suited to a decentralised, flexible and low carbon energy system. The question of what characterises an 'informed consumer' wasn't expanded upon and evidence wasn't provided about the level of this demand from consumers.

More resilient communities

7.7. Those advocating for local energy and distributed generation suggested that there is increasing desire for some communities to move towards greater energy security / resilience, either through self-generation or sourcing local / domestic generation. Some indicated a desire to support vulnerable consumers and communities via lower-cost local generation and the retention of income for the benefit of the community. In addition it was noted that Community Energy Service Companies could be formed by communities or housing associations / social landlords to spread the benefits of renewables, and help to reduce fuel poverty.

7.8. Many NTBMs argued for integrated social, economic and environmental business models which can have broader energy system and community benefits. They argued that energy is a critical local asset and can contribute to a community's economic, environmental and social well-being.

Potential challenges, risks and issues of NTBMs for consumers

Excluding vulnerable consumers

7.9. Specific issues of consumer protection were raised by a consumer group. They mentioned the possible exclusion of vulnerable consumers who could potentially be less likely to participate in new energy services because of upfront costs, knowledge, skills and short-term property tenure in some cases.

Non-traditional business models: Supporting transformative change in the energy market

7.10. It was also noted that the growth of NTBMs could lead to increased complexity in the market which could in turn inhibit consumers' ability to secure the best or most appropriate service for their needs.

7.11. It was also argued by some that it is doubtful that affordability and supporting vulnerable consumers will be material drivers for NTBMs. Some said that if the costs of additional support for consumers in vulnerable situations are socialised across non-vulnerable customers, there is little financial incentive for new entrants to focus solely on this segment of the market.

7.12. The case was also made that consumers (and vulnerable consumers in particular) are best served when supply and energy services are kept separate, and that social objectives are better delivered through targeted initiatives than via bundled offers from existing players.

Local monopolies

7.13. The potential for the growth of municipal, community and local energy services operating 'off-grid' was also raised as a potential model. While stakeholders told us that this type of approach would deliver some benefits for consumers, this raises the potential for local monopolies to emerge in the market, which could run counter to current concepts of how consumer benefits and protections should be realised.

Misuse of smart data

7.14. The roll-out of smart meters and the growth in consumer data was cited by a number of you as a key opportunity for NTBMs to develop new, improved and tailored offerings for consumers based on their energy-use profiles. However, it was also noted by a consumer group that this increases the potential for smart data to be misused (whether intentionally or otherwise), particularly under a more distributed energy system operating under more flexible regulatory arrangements.

Capacity and resources

7.15. This question of capacity was also raised as a challenge for NTBMs when set in the context of customer service: some of you asked whether a small-scale NTBM would be able to offer the level of service expected by consumers, particularly if their scale of operation does not allow them to employ sufficient staff to deal with consumer calls, handle complaints swiftly, or deal with the timescales for consumers switching supplier. It was also suggested that smaller-scale operations might not have the necessary capacity or safeguards in place to ensure the required levels of data protection.

8. Links with other Ofgem work areas

8.1. We are aware that many of the issues raised in response to our NTBMs discussion paper have feature in work that is going on across Ofgem under other projects that you might be aware of or have engaged in. Below is a summary of the key projects that are responding to issues raised by stakeholders, in the areas of flexibility, grid connections and the future of retail regulation.

Flexibility

8.2. We define flexibility as the modification of generation and/or consumption patterns in order to provide a service within the energy system¹⁹. Flexibility is a key feature of energy markets and is used by several market actors across the value chain to efficiently manage their operations.

8.3. The transition to a smarter, more flexible electricity system has the potential to bring many benefits to consumers. Historically, the main source of flexibility has been generation. But system needs and consumers' needs are likely to change. New sources of flexibility, both on the supply and on the demand side, could help respond to consumers' changing needs while delivering a resilient, sustainable and affordable electricity system.

8.4. This year we worked on understanding how to facilitate the efficient use of new flexibility sources across the value chain. We propose to initiate work, focused around priority areas, to make sure that regulation supports an efficient, flexible energy system. We have prioritised areas where we can play a role, and where we have found there to be broad consensus that action is needed now to achieve benefits for consumers. We will:

- Encourage Distribution Network Operators to take a more active role in network management, moving to future Distribution System Operator roles and engaging effectively with the System Operator.
- Clarify the role of aggregators.
- Clarify the legal and commercial status of storage.
- Explore how to support more large industrial and commercial customers to participate in providing flexibility.

We will also:

- Examine and feed into European discussions on how future distribution charges may need to evolve. We see this as a longer term piece of work which we will be initiating thinking on now.

¹⁹ For a more detailed definition of flexibility, see [here](#)

8.5. These actions do not seek to complete the necessary changes, but rather address specific, priority issues as a step towards enabling key new roles and business models for the future system. We recognise that the journey to the future electricity system is a longer term transition which will require work on many fronts, and ongoing engagement with industry and others.

8.6. We look forward to moving our work on flexibility forward as part of a broader programme of work with the DECC, intended to manage the transition to a smarter energy system. This work will also form part of a wider portfolio of related work in Ofgem, looking at issues related to the future development of the system.

8.7. Information from NTBM stakeholder responses has helped inform the findings and next steps in our position paper: Making the electricity system more flexible and delivering the benefits for consumers²⁰, and will continue to inform our work on flexibility over the coming year. Your responses to the NTBM discussion paper have been particularly helpful in illustrating how NTBMs can help to harness the potential of the demand side for consumers, and of your view of the regulatory challenges faced by NTBMs wanting to operate in this area.

Quicker and more efficient connections project

8.8. Distributed generation (DG) has grown dramatically in the last five years and is a feature of certain types of non-traditional business models. Government subsidies, the cost of technologies (particularly solar photovoltaics), the emergence of non-traditional business models and the benefits implicit in the transmission charging regime have all contributed towards growth. The geographic distribution and rate of growth however have been erratic and challenging to predict.

8.9. The traditional view was the DG would lead to a reduction in flows on the system and generally this has been the case, as evidenced by falling demand nationally. In many rural areas however generation now outstrips demand, leading to the need for potential upgrades to both distribution and transmission networks and placing more demands on the system operator (SO) to keep the system in balance. Where networks are constrained by capacity levels, further growth in generation can be extremely expensive, for both the generator looking to connect and consumers more generally.

8.10. In our consultation on 'Quicker, more efficient connections' we have explored ways in which earlier investment in new infrastructure could be undertaken to speed up the connection process and when it might be appropriate for different parties (developers, DNOs) to carry this cost. We have now published a summary of responses²¹. In our consultation we also explored how connections could be

²⁰ Position Paper: Making the electricity system more flexible and delivering the benefits for consumers <https://www.ofgem.gov.uk/publications-and-updates/position-paper-making-electricity-system-more-flexible-and-delivering-benefits-consumers>

²¹ Link to summary of responses to consultation on 'quicker, more efficient connections': <https://www.ofgem.gov.uk/publications-and-updates/quicker-and-more-efficient-connections-next-steps-0>

facilitated without the need for new grid capacity to be built. This is a complex issue. DG sits alongside other generation, smart grids, storage and demand-side response as one ingredient of the future low-carbon energy system. We believe that more flexibility in how networks are managed could be the most effective way of avoiding costly (and unnecessary) grid upgrades and non-traditional business models might be key to unlocking this flexibility.

Future retail regulation project

8.11. Our Future Retail Regulation project is exploring what an increased reliance on regulating through principles could be like. Traditionally, we have regulated through detailed prescriptive rules, but we are keen that our regulatory framework delivers the best outcomes for consumers and fosters more competition and innovation. We believe that a greater reliance on principles could deliver more comprehensive regulation and effective protection for consumers while enabling innovation.

8.12. The introduction of the Standards of Conduct in 2013 was our first major step towards regulating through principles. In our Ofgem strategy last year we set out our intention to rely more on general standards of conduct over time. We are currently exploring what this could be like. Our primary focus is on entities currently regulated through our existing domestic retail supply licence. However, we are mindful of the longer-term implications of any transition towards an increased reliance on principles within our supply licence, and are considering the relationship to non-traditional business models and other relevant workstreams across Ofgem.

9. Next steps

9.1. Below we have set out the key issues that you have raised with us, under the relevant theme headings, and our timescale for future engagement with you.

9.2. Key issues raised from transformative themes:

1. **New models of flexibility in a changing energy system**

You noted a number of challenges relating to the installation and use of generation, storage, and demand-side response. Ofgem is taking forward work on flexibility in a number of priority areas relating to these issues. Please see chapter 8 for more detail.

2. **Local energy**

Many NTBMs told us that the regulatory system should be reviewed so it can better accommodate local energy undertakings.

9.3. Key issues raised from the cross-cutting themes:

1. **Enabling diversity and innovation**

Many of you told us that the current regulatory framework doesn't offer the flexibility to develop their models and to demonstrate the impacts of their initiatives. You have asked for innovation space within the regulatory framework to trial your business model and demonstrate your impacts.

2. **Consumer protection and service**

Many of you told us that enabling the growth of NTBMs will have implications for consumers both positive and negative. You told us we should consider these risks and opportunities when developing options for regulatory change.

9.4. The vast majority of you said that regulation needs to become more flexible and agile. It needs to accommodate, respond to and enable energy system change. We already have a number of projects underway examining elements of this change. In light of your responses we are considering whether we should examine these issues in the wider context of our work on regulation and future energy system arrangements.

9.5. With this in mind, we are considering where our efforts are best focused next, and will publish a proposed course of action by the end of the year.

10. Annex 1 – Questions from the discussion paper

Chapter 1 – Introduction

- What is your view on our definition of non-traditional business models?
- How we can engage with NTBMs more effectively in the future?

Chapter 2 - Drivers for NTBMs

- We would like to hear your views on the drivers for market entry. Do you think there are other important drivers?

Chapter 3 - Our understanding of NTBMs

- Have we accurately described the NTBM environment? Have we missed something?
- We'd like to learn more about organisations using NTBMs. If you are prepared to discuss this, please contact us (see Appendix 1 for contact details).

Chapter 4 - NTBMs within current regulatory arrangements

- Our main focus in this paper is on regulatory issues arising from future energy market transformation, but we recognise that there are relevant issues within current regulation. Please let us know if there are any other issues?

Chapter 5 - Market effects of NTBMs and future challenges for regulation

What are the benefits of different NTBMs to energy consumers?

- Are these benefits experienced by all energy consumers or only those directly receiving the NTBM's services?
- Are there additional wider benefits to the energy system and beyond it?
- Which of these benefits should be taken account of in regulatory policy-making and decision-taking and why?
- Are there energy system costs or risks from any of the NTBMs? How might these be addressed?
- How will NTBMs help to drive innovation within the energy system?
- How could NTBMs potentially transform the energy market and what fundamental challenges to regulatory arrangements could this entail?
- How could regulatory arrangements change to accommodate NTBMs?
- What role do NTBMs and other parties have in managing energy market transformation and regulatory change?

11. Annex 2 – Glossary of key terms

Please note that these are descriptive terms to aid understanding of the document. They are not intended as formal definitions.

Energy prosumer

Someone who is both a producer and consumer of energy.

Codes

The industry codes set out the detailed ‘rules’ which underpin the operation of the electricity and gas industry arrangements. Licensees are required to maintain, become party to, and / or comply with the industry codes in accordance with the conditions of their licence. Unlicensed parties may also be party to some of the industry codes.

Community energy

Community energy covers a range of potential engagements in the energy system including such things as energy purchasing, generation and demand management. Most schemes are geographically targeted, although some focus on communities of interest (eg, a certain group of vulnerable consumers). These projects emphasise community engagement, ownership (this can include shared ownership or joint ventures), leadership and control with the community benefiting from the outcomes (this can include social, economic and environmental benefits).

Derogation

A derogation is a direction from the Gas and Electricity Markets Authority, relieving a licensee from specific obligations in specified circumstances and to a specified extent. In relation to most of our Retail Market Review (RMR) rules, a licensed supplier may submit a request for a derogation where it is able to demonstrate that compliance would have outcomes which are inconsistent with the intended outcomes of the rules and would have substantial unintended negative consequences for consumers. For more details, please see our RMR derogation guidance ([available here](#)).

Distribution Network Operators (DNOs)

DNOs own and operate electricity distribution assets which form a connection between a transmission system and most customers. They are holders of electricity distribution licences, which are granted for specified geographical areas in Great Britain. Currently there are 14 DNOs owned by six different groups.

Distribution System Operators (DSOs)

Please note that currently there isn’t an agreed definition of a DSO. One of the things that we will be taking forward in the next phase of our work on flexibility, will be to clarify the future roles of DNOs. For the purposes of our work we will be using the term ‘DSO’ to encompass the future intended functions of DNOs. Please see our position paper on flexibility which provides more information.

Electricity settlement

Electricity settlement places incentives on generators to contract efficiently to match what they produce, and on suppliers to contract efficiently to cover what their customers consume. The process of settlement assesses how effectively market parties meet their obligations and charges them accordingly. A customer's consumption in a half hour may be based either on actual half-hourly meter readings, or on the demand attributed to each half hour using standard profiles. Accurate and timely half-hourly consumption data from smart metering could significantly improve the quality of settlement, which in turn could encourage innovation and efficient use of energy.

Local energy

Local energy captures a range of locally-focused activities such as generation, supply, demand-side services, balancing and distribution. Some participants are already delivering locally-focused activities within existing regulatory arrangements (under exempt or licensable frameworks). Growing interest in local energy parallels the development of more decentralised, renewable assets, the emergence of community-owned and municipal energy, and the increasingly important roles of demand-side, consumer-centric models. The local energy space is highly innovative, conceiving models which challenge some of the nationally focused, centralised aspects of the energy sector and associated regulatory arrangements.

Microgrid

There is no formal definition of a microgrid. However, the term is generally understood to mean a geographically focused small power grid that has sufficient generation and network assets to be self-sufficient. Microgrids are usually connected to a larger power grid to provide supply security and the ability to buy and sell energy. However, some are able to operate as autonomous 'island' grids.

Peer-to-peer energy

Where surplus energy (eg generated at a household level) is sold directly to a neighbour or neighbours instead of selling it back to a supplier or other third party via the grid.

Smart grid

Different people have different understandings of the term smart grid. One commonly used description is an electricity network that can intelligently integrate the actions of all the users connected to it (generators, consumers and those that do both) in order to efficiently deliver sustainable, economic and secure electricity supplies.

Supply licence

The legally binding terms and conditions that licensed gas and electricity suppliers must meet to supply domestic and/or non-domestic customers in accordance with the Gas Act (1986) and the Electricity Act (1989).