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## Remaking the regulatory model? Taking stock of ten years of customer engagement in Britain's energy networks

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# 1       **Remaking the regulatory model? Taking stock of ten years of** 2       **customer engagement in Britain’s energy networks**

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## 9 **Abstract**

10 Over the past decade, a concerted effort has been made in Britain to encourage and  
11 incentivise regulated energy network companies to engage directly with their customers  
12 through a process known as customer engagement (CE). Drawing on a series of semi-  
13 structured interviews and document analysis, the paper tracks the processes of implementing  
14 CE within regulation from 2010 to 2020. Given its increasing prominence in the regulatory  
15 framework for energy networks, the paper examines how various stakeholders involved in the  
16 regulatory process have experienced it and evaluate its importance. Based on this analysis we  
17 discuss what lessons can be learned as the challenge of transitioning to more active and  
18 flexible local and regional energy distribution networks is faced. We identify key challenges  
19 of moving from an experimental phase and embedding CE in the mainstream regulatory  
20 framework.

## 21 **Keywords:**

22 Customer engagement, network regulation, decentralisation, energy distribution

23  
24

25	BPI	Business Plan Incentive
26	CCG	Customer Challenge Group
27	CEG	Customer Engagement Group
28	CE	Customer Engagement
29	CG	Challenge Group
30	CMA	Competition and Markets Authority
31	CVP	Customer Value Proposition
32	LAEP	Local Area Energy Planning
33	ODI	Output Delivery Incentive
34	PCD	Price Control Deliverable

35  
36

# 1 Introduction

2 Since its introduction in the late 1980s and early 1990s in Britain,<sup>1</sup> energy regulation has  
3 tended to be a highly centralised and technocratic procedure [1]. The regulator acts on behalf  
4 of energy customers, with little direct interaction between the regulated companies and their  
5 customers. However, over the past decade a concerted effort has been made in Britain to  
6 encourage and incentivise regulated companies to engage directly with their customers  
7 through a process known as *customer engagement* (CE). Given its increasing prominence in  
8 the regulatory framework for energy networks, the purpose of this paper is to take stock of  
9 customer engagement as a regulatory approach and to examine how various stakeholders  
10 involved in the regulatory process (the regulator, distribution companies, members of  
11 Customer Engagement Groups (CEGs) and sector analysts) have experienced it and judge its  
12 importance in future price control reviews. Through desk-based research and stakeholder  
13 interviews, we trace the introduction and evolution of CE within the regulatory framework  
14 for energy systems (focusing on gas and electricity distribution) from 2010 to 2020, and  
15 review how it has been perceived and implemented by the regulatory agency and the  
16 regulated network companies. Based on this analysis we discuss what lessons can be learned  
17 as the challenge of transitioning to more active and flexible local and regional energy  
18 distribution networks is faced.

19 The paper is structured as follows:

20 In the next section, we review relevant literature on customer engagement in network  
21 regulation, looking across energy, water and other regulated industries. This literature has  
22 been mainly written from a regulatory economics perspective but it is highly relevant as these  
23 ideas have formed the basis of Ofgem's (the British energy regulator) approach to CE for  
24 electricity and gas distribution.

25 We then outline our analytical approach. Drawing on a recent strand of literature in the  
26 energy innovation and transitions fields, we frame CE as a 'regulatory experiment'.

27 Regulatory experiments are new tools or initiatives introduced by regulatory agencies as a  
28 means of moving towards a more innovation-friendly regulatory model. CE is relevant to this  
29 strand of the literature because it is still unclear whether CE in British energy regulation is

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<sup>1</sup> The gas regulator (Ofgas) was founded in 1986 while the electricity regulator (Offer) was founded in 1990, both were merged in 2000 to form Ofgem.

1 viewed as a temporary ‘experiment’ or the start of a deeper structural change in the  
2 regulatory model. There is a broader effort to develop more adaptive and reflexive  
3 governance models for energy networks and framing CE as a regulatory experiment suggests  
4 potential tensions between these efforts and more established and embedded regulatory  
5 frameworks.

6 Based on this framing, we then set out our empirical strategy and outline our case study of the  
7 British experience of implementing CE over the past decade. This is a necessarily cross-  
8 sector analysis as CE has been applied in different ways across the energy and water sectors.  
9 We, therefore, draw on insights and experiences of two regulatory agencies: Ofgem  
10 (electricity and gas markets in Britain) and Ofwat (water in England and Wales).

11 Our discussion then focuses on the challenges of moving from an experimental phase and  
12 embedding CE in the mainstream regulatory framework. Reflecting on the experience of CE,  
13 and drawing on a range of stakeholder perspectives, we identify several challenges and  
14 opportunities for CE going forward: 1) To more clearly articulate the roles and  
15 responsibilities of customers, network companies and the regulator in relation to CE as a  
16 form of regulatory governance:<sup>2</sup> 2) The issue of trust in relation to CE: 3) How wider changes  
17 to the governance of energy in the UK political context will present new challenges and  
18 opportunities for CE in the 2020s.

## 19 **2 What is customer engagement? Background and literature review**

20 The background to CE in monopoly regulation in the British context was a 2006 review  
21 regarding current regulatory practices, including the water and energy industries [2].  
22 Recommendations were made to ensure that regulatory practices continued to promote  
23 competition, that best practice was being followed and that regulators showed value for  
24 money. There was recognition within the report that a standalone customer representation  
25 body would be more transparent and effective and that cooperation between regulators  
26 through a formal working group could also increase the regulators’ effectiveness.

27 Following on from this, an academic and regulatory policy debate ensued which discussed  
28 how to involve customers more in the regulatory process, in line with the wider objective of

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<sup>2</sup> Where governance is defined as ‘*institutions, policies, regulations, rules and incentives and the means by which they were put in place*’ [60 pp.4].

1 streamlining regulation. Stephen Littlechild, the electricity regulator during the 1990s, then  
2 writing as an academic economist, became a strong advocate of CE as a solution and began to  
3 frame it as a means of reducing the regulatory burden on companies and providing better  
4 outcomes for customers [e.g. 3–6].

5 In response to the 2006 report, Littlechild [7] suggested that a new style of regulation was  
6 required as the many natural monopoly utility businesses served different consumers with  
7 varying needs and demands on the businesses. The initial regulatory model he designed in the  
8 1980s and implemented in the 1990s as the electricity regulator was based on providing  
9 strong incentives to network companies to improve their efficiency, to be achieved by  
10 controlling their prices and allowing them to retain earnings as profits if they outperformed  
11 the regulator’s expectations (often termed incentive regulation or RPI-X regulation). This,  
12 while successful on its own terms, had become increasingly bureaucratic and limited the  
13 flexibility of the utility companies and the regulator.

14 Littlechild (2008) later recommended using a method similar to that of ‘negotiated  
15 settlement’ as deployed in some US states, where revenue is decided through negotiation  
16 between the regulated company and its customers. An alternative put forward was the  
17 ‘constructive engagement’ approach, already being used by the Civil Aviation Authority  
18 (CAA) in Britain. Here negotiation takes place between the regulated company and the  
19 customer, but within boundaries provided by the regulator. Both approaches would allow for  
20 *‘the prospect of greater deregulation’* [7 pp.36]; a move back to ‘regulation with a light-rein’,  
21 thus enabling the reduction of regulatory overheads as recommended by the Select  
22 Committee [2]. Littlechild emphasised the need to return to the original tenants of his  
23 regulatory philosophy – that customer choice and competition is better protection from  
24 monopoly power than regulation – an approach also advocated by Pollitt [8].

25 Recently, other contributions have framed the CE approach in more customer-centric terms;  
26 this new style of regulation is required as the many natural monopoly utility businesses serve  
27 different consumers with varying needs and demands [e.g. 9–12]. The growth in the use of  
28 stakeholder and citizen participation language is reflected in regulatory documents  
29 worldwide, with the recognition that CE cannot have a ‘one size fits all’ definition of  
30 participation or what it hopes to achieve [13].

31 The ability to frame the CE approach as a means of streamlining, and even reducing,  
32 regulation, whilst enhancing the role of customers in the governance of energy networks,

1 traditionally a technocratic and closed domain, enabled the concept to gain purchase in  
 2 regulatory policy debates and gain buy-in from a wide range of academics and commentators.  
 3 Within regulated industries (e.g. energy, water, telecoms, aviation) differing methods of  
 4 customer engagement have been devised [14] with varying motivations, such as:

- 5 • a need to recognise the changing role of the customer and to increase trust,  
 6 accountability and legitimacy in the regulatory process [10,15];
- 7 • to consider new methods of regulation that recognise the importance of social and  
 8 environmental, as well as economic, goals [15]
- 9 • reducing regulatory intervention and changing the focus of companies from the  
 10 regulator to the customer;
- 11 • reducing complexities and costs;
- 12 • changing the role of the regulator to become a facilitator of market processes rather  
 13 than the decision-maker;
- 14 • to ensure the protection of vulnerable customers [11]; and, more recently,  
 15 • to include sustainability and decarbonisation objectives [16,17].

16 A recent paper by Hahn et al. [18] analysed the CE methods used by energy and water  
 17 regulators in the UK, US, Canada and Australia and the UK Civil Aviation Authority,  
 18 suggesting four stylized models of CE based on how it has been conducted and the level of  
 19 involvement by the regulator in the revenue decision (see Table 1).

20 **Table 1: Stylized models of customer engagement [source: 18]**

		Regulator allows or encourages negotiation	
		No	Yes
Regulator requires formal assessment of customer demands or preferences	No	<i>Traditional Regulation</i>	<i>Negotiation</i>
	Yes	<i>Customer-centric Regulation</i>	<i>Negotiation Plus</i>

21 In Hahn et al’s [18] typology, two extremes of CE are suggested, with *negotiation* at one end  
 22 (limited regulatory intervention and maximum customer involvement) and *traditional*  
 23 *regulation* (limited customer involvement and maximum regulatory intervention) at the other.  
 24 For both *traditional regulation* and *customer-centric regulation*, the regulator makes the final  
 25 decision on accepted prices, whereas, in *negotiation* and *negotiation plus*, this requirement  
 26 falls to the companies and their stakeholders.

1 Littlechild, in his work to simplify price controls through deregulation, has recommended a  
2 *negotiated settlement* or a *constructive engagement* approach, both of which fall under the  
3 *negotiation* category, however *constructive engagement* is considered as *negotiation plus* due  
4 to the regulator’s continued influence in the CE processes. Hahn et al [18] applied their  
5 definitions to suggest a method of assessing the value of CE to improving welfare and  
6 suggested that an economic efficiency yardstick could be introduced to evaluate CE  
7 approaches.

8 As we shall see below, the British regulators have created bespoke CE approaches, each with  
9 different methods of implementation and assessment within their price control reviews. Both  
10 Ofwat and Ofgem have moved from *traditional regulation* to *customer-centric regulation*,  
11 however, the methods used for CE and how it is valued within the regulatory review process  
12 differ (this is discussed further in Section 5).

### 13 **3 Customer engagement as a regulatory experiment**

14 As we outline in the empirical section below, CE was introduced in Britain in the early 2010s  
15 in the context of a broader effort to transform the regulatory model for energy networks and  
16 align it with long term system transition goals. The focus began to shift from cutting costs  
17 and achieving short term efficiencies, with greater emphasis on long term investment and  
18 innovation, whilst achieving desired outputs, in line with customer demands. While much of  
19 the existing literature on CE discussed above is from a regulatory economics perspective,  
20 evaluating the economic efficiency benefits of different CE models, there has been little  
21 comment on the effect CE may – or may not – have in enabling transitional change. While  
22 *negotiation* or *negotiation plus* may be more in line with Littlechild’s vision of deregulation,  
23 it is unclear which form of Hahn’s CE approaches are most beneficial to energy system  
24 transitions. However, as some form of customer engagement is preferable to the *traditional*  
25 *regulation* of RPI-X, it could be suggested that *customer-centric regulation* may be an  
26 experimental ‘next step’ to understand the changing role of regulation within energy system  
27 change.

28 A relevant strand of literature has emerged in the sustainability transitions and innovation  
29 studies fields which examines the introduction of ‘regulatory experiments’ as a means of  
30 stimulating innovations in the networks, such as the development of smart grids [19–21].  
31 With the recognition that energy regulation needs to move on from cutting costs and  
32 achieving short term efficiencies, this strand of literature has charted the transformation of

1 established regulatory models and the changing role of regulatory agencies in energy  
2 transitions. As energy regulation is currently in flux and there is a great deal of uncertainty  
3 about the appropriate models for enabling a transition, a number of regulators have begun to  
4 introduce new tools and incentives which, in different ways, enable risk-taking, innovation,  
5 and long term thinking. Through this approach, rules and approval processes are tailored to  
6 the needs of innovators, whether network companies or technology developers. As  
7 Schittekatte et al. outline, this can involve ‘a derogation from a rule but it can also mean  
8 assigning responsibility to players to conduct activities that they are normally not allowed to  
9 engage in’ [22 pp. 1]. Such experiments include, but are not limited to, innovation incentives,  
10 competitions, and sandboxes – where rules are tailored to the needs of innovators.

11 A number of studies have examined processes of regulatory experimentation in the context of  
12 energy innovation and transitions: Bauchnecht et al. [19] study the role of regulatory  
13 experimentation to promote a more flexible and reflexive approach to the governance of  
14 electricity networks in Norway. They find that while these initiatives can address market  
15 failures successfully, they fail to address the deeper ‘transition failures’ associated with  
16 changing the basic direction of this capital intensive and highly conservative industry sector.  
17 Lockwood [21] focuses on Ofgem’s attempts to promote network innovation in Britain  
18 through the introduction of ‘protected spaces’ for innovations. He finds that the initiatives  
19 have had a limited effect and remained marginal to the key decision making processes  
20 determining companies’ investment plans and regulated returns. He attributes this to a  
21 gradualist process of ‘layering’; the relationship between the political level and the regulator  
22 in the British context, he argues, helps to explain this approach (see also[20]). Schittekatte et  
23 al. [22] conduct a cross-case comparison of regulatory experiments in Italy, Britain and the  
24 Netherlands. One of their findings was that regulators adopt different strategies with respect  
25 to the scope of the experiment: Italy, for example, sought to target certain areas for  
26 innovation, while Britain took a more open approach, with scope for developers to suggest  
27 their own experiments.

28 This paper contributes to the study of regulatory experiments by emphasising the new  
29 relationships forming between the network companies, their customers and the regulator. As  
30 much of the emphasis in the literature thus far has been on the ‘input’ side of the networks –  
31 technology innovation – our focus on new ways of deciding and evaluating the ‘outputs’ that  
32 customers value extends this literature into a new area. In doing so it bridges a link with the  
33 literature on the changing role of customers and citizens in energy transitions. The



1 proliferation of ‘prosumers’, new forms of engagements at the local and community levels  
2 and public engagement in climate policy and energy transitions have been discussed  
3 extensively elsewhere [e.g. 23–25]. Alongside this, the new energy landscape is increasingly  
4 seeing the emergence of decentralised local and regional energy systems [e.g. 26–28], in  
5 some instances supported by local energy policies of devolved governments and unitary  
6 authorities [e.g. 29,30]. As we discuss in Section 6 of the paper, a key challenge for the  
7 design of CE in energy regulation in the context of transition is how the process can link into  
8 these wider societal and political dynamics affecting energy system change.

## 9 **4 Methods**

10 Methodologically, framing CE as a regulatory experiment suggests approaching CE in  
11 regulation as a multi-actor learning process, shaped through continuous evolution and  
12 interactions between customers, companies, regulators and other stakeholders, all with  
13 different motivations and framings of the appropriate approaches to, and benefits of, CE. We  
14 trace how the decisions made concerning customer engagement strategies between 2010-  
15 2020 have been understood and implemented from various regulatory, industry, NGO and  
16 academic perspectives. This is based on a qualitative assessment of CE during this period and  
17 an analysis of its benefits and pitfalls, as perceived by these stakeholders, and in the context  
18 of a new regulatory cycle for energy networks that has been characterised by accelerated  
19 change and fundamental uncertainties. As CE has been shaped to some degree through cross-  
20 sector interactions, we also draw on the experience of implementing CE in the water sector  
21 [for a full analysis of CE in water regulation see: 56].

22 In constructing this narrative, our main sources have been key documents on CE published by  
23 the regulatory agencies and the companies, along with a series of semi-structured interviews  
24 with a range of stakeholders. In selecting interviewees, we targeted those who were involved  
25 in shaping CE policy within the regulatory agencies and senior CE managers in a number of  
26 network companies, both energy and water. These sources are summarised in the Appendix  
27 and Table 1.

28 The following main questions guided the empirical research:

- 29 1. Which particular CE models were initially discussed?
- 30 2. Who within the regulatory and wider political space initiated these discussions and  
31 influenced the decision to adopt a particular approach?
- 32 3. How have CE processes changed and evolved during the period of study?

- 1 4. To what extent has CE influenced company strategies and become part of decision-  
2 making processes?
- 3 5. How does CE interact with more traditional and technocratic forms of energy  
4 regulation?
- 5 6. What are the challenges faced as CE moves from an experimental phase to become  
6 more embedded in the regulatory framework for energy networks during a period of  
7 transition? (This question is addressed in the discussion section of the paper; informed  
8 both by the views of the stakeholders interviewed and those of the authors).

9 To address these questions we construct a narrative history of the development and evolution  
10 of CE in Britain since its introduction in the early 2010s. This follows a process-tracing  
11 methodology where outcomes are explained ‘in terms of event *sequences* and  
12 the *timing* and *conjunctures* of event chains’ [32 pp.34]. This is an appropriate strategy for  
13 analysing CE because, as we explain below, it has changed and evolved through interactions  
14 and exchanges between regulatory agencies (both energy and water) and its application at the  
15 network company level as a key input into their long-term business plans.

16 Following the literature review, a timeline of the consultation and decisions documents for  
17 both the energy and water price controls was constructed. Although this timeline provided a  
18 broad overview and an indication of key decisions made, there were knowledge gaps around  
19 motivations and rationales that could only be filled through a qualitative interview process;  
20 e.g. the initial reasoning for introducing CE. To provide a more in-depth understanding of the  
21 processes and framings shaping CE, actors, companies and customer representatives involved  
22 in the various regulatory reviews and price controls were contacted via email and interviewed  
23 remotely. In some cases interviewees were able to speak from multiple perspectives where  
24 they had changed roles, e.g. moving from a water company to electricity distribution, or from  
25 a regulator to a ‘Customer Engagement Group’. Although the relatively small sample size  
26 (n=14) does limit the information available, the interviewees were chosen based on their  
27 experience and depth of their knowledge of the CE process over the past decade. We  
28 endeavoured to find a balanced mix of interviewees across the different stakeholder groups.

29 A semi-structured approach allowed for the interviews to be open-ended. By answering core  
30 questions, based upon the guiding research questions above, and providing insights based on  
31 a respondent’s expertise, this approach allowed the interviewee to introduce new information  
32 and ideas and to enhance and validate the data available from secondary sources [33]. The

1 interviews were coded using software, with interview data being aligned to the relevant  
 2 timeline to provide a clearer picture of the key developments and decisions.

3 In Table 2, a code has been ascribed according to the interviewee's current occupation and we  
 4 have protected the anonymity of the interviewees. It should be noted that some interviewees  
 5 were asked questions based on previous occupations as well as their present position. In this  
 6 case, the relevant occupation is in the timescale of the section for which they are providing  
 7 evidence. In presenting our results we do not focus on individual network companies, their  
 8 planning procedures, investment decisions etc., rather our timeline and analysis charts  
 9 developments in the wider regulatory process, focusing on the introduction of a more  
 10 collaborative and decentralised method of regulation into what has been a centralised and  
 11 technocratic procedure.

12

13 **Table 2: Interviewees**

<i>Interviewees</i>	
<b>Academic</b>	
<b>INT1</b>	Legal academic and advisor to regulators
<b>INT2</b>	Economist plus Ofwat membership
<b>INT3</b>	Energy markets and regulation specialist, Ofgem (2012-2016)
<b>Non-governmental organisation (NGO)</b>	
<b>INT4</b>	Think tank, Ofgem (2013-2016)
<b>INT5</b>	Citizen's Advice
<b>INT6</b>	Think tank, Ofgem (2013-2020)
<b>INT7</b>	Citizens Advice Scotland
<b>Regulators</b>	
<b>INT8</b>	Ofwat
<b>INT9</b>	Ofgem, electricity
<b>INT10</b>	Ofgem, gas
<b>Industry</b>	
<b>INT11</b>	Gas distribution, water (2005-2020)
<b>INT12</b>	WPD (20+ years)
<b>INT13</b>	Scottish Water (20+ years)
<b>INT14</b>	Ofgem (2008-2014), ESO (2019-present)

14 **5 Customer engagement in the British regulatory model since 2010**

15 **5.1 Initial drivers for a new regulatory approach: RPI-X@20 and RIIO**

16 Recognising a need for change to their regulatory approach, in 2008 Ofgem initiated a review  
 17 process known as RPI-X@20 [34]. RPI-X was an approach to regulation introduced  
 18 following the privatisation of the electricity networks in 1990 that involved the application of  
 19 an ex-ante price-cap, whereby allowed revenue was decided for a set period (typically 5 years

1 under a price control). Revenue was limited so it could not increase more than the retail price  
2 index measure of general inflation (RPI), with a percentage of expected efficiency  
3 improvements (X) deducted. Network companies were able to earn extra revenue by being  
4 more efficient than X, keeping any additional gains from the original revenue determination.  
5 RPI-X had been successful at achieving cost efficiencies post-privatisation, but as one  
6 interviewee close to the process described, change was needed as *‘there were questions*  
7 *around what role should the network companies play in decarbonisation and the environment*  
8 *more widely’* (INT14). This then led to questions around the regulatory framework itself and  
9 whether changes were needed to incentivise companies to meet the new priorities (INT14).  
10 As well as a change to the framework focussing on achieving high-level outcomes, such as  
11 sustainability and protecting vulnerable customers, there was a view that the methodological  
12 approach needed to refocus the network companies more towards their customers, as  
13 summarised by a regulatory professional involved in the review.

14 *‘One of the things that struck me pretty early on was network companies are*  
15 *very much creatures of regulation. They were strongly incentivised by the*  
16 *regulatory framework, and they focussed hugely on the regulator rather than*  
17 *their customers’* (INT14)

18 Although there was recognition from within the RPI-X@20 review board that CE would be  
19 beneficial, interviewees involved in the initial process recognised that there was *‘a question*  
20 *mark about who can be engaged enough and expert enough to challenge around the*  
21 *efficiency, cost of capital, the whole shebang of issues around what is effectively setting a*  
22 *price control about’* (INT4). It was also noted there was *‘a bit of nervousness about should*  
23 *you ... actually give control or delegate responsibility for core parts of [a] price control to*  
24 *another group?’* (INT14).

25 In 2010 Ofgem released its new *customer-centric* regulatory framework, known as RIIO [35].  
26 RIIO being the name of the price control where revenue (R) could be earned through  
27 operating efficiently within an incentive framework (I), being innovative (I) and delivering a  
28 range of output (O) categories. Initially, centrally based CE groups (the Consumer First  
29 Panel, the Large User Groups, the Consumer Challenge Group and the Price Control Review  
30 Forum), would have a role in deciding output categories and the incentives for each company,  
31 with the companies also incentivised to develop their own CE strategies [35].

1 Similar conversations were being had in the water industry during this period; an RPI-X type  
2 framework was also being used here. In 2012 Ofwat implemented a new performance-based  
3 outcomes framework for their next price control (PR14) that would incentivise the networks  
4 to deliver a set of higher-level objectives expected by the regulator, to be achieved through  
5 the efficient delivery of the outcomes that their customers required [36]. Ofwat hoped to  
6 achieve this by encouraging companies to design bespoke outcomes based on company-level  
7 CE, which would then be challenged by their Customer Challenge Groups [37].

## 8 **5.2 Establishing Customer Engagement in regulation: 2010-2015**

9 RIIO was finalised in 2010 and a handbook for its implementation was published, including  
10 expectations for customer engagement from both Ofgem and the network companies [38].  
11 Although the role of CE in determining the new RIIO output framework was centralised and  
12 channelled through Ofgem, the companies were incentivised to focus on meeting the new  
13 output categories through an increase in company level CE. An interviewee explained that the  
14 company CE incentives were designed *‘to make sure that stakeholders, in the wider sense,*  
15 *were being engaged and that the network companies had focused on their customers and that*  
16 *network companies demonstrated what they were going to deliver, how, why, etc., and how*  
17 *much for’* (INT14). Companies would need to show how they had used their CE research  
18 within their business plans to meet the outputs prescribed by the regulator.

19 As part of the new CE strategy, Ofgem introduced annual stakeholder engagement incentives  
20 for the network companies, with distribution networks also being incentivised to explore  
21 solutions to customer vulnerability. RIIO also introduced a ‘fast-track process’ for those  
22 distribution companies that produced ‘high-quality’ business plans [38].

23 Meanwhile, in the water sector, the CE approach taken by Ofwat for PR14 was still defined  
24 as *customer-centric*, but more emphasis was placed on the use of negotiation as a tool to  
25 create ‘well-justified’ business plans, while the network companies were encouraged to put  
26 forward bespoke investment proposals based on individual company CE processes [39].  
27 Unlike Ofgem’s RIIO, Ofwat did not undertake any centrally based CE. PR14 allowed each  
28 company-level customer group to decide the outcomes they needed to achieve, seeing Ofwat  
29 taking a step back from the price control process, as summarised by a regulatory official  
30 within Ofwat:

31 *‘So from now on, for PR14, for the price review, we’re not going to do*  
32 *anything to understand customer views ourselves, we’re not going to, as an*

1 *economic regulator, we're not going to do any customer engagement,*  
2 *commission any research ourselves. We're really going to leave it to you guys*  
3 *to do your own engagement with your own customers at a local level and to*  
4 *use those insights to craft your plan' (INT8)*

5 PR14 also saw the introduction of Customer Challenge Groups (CCGs) at a company level,  
6 with the final decisions on the membership of the CCG left to the water companies.

7 However, the company's CCGs for PR14 were expected to include representatives from the  
8 Environment Agency (and Welsh equivalents) and the Drinking Water Inspectorate, to have  
9 an independent chair and to include representatives from all customer groups and  
10 stakeholders. The role of the groups was to challenge the companies' engagement processes  
11 to ensure that the business plans reflected customer views, that the outcomes identified had  
12 been suitably challenged and to advise Ofwat on the effectiveness and acceptability of CE  
13 within the plan and how this would affect customers [40]. However, the lack of an agreement  
14 between Ofwat and the companies as to the membership of the CCGs perhaps reduced the  
15 value of the input the CCGs may have had (INT2). There was also recognition from the  
16 companies that a *'lack of independence, lack of diversity in the make-up of the customer*  
17 *challenge group'* (INT11) may have fed into the limited value that CE appeared to have when  
18 the draft determinations were released.

19 Although both RIIO and PR14 took a *customer-centric* approach, there were differences in  
20 the CE methods (see Table 3). The RIIO approach incentivised companies to show how CE  
21 had influenced their business plans to meet outputs decided through a centralised, Ofgem-led,  
22 customer engagement process, and offered yearly incentives to encourage an ongoing  
23 company/customer dialogue. The more decentralised PR14 approach required companies to  
24 design business plans based on customers' needs, allowing companies to justify costs for  
25 locally specific outputs that were challenged prior to the final determinations by a company  
26 challenge group. However, for both RIIO and PR14 the regulator settled the final  
27 determinations.

28 ***Table 3. Customer engagement approaches for the regulated energy and water sectors***  
29 ***(RIIO-1 and PR14).***

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GB energy RIIO GD1 (2014-2021) &  
ED1 (2015-2023)

English and Welsh Water PR14 (2014-2019)

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<b>Customer Engagement model</b>	Customer-centric regulation	Customer-centric regulation
<b>Customer engagement method</b>	Central consumer representatives (Consumer First Panel, Large User Groups, Consumer Challenge Groups, Price Control Review Forum)	Use of Customer Challenge Groups (CCG) at company level (membership decisions left to companies)
<b>Price Control negotiation</b>	Ofgem main negotiator	Ofwat main negotiator
<b>Use of CE</b>	<ul style="list-style-type: none"> <li>• Incentives and outputs designed with advice from central customer representatives</li> <li>• Incentives (fast-track) for BPs that show companies have taken account of CE</li> <li>• Annual incentives (reputational and financial) for good quality CE</li> </ul>	<ul style="list-style-type: none"> <li>• Outputs and incentive framework designed with a central Customer Advice Panel</li> <li>• CCG to challenge company business plans to ensure that they represent customers' views</li> <li>• CCG to endorse high-quality business plans</li> </ul>

### 5.3 Evaluation, cross-sector learning and new priorities drive further regulatory change (2015-2020)

Overall, the use of customer engagement was seen as positive both within industry and regulation [9,41]. It was suggested that although Ofwat was perhaps better at *'blowing their own trumpet'* (INT4) there was a healthy *'regulatory rivalry'* (INT5) developing with *'best practice leaping from one regulatory sphere to another'* (INT5). Subsequently, a review of Ofgem's CE approach noted that in the centralised approach customer representation in the design of incentives was limited and that benchmarking across companies could be sub-optimal for the distribution companies that had regionally specific challenges [9]. Also, the role of CE in allowing companies to enter the fast-track process was disputed; the main criticism being that even though Ofgem recognised the improved quality of their business plans and higher levels of CE, only one distribution company across the electricity and gas sectors achieved fast-track status [3]. Ambiguity around the importance of CE and the lack of reward perceived by some companies was highlighted as a point of consideration [3,18].

For the next round of price controls, there was a *'shift towards climate consciousness'* (INT8). Within business in general, sustainability was being recognised as an important consideration for customers, while some institutional investors were encouraging the network

1 companies to consider Sustainable Development Goals (INT1), suggesting that becoming a  
2 ‘good’ company needed to be incorporated in company decisions (INT11). This acted as a  
3 further impetus for CE. There were also further questions being asked about the role  
4 networks could play in terms of protecting vulnerable customers (INT14, INT6).

5 Meeting the newly legislated net-zero targets in the UK [42] saw a change in focus. For  
6 RIIO2 (2021-2028), Ofgem has stated that the remit is to ‘*prepare the regulated network*  
7 *companies to deliver Net Zero at lowest cost to consumers, while maintaining world-class*  
8 *levels of system reliability and customer service, and ensuring no consumer is left behind*’  
9 [43 pp.5]. Although ‘...*and customer service, and ensuring no consumer is left behind*’ was  
10 only added as a goal after the draft determinations [see 44 pp. 5], within RIIO2 there has been  
11 a definite shift in language towards more environmentally and socially conscious objectives,  
12 which then evolved further during the business plan development process.

13 On the back of the reviews of RIIO and PR14, Ofgem released its ‘Enhanced Engagement’  
14 guidance for RIIO2 [45], which included the use of company-based Customer Engagement  
15 Groups (CEGs) and a minimum standard of CE as a licence obligation which could incur a  
16 fine if not achieved, as part of the new *Business Plan Incentive* (discussed further below)  
17 [46]. Drawing from PR14, Ofgem was more prescriptive about CEG membership and  
18 transparency around governance arrangements for the groups [47]. The electricity distribution  
19 (RIIO-ED2) methodology also recommended that business plans take account of Local Area  
20 Energy Plans (LAEP) [48], suggesting that wider stakeholder views would have an added  
21 importance, particularly for the regional distribution companies. However, Ofgem did not  
22 prescribe how the companies’ CE should be framed, allowing the CEGs to challenge the  
23 companies’ CE processes as part of their role [12]. As well as company-based CEGs, Ofgem  
24 also included a centrally based Challenge Group (CG) which would assess the draft business  
25 plans, allowing comparison across companies and providing an independent report to Ofgem  
26 on areas of disagreement [45].

27 Following the recommendations of Frerk [9], RIIO2 introduced bespoke Output Delivery  
28 Incentives (ODIs) and Price Control Deliverables (PCDs), similar to the bespoke outcomes  
29 from PR14. In PR14, Ofwat did not set boundaries for their bespoke outcomes and struggled  
30 to regulate due to the quantity received. While Ofgem recognised the value of creating  
31 outputs based on company CE, as one commentator involved in the RIIO2 framework noted;  
32 ‘*you can’t have 500 outputs being delivered. So in PR19, they learnt lessons and they created*  
33 *boundaries. So I think we, certainly for RIIO2, we learnt that lesson*’ (INT6). Subsequently,



1 for RIIO2 (and for PR19), bespoke outputs which are common, or could be common, across  
2 all companies were used as sector-specific outputs following the draft determinations of the  
3 company business plans.

4 Although both RIIO2 and PR19 are still defined as *customer-centric*, there has been an  
5 evolution in the frameworks and methodologies. If the price controls are to be considered as  
6 regulatory experimentation then, as can be seen from these results, Ofgem and Ofwat have  
7 taken lessons from the reviews of CE in RIIO and PR14, and further embedded CE within the  
8 business plan process. There has been clarification of the roles of the CEGs and CCGs and  
9 increased transparency around their membership to reduce the perception of capture. Ofwat  
10 and Ofgem have both recognised the value that company based CE can have in determining  
11 output incentives, but there are still limitations on how much value is placed on CE in the  
12 final revenue determinations.

13 Replacing the earlier fast-track process (see Section 5.2), Ofgem introduced the new Business  
14 Plan Incentive (BPI) which includes a four-stage evaluation process [46]: in stage 1, the  
15 business plan must achieve the minimum CE requirements, as prescribed by Ofgem, or risk a  
16 penalty. Only companies meeting these targets can achieve a reward based upon their  
17 Customer Value Propositions (CVP), a new constituent of the process. Companies may claim  
18 for a CVP reward by showing how:

- 19 • their bespoke ODIs/CVPs are going beyond the minimum requirements and above  
20 what may be considered as BAU;
- 21 • they are adding value for their customers, with any value – social or environmental –  
22 monetised through cost-benefit analysis;
- 23 • their CVP has been agreed by the CEG and CG and it is representative of what their  
24 customers value, evidenced by their research into customer expectations and  
25 willingness to pay [49].

26 Stages three and four are dependent on Ofgem’s confidence in the cost allocations within the  
27 business plan, although recommendations from the CEG and CG will also be considered.

28 High confidence costs are those that Ofgem has high confidence in their ability to benchmark  
29 their own estimates against those of the company’s. Low confidence costs are where Ofgem  
30 has lower confidence in their cost estimates and so must trust the company’s figures, which  
31 should then be robustly justified, or incur a penalty.

1 The draft determinations for RIIO GD2 were released in July 2020, with a response deadline  
 2 for September 2020, following which questions were raised about the transparency of the  
 3 decision-making processes within Ofgem. Changes to the company incentives were made as  
 4 the CEGs and CG were appraising the draft business plans [50], so the ‘Enhanced  
 5 Engagement Strategy’ and RIIO2 methodology perhaps seemed more of a ‘work in progress’  
 6 rather than a finalised plan, leading to some understandable confusion over what would be  
 7 accepted. This is an ongoing issue and it is too early to tell how, or if, it will be resolved. At  
 8 the time of writing, the final determinations for RIIO in gas distribution, and both electricity  
 9 and gas transmission (GD2 and T2), have been completed, while the business plan  
 10 methodology for RIIO ED2 (electricity distribution) has been released.

11 **Error! Reference source not found.** summarises the changing role of CE in the framework  
 12 of energy regulation made during this period, again comparing this against developments in  
 13 the water sector, which, as discussed, have influenced and been influenced by developments  
 14 in energy.

15

16 **Table 4: New approaches to customer engagement for the regulated energy and water**  
 17 **sectors (RIIO-2 and PR19).**

	GB energy RIIO GD2 (2021-2026) & ED2 (2023-2028)	England and Welsh Water PR19 (2019-2024)
<b>Customer Engagement model</b>	Customer-centric regulation	Customer-centric regulation
<b>Customer engagement method</b>	Price Control Review Forum (PCRf) replaced by company Consumer Engagement Groups (CEGs). BPs further assessed by a central Challenge Group (CG)	Use of Customer Challenge Groups (CCG) at company level. Transparency of CCG governance to ensure legitimacy
<b>Price Control Negotiation</b>	Ofgem main negotiator with advice from CG report	Ofwat main negotiator
<b>Use of CE</b>	<ul style="list-style-type: none"> <li>• Incentives and outputs designed with advice from central customer representatives but also including common ODIs after draft determinations</li> <li>• Business Plan incentive (BPI): companies must show that BP is tailored around CE results</li> <li>• CEG report on BP, based on use of CE</li> <li>• CG report to further assess investments, costs and CE through comparison over all companies</li> <li>• Annual incentives for good quality CE</li> </ul>	<ul style="list-style-type: none"> <li>• Outputs and incentives framework designed with central Customer Advice Panel</li> <li>• CCG to challenge company business plans to ensure that they represent customers’ views</li> <li>• CCG to endorse high-quality BPs for new fast-track status</li> <li>• Companies to develop bespoke performance commitment</li> </ul>

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replaced by BPI, with CE expected to become BAU

- Bespoke ODIs, PCDs and CVPs introduced
- 

## 6 Discussion: from experiment to mainstream

The last 10 years of energy (and water) regulation in Britain has seen a substantial change to the processes through which revenue determinations and business plans are decided. Creating customer-focussed monopoly utilities has not been a simple task and has required a step-change from both the companies and the regulator. Although recognising that there is a role for CE within regulation to meet new challenges, both of the regulators analysed have created individual approaches, but across the board we observed an increase in the level of customer engagement within the price control process with differing levels of involvement and impact. Encouragingly, there has been a degree of ‘learning by doing’ between the regulators, including:

- Mitigating the risk of capture by increasing the transparency of arrangements governing company-based customer engagement groups. This has progressed from their initial use in PR14;
- The use of bespoke outputs that acknowledge local and regional differences have been implemented and used as a basis for common outputs across companies;
- The use of business plan incentives to set a company CE baseline standard.

Some companies have met the challenge of this step-change, recognising the company and customer benefits of customer-focused investments. For these companies, their perception of the regulator’s role is to benchmark the costs of projects across companies and to settle disputes, should they arise, between the companies and the independent engagement groups, rather than comment on the companies’ investment decisions arising from the CE (INT11, INT12). This type of (de)regulation is closer to that envisioned by Littlechild [7] and Pollitt [8], where the company investment decisions are locally focussed and backed by robust CE, with the regulators remit to ensure the efficiency of the required expenditure.

However, although Ofgem has encouraged a level of company CE, the determination of the price control remains a technocratic regulatory function within the regulatory agency. It could be argued that ambiguity around how CE is valued by Ofgem in the price control determinations has reduced the role and value of CE in investment decisions. Confusion over the role of CE in the RII02 draft determinations saw some companies who were considered

1 to have adopted ‘best practice’ by their CEG go unrewarded, but an incentive given to those  
2 who may not have achieved more than a basic standard of CE [see 44]. There are significant  
3 risks arising from this ambiguity, as companies may review the costs of CE relative to the  
4 rewards. It could also see an increase in complaints to the Competitions and Markets  
5 Authority (CMA) [3,18], as evidenced by recent developments in the water sector [51].  
6 Despite these ongoing issues, there is little doubt that the changes in energy (and water)  
7 regulation over the last decade have resulted in an increased focus on the customer in  
8 network company decisions. Overall, the results of the regulatory experiment have been  
9 positive.

10 The future development of CE will be dependent on the evolution of the energy system, with  
11 the more deregulated price control, as mentioned above, perhaps suiting a more decentralised  
12 energy system. The years covered by the RIIO2 price control are pivotal as the energy system  
13 and its governance evolves to meet decarbonisation targets. Therefore, focusing on the energy  
14 sector, we identify key challenges which will shape CE in its next decade, should it move  
15 from an experiment to become more embedded in the regulatory framework:

16 1 *Clarify the role and remit of CE:* While there may have been a degree of ‘constructive  
17 ambiguity’ at work while CE was in its early ‘experimentation’ phases and becoming  
18 established, for it to play a meaningful role in more fundamental energy network  
19 transitions, its position and status within the regulatory model needs to be clarified.  
20 Relatively low-risk experimentation has allowed for some positive change, as in some  
21 cases CE has become embedded within the company ethos. Yet, the risk of ambiguity is  
22 that companies can also maintain conservative business strategies as RIIO has been  
23 ‘layered’ [53]; CE, innovation, incentives and outputs have been added to the original  
24 RPI-X framework, with short term efficiency improvements still the basis of significant  
25 revenue earnings [e.g. 19]. Heims and Lodge [31] view this as a hybridisation of the  
26 ‘technocratic’ and ‘collaborative’ model, suggesting that this layering increases the  
27 regulatory complexity and the scope to game the system. Although there may be benefits  
28 from access to distributed expertise, layering has added complexity that may not reduce  
29 the ‘*overly bureaucratic and cumbersome*’ (INT8) process that RIIO was set up to  
30 overcome [31], suggesting that if Ofgem wishes to reduce regulatory gaming then  
31 creating new simplified frameworks may be required. Taking lessons learnt from the  
32 results of the regulatory experiment, decisions will need to be made on the type of model

1 that shows greater benefits for the customer and for meeting decarbonisation targets,  
2 whether this is based on technocratic processes or more collaboration.

3 2 *Building trust:* In the results from the recent draft determinations for gas distribution,  
4 many of the outputs suggested by the companies, based on their CE and agreed upon by  
5 both the CEGs and CG, were then dismissed by Ofgem, with only one company  
6 achieving an incentive. This suggests that Ofgem has limited trust in the CE processes  
7 they have put in place and has caused some companies to question the costs relative to  
8 the rewards of the enhanced engagement (INT4, INT12). As discussed, while the  
9 regulators have developed CE strategies, how the results of CE are valued as a regulatory  
10 tool differ, possibly due to a concern about the risk that customer representatives could  
11 be ‘captured’ by the companies. The ‘double layer’ of challenge provided by the central  
12 Challenge Group should have reduced the possibility of capture or perceived capture.  
13 Also, drawing lessons from Ofwat’s transparent governance arrangements for the CEGs  
14 and CG could have increased Ofgem’s trust that the CEG approved investments were  
15 based on ‘good CE’. It should be noted that the network companies are not blameless in  
16 the lack of trust; a constant cycle of apparent ‘gaming’ the regulator and information  
17 asymmetry – where the networks hold the majority of the information related to  
18 investments and costs – has eroded trust between the regulator and the companies [e.g.  
19 54,55]. The RIIO framework has seen a move towards outcome-based regulation, whilst  
20 RIIO2’s Enhanced Stakeholder Engagement Strategy, using CEGs and bespoke outputs,  
21 has increased collaboration, so providing legitimacy, democracy and rigour [56] to the  
22 regulatory process. However, there appears to be a reluctance to accept the ‘public’ [57]  
23 or the ‘collaborative’ [31] value of the CE process. Making CE more robust could  
24 involve a more structured dialogue between Ofgem, the companies and CE practitioners  
25 to build trust in the process.

26 3 *Beyond customers:* It is increasingly recognised that the challenges posed by  
27 decarbonisation may involve distinctive local or regional solutions, suggesting a further  
28 change in focus for the energy networks and regulation [42,58]. Traditionally, for the  
29 distribution networks, ‘customer’ meant the end-user – the domestic or business  
30 customer who received energy at the end of the distribution grid. However, as the energy  
31 system becomes more decentralised, the electricity distribution ‘customer’ now includes  
32 a new set of stakeholders, such as aggregators and small-scale generators, and the once  
33 passive domestic ‘consumer’ is now able to generate, store and trade energy, and become  
34 an active and engaged ‘prosumer’. A key challenge for CE is how these non-traditional

1 actors are incorporated into the process, given that they often straddle traditional divides  
2 between asset ownership and consumption. Also, through the development of local  
3 energy plans, local authorities in the UK are increasingly important stakeholders in the  
4 future of energy networks. Recent developments in CE can provide a basis for this type  
5 of engagement, as with company-based CEGs and bespoke incentives, there is potential  
6 to recognise the place-based nature of solutions and the wider set of stakeholders that can  
7 shape them. A positive development in this regard has been Ofgem’s recommendation  
8 that the distribution networks should take regard of Local Area Energy Planning (LAEP)  
9 when creating their business plans. Due to the challenges of benchmarking across  
10 increasingly differentiated networks, this type of local-based planning may see regulation  
11 for distribution networks evolve towards a more collaborative *negotiation plus* model, as  
12 a solution to meeting the distinctive challenges of local and regional energy systems.  
13 However, Ofgem has also recently stated they would be more open to accepting bespoke  
14 incentives only if they can be considered as common across all network areas. This  
15 mixed messaging highlights the ambiguity within Ofgem between recognising the value  
16 of decentralisation, with CE providing bespoke solutions to place-based challenges, and  
17 still wishing to have a centralised framework and control over the regulatory paradigm.  
18 These tensions are not easily resolved and will likely take further iterations of CE to find  
19 an effective balance between centralised and decentralised regulatory processes.

## 20 **7 Conclusion**

21 In a recent webinar (September 2020), the Ofgem CEO Jonathan Brearly recognised the ‘*rich*  
22 *source of information*’ obtained from the transmission and gas distribution round of RII02  
23 and stated that the CEGs role would ‘*absolutely come alive when we talk about local*  
24 *electricity networks*’ [59]. If current regulatory practices are framed as regulatory  
25 experimentation, then the lessons learnt from the results of this round of RII02 ‘experiments’  
26 should be implemented for the upcoming ED2 price control (RIIO for electricity distribution  
27 will come into effect in 2023). Actors involved in the CE process would benefit from further  
28 clarification of what they are expected to achieve and how they will be valued, prior to the  
29 business plan deliberations. If the company CEGs have stated that companies CE processes  
30 have been followed according to ‘best practice’ standards, similar to those achieved by the  
31 fast-track companies in RII01, then Ofgem should trust in these processes so companies can  
32 focus on delivering the outcomes their customers request, so cementing trust in the  
33 relationship between company and customer.

1 Further, recognising that a wider set of actors now have a stake in the future of the  
 2 distribution networks, CE allows the traditional customer, new prosumers and local  
 3 authorities a voice in the formulation of network companies' investment strategies. As the  
 4 energy system becomes more decentralised, so the value of CE increases as customers and  
 5 other stakeholders in the distribution system, offer local and regional solutions to meet  
 6 national decarbonisation challenges. Accessing distributed expertise and incorporating a  
 7 range of perspectives will enable a better understanding of the nature and pace of change  
 8 across increasingly differentiated energy regions and localities, moving towards the more  
 9 adaptive and reflexive regulatory model needed for a transitioning energy system.

10

## 11 **8 Appendix**

### 12 **Key documents used for qualitative analysis**

13

<i>Key documents</i>		
<i>Review Documents</i>	<i>Ofgem</i>	<i>Ofwat</i>
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Frerk, M., 2016. Consumer Engagement in the RIIO Price Control Process Review.	Regulating energy networks for the future: RPI-X@20 Emerging Thinking-Enhanced engagement. (2010)	Involving customers in price-setting – Ofwat's customer engagement policy statement. (2011)
Darcy, S., Darlington, R., Eyre, S., Graham, C., Heims, E., Littlechild, S., Lodge, M., Mcauley, T., Moriarty, R., 2016. Customer engagement in regulation. London.	Guidance-RIIO-2 Enhanced Engagement Guidance Document Version 2. London. (2019)	Ofwat's customer engagement policy statement and expectations for PR19. (2016)
Heims, E., Lodge, M., 2018. Customer engagement in UK water regulation: towards a collaborative regulatory state? Policy Polit. 46, 81–100.	RIIO-ED2 Methodology Decision: Overview. (2019)	Delivering Water 2020: our final methodology for the 2019 price review. (2017)
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