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Dear Jon,

**Comments on Ofgem’s “Getting more out of our electricity networks by reforming access and forward-looking charging arrangements”**

**Submission from Rachel Bray and Catherine Mitchell, Energy Policy Group, University of Exeter**

## **Summary**

Running the energy system costs society and the customer a certain total amount every year. That sum of that cost is currently derived in a particular way – transmission costs, distribution costs, including charging costs, wholesale market costs etc – and via a certain methodology and regulatory mechanism and then paid for via customer bills before finally being reimbursed to different parts of the energy system by suppliers.

This is a top down, centralised, passive customer approach and no longer fit for purpose. Most of the Ofgem consultations recognise that the energy system is changing and recognise that there are ‘challenges’ in delivering a decarbonised energy system – even if they do not baldly say that the current rules are not fit for purpose. However, the

consultations then tend to put forward suggestions based on the conventional framework of organising and costing the energy system. Such is the case of this access and charging review.

Given we are trying to transform our energy system, then we also need to ask whether the way that we deliver energy and run the energy system is still the right way or whether we could deliver public policy goals by organising and costing the energy system in different ways. Unfortunately, the access and charging review consultation does not ask this question.

Delivering a decarbonised, smart and flexible energy system is increasingly a very inter-linked process because of decarbonisation, digitalisation and decentralisation (as set out in Figure 1 below) most particularly coming together at the local level. This new local reality requires coordinating between energy vectors (heat, electricity, mobility) across different levels (local and national; distribution, transmission) via supply, storage and the demand side.

EPG / IGov simply does not believe that these needs and this system operation complexity [to deliver a cost-effective, secure, affordable, equitable energy system] can any more be delivered via wholesale markets and separated regulatory activities, including a regulatory activity related to network charging. We believe that there needs to be more coordination between governance, scales and vectors. We think that an essential piece of this coordination are local, area based coordinators (see refs below) – and it should be up to these local coordinators how they charge for the distribution network, depending on what suits the area, given all of the issues set out in Figure 1 below. This allows the local coordinators to be much more dynamic in terms of charging and more flexible to change and unintended consequences. The regulated access and charging activity of Ofgem should be folded within the regulatory mechanism activity of RIIO2, and that regulatory mechanism should be more output based and more related to public policy goals – set out in numerous IGov working papers, blogs and journal articles (see refs below).

We do think that residual charging has different issues – and these probably should be socialised across customers.

We also think that transmission and distribution issues are very different, and can be treated differently.

We do think however that high level charging principles have major distributional impacts, and that these principles need to be decided by Government not the Regulator. In this way, we think that the access and future charging activity of Ofgem is inappropriate: (1) from a policy and distributional impact point of view; (2) because we do not think that it should be a separate regulated activity; and (3) because we believe that the Charging Futures Programme is direction-less because there is no overarching framework to fit it in to.

## Introduction

The Energy Policy Group (EPG) of the University of Exeter welcomes the chance to comment on Ofgem's consultation document "Getting more out of our electricity networks by reforming access and forward-looking charging arrangements."

It is acknowledged that Ofgem has undertaken a great deal of work in reviewing access and forward looking charges; alongside other factors which make up the Charging Futures Programme.

We absolutely agree that sorting out access and forward-looking charges are a central part of undertaking the energy system transformation – one capable of meeting the Committee on Climate Change budgets as cost effectively as possible, securely and on time. Similarly, how to pay for the residual network costs – effectively the money already spent on networks and which need paying back – also needs to be sorted out.

However, we feel that Ofgem has missed the opportunity to link this central issue to the other key challenges of transforming the energy system. Yes, the consultation document lists what other consultations and programmes of work are being undertaken by Ofgem but it does not raise fundamental issues. For example, (1) what kind of regulatory mechanism should be in place – and what does this mean for access and charging; (2) what institutional arrangements would most suit an energy system transformation, and how would they affect access and charging? (3) Nor does it set out the various access and trading arrangements we could have in GB and then explore the what implications each might have for a regulatory mechanism or on institutional arrangements.

Moreover, there is an almost complete lack of description about where all of Ofgem's activities are meant to be getting to, and therefore the specifics of the challenges in doing this. We would argue that that regulation has to complement the delivery of a smart and flexible energy system which meets the Committee on Climate Change budgets<sup>1</sup>: decarbonising electricity by 2030 and decarbonising heat by 2040 in a world which is digitalising and where the economics of decarbonisation are supporting decentralisation – as much to do with heat and mobility as electricity, and as much to do with the demand side as supply.

Ofgem are leading the other substantive initiatives such as the review into the Future Supply Market arrangements and RIIO2; as well as providing insight to the Open Networks Project – all of which have the capacity to deliver change in the operation of our electricity networks and the way in which they are used in future. All of these initiatives are part of the same puzzle; and should be considered as complementary to achieving the same outcomes.

We agree that how to pay for networks going forward is a central issue. But decisions on how to do this have major distributional impacts and it should be Government that makes these decisions not Ofgem. Both the access and future charging consultation and the

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<sup>1</sup> <http://projects.exeter.ac.uk/igov/new-thinking-more-ambition-needed-for-riio2-outputs/>

residual charging area of work have managed to avoid dealing with fundamental issues, possibly because Ofgem understand that it is not their place to take them.

The starting point in any deliberations should have been ‘what outcome are we trying to achieve’ and are the conventional means of doing this (ie what we have been doing for the last nearly 30 years) right given the almost complete difference in technologies and economics?

Running the energy system costs society and the customer a certain amount every year. That sum of that cost is currently derived in a particular way – transmission costs, distribution costs etc – and via a certain methodology and then paid for via customer bills and then reimbursed to different bits of the system by suppliers. This is a top down, centralised, passive customer approach and no longer fit for purpose. Most of the Ofgem consultations recognise these changes and recognise that there are ‘challenges’ in delivering a decarbonised energy system – even if they do not baldly say that the current rules are not fit for purpose. However, the consultations then tend to put forward suggestions based on the conventional framework as the means to organise and cost the energy system. Such is the case of this access and charging review.

Given we are trying to transform our energy system, then we also need to ask whether the way that we work out the total cost to customers is still the right way or whether we could deliver public policy goals by organising and costing the energy system in different ways.

Moreover, with this particular consultation, only an economic viewpoint is set out. It appears unrelated to Ofgem’s role in delivering public policy. We understand Ofgem’s difficulty in this – both given the absence of a Strategic Policy Statement<sup>2</sup> but also the overarching not-fit-for purpose GB decision-making process within GB energy governance<sup>3</sup>.

Our view is that *instead* of Ofgem accepting that all it can do is continue with what it can do within its Duties and in the absence of an SPS, it *should* endeavour to create a national debate about what is needed to transform to a decarbonised energy system; what its role should be in this; and whether it needs to change its Duties etc.

We accept that Ofgem does not have to do this but we see this as the ‘honest’ and ‘mature’ approach to raising a discussion about the role of regulation in this rapidly changing world.

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<sup>2</sup> <http://projects.exeter.ac.uk/igov/new-thinking-the-lost-strategy-and-policy-statement/>

<sup>3</sup> IGovI kicked off (2014) with a paper about the challenges that faced the GB energy system, and the type of governance framework which was needed to deliver solutions for those challenges <http://projects.exeter.ac.uk/igov/wp-content/uploads/2014/03/WP-7-Change-and-Inertia-in-the-UK-Energy-System.pdf> ; IGovI ended (November 2016) with a fit-for-purpose governance framework document: <http://projects.exeter.ac.uk/igov/paper-gb-energy-governance-for-innovation-sustainability-and-affordability-2/>; The end of IGovI conference had final presentations <http://projects.exeter.ac.uk/igov/category/events/igov-events/energy-governance/> ; A simplified fit-for-purpose IGov approach was presented in October 2017: <http://projects.exeter.ac.uk/igov/wp-content/uploads/2017/10/SYS-Copenhagen-27-October-2017.pdf>; And a further iteration of getting the framework right with a post supplier hub model was presented in April 2018: <http://projects.exeter.ac.uk/igov/wp-content/uploads/2018/04/CMitchell-presentation-WEET-Forum-26-April-2018.pdf>

What we do not think is a good idea is Ofgem carrying on, carefully, within its Duties in such a way that it continues not to ask the 'real' fundamental questions of energy system transformation within its various Consultations but only asking those which allow a solution which do not require any particular change of role for the regulator (or any other system actor) or regulatory methodology. This access and future charging consultation is entirely reflective of this disappointing approach, and – as with everything within our energy system – paid for by the customers that Ofgem is meant to be doing its best for.

Had Ofgem asked 'what do you want to achieve' to deliver the necessary, regulatory complements of key Government policy objectives (such as the Clean Growth Plan and the Climate Change Act and given the current and projected state and economics of technologies and user preferences) we believe that this current consultation would have looked very different.

Indeed we are of the belief that the current proposals identified could seriously damage consumer confidence in investment in domestic solutions such as heat pumps, solar (heat and electricity) and EVs; whilst the addition of TNUoS charges proposed for distributed generators will cause further financial impact on a section of the industry that has already seen increased costs following your earlier decision on embedded benefits – all without actually asking any fundamentals about whether carrying on with the basic system of charging is appropriate – which, in our view, it is not<sup>4</sup>.

### **Access and Charging in a Decarbonising, Decentralising, Digitalising World.**

Distributed energy resources (DER) and distributed energy technologies should be encouraged if GB is serious about cutting carbon emissions and delivering a smart and flexible energy system in time to meet the Committee on Climate Change budgets. Large scale technologies such as offshore wind connected to transmission alongside interconnectors and DER within the distribution networks should exist in a dynamic system operation where anyone can buy from who they wish and anyone can sell to whom they wish. The separated, linear, one-way, top down, passive customer, limited business model world we have had in the past has already gone in GB – even if everyone is still required to find value in the system of costs and payments set up to reflect the value in a centralised fossil fuel and nuclear world.

Ofgem and its regulation needs to take account of the fact that we are trying to get from A to B, which means we need to think about total costs to the customer in a dynamic way. The consultation is unremittingly siloed, short-term and static in its approach. Moreover, its proposals hard-wire in a lack of flexibility by its one size fits all 'rules'.

By viewing the move to a decentralising and digitalising energy system as a negative disruption, which needs to be paid for by the disruptors, the consultation is continuing the conventional costing methodology of DER as 'negative demand'. Access and charging has to be set within an energy system where rising levels of DER is part of the change; and - particularly given users customers want it – welcomed. Additional charges for EVs, solar etc can be expected to deliver the unintended consequences of network flight and the increase

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<sup>4</sup> <http://projects.exeter.ac.uk/igov/new-thinking-ofgem-has-to-be-reformed-if-gb-is-to-meet-its-energy-policy-goals/>

of behind-the-meter solutions – and this will only have the consequence of fewer network connected customers left sharing the costs of keeping the networks running. The answer is therefore to have a new area- based costing and charging methodology, and we argue this has to be via distribution market facilitators and coordinators<sup>5</sup>.

We are particularly disappointed that you have discounted the option of area-based local energy markets as being 'too complex'; and that you have not considered reduced DUoS charges to enable customers to realise financial benefits for purchasing local energy supply. Surely if we are to encourage innovative local solutions (such as those championed through your Future Supply Market arrangements and Innovation Sandbox), the financial mechanisms to underpin and motivate these solutions should have been considered within this consultation as well?

### **Access and Network Charging should not be a separate regulated activity**

It seems to us that in this changing energy world distribution is going to become a much more important centre of transactions – to do with heat, mobility and electricity – as well as related to system capabilities such as flexibility.

We recognise that how to charge for network usage going forward is a major issue. At the moment, the networks business plan, or price control settlement, is based on what changes can be expected to the network infrastructure and the expected demand over the next price control. This will depend on the types of technologies attached to it; how those technologies access the networks and how they use the network.

For example, if 30% of domestic houses have onsite solar and storage, there will be a very different usage of the electricity system than if there is only 1% of households with onsite solar and storage. This has several implications, including that ownership is probably different. It might also lead to more P2P trading between one household and another.

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<sup>5</sup> January 2016 An early discussion of what a DSP is <http://projects.exeter.ac.uk/igov/new-thinking-energy-distribution-service-providers/>; May 2016 IGov had a roundtable to discuss the concept of the DSP <http://projects.exeter.ac.uk/igov/category/events/igov-events/dsp-roundtable/page/2/>; June 2016 <http://projects.exeter.ac.uk/igov/presentation-distribution-service-providers/> (presentation to Inter America Bank); July 2016 Comparing NY REV to RIIO and arguing that the transformational nature of the NY REV was related to the DSP concept <http://projects.exeter.ac.uk/igov/new-thinking-transformational-regulation-comparing-the-ny-rev-riio/> ; Slidepack (last updated December 2017) <http://projects.exeter.ac.uk/igov/wp-content/uploads/2016/04/Distribution-Service-Providers-Update-Dec-2017-1.pdf> ; June 2017 DSP and DER valuing in NY and CA - <http://projects.exeter.ac.uk/igov/comparing-nys-with-ca-blog-5-a-ca-and-nys-similarity-mapping-der-via-a-regulated-process/>; July 2017 International experience of decentralised markets, Pixie Launch <http://projects.exeter.ac.uk/igov/wp-content/uploads/2017/07/CM-Pixie-Launch-July-2017.pdf>; 2017 <http://projects.exeter.ac.uk/igov/wp-content/uploads/2017/10/Exeter-EPG-response-to-WPD-DSO-Transition-Consultation.pdf>; Feb 2017 the difference between DSOs and DSPs <http://projects.exeter.ac.uk/igov/wp-content/uploads/2017/02/PRASEG-28-Feb-2016.pdf> ; June 2017 why the distribution function is more important than the name <http://projects.exeter.ac.uk/igov/comparing-nys-with-ca-blog-6-dso-or-dsp-why-it-is-the-function-rather-than-the-name-that-really-matters/>; March 2017 Reset the reset (3 blog series) looks at the DER assessment process in CA and NY: Blog 1 <http://projects.exeter.ac.uk/igov/new-thinking-reset-the-reset-1-we-need-institutional-governance-reform-and-we-need-it-now/> and Blog 3: <http://projects.exeter.ac.uk/igov/new-thinking-reset-the-reset-3-der-walking-the-walk/>

But it is not just technologies, and their numbers which will effect network charging. It is also decisions about institutions. For instance, will the DNO continue as a only slightly updated active model – a DSO – by the end of RIIO2<sup>6</sup>? Or will there be a distribution market facilitator (i.e. the IGov proposed DSP model) which is also a local coordinating and balancing market? We think the latter is the essential, cost effective model for the move to a transformed energy system.

If so, it will be essential that the DSP is incentivised in such a way that it incentivises new behaviours / functions of the DSP itself and of its customers and its service providers; thereby turning the current ‘passive’ distribution utilities into ‘active’ market facilitators, aggregators of DER and balancers at the local area level and system coordinators/managers. This would be a performance based regulatory mechanism, where outputs are the key focus of the incentives. This would lead to new energy economics – because a new value which can be captured, allows new services to be provided. For example, this may lead to a substantially different amount of domestic demand side response. That would also imply a very different use of the transmission network.

This network charging depends not just on the institutional decisions but on decisions about the type of regulatory incentive mechanism that is employed. Output based, performance based regulation (PBR) of 50% rather than 6.5% (as RIIO is now) will lead to different use of the network. If networks are regulated to complement public policies, such as energy efficiency, then there may be a very different total use of energy – this may lower peak capacity requirement, or lead to a lower average peak price (which is good for customers) and which may cause more expensive generation to exit the market.

Network use also depends on tariffs that suppliers set. Suppliers currently have to be prepared to supply nationally, but there could be simple ‘local’ suppliers only, who only supply within a certain GSP. That would change both DER production and use. The same applies to aggregation rules. An aggregator / supplier could offer local tariffs for electric vehicles, for a particular place, for a particular time. This would affect both the use of the network, and its development. All tariffs anyway impact the use of networks. Imagine a world where there are specific tariffs for EV users. We are entering a world where only one supplier provides water, energy, EVs, internet and so on. Tariffs have huge implications for network use, infrastructure needs, and total whole system costs to customer.

These different dimensions which affect network costs are set out in Figure 1.

Currently, our network charging is very simple and set up for fossil and nuclear power plants connected to the transmission network. Distribution access of DER (supply and demand) is far more limited. There are myriad possibilities coming down the road to network charging – and they depend on customer preferences; public interest attitudes; value provided via markets and institutions for flexibility or energy efficiency; the type of institutions in place; the type of regulatory mechanism in place; the type of tariffs in place; and the type of markets.

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<sup>6</sup> <http://projects.exeter.ac.uk/igov/new-thinking-more-ambition-needed-for-riio2-outputs/>

Delivering a decarbonised, smart and flexible energy system is increasingly a very inter-linked process because of decarbonisation, digitalisation and decentralisation (as set out in Figure 1 below) most particularly coming together at the local level. This new local reality requires coordinating between energy vectors (heat, electricity, mobility) across different levels (local and national; distribution, transmission) and via supply, storage and the demand side.

EPG / IGov simply does not believe that these needs and this system operation complexity [to deliver a cost-effective, secure, affordable, equitable energy system] can any more be delivered via wholesale markets and separated regulatory activities, including a regulatory activity related to network charging. We believe that there needs to be more coordination between governance, scales and vectors. We think that an essential piece of this coordination are local, area based coordinators (see refs below) – and it should be up to these local coordinators how they charge for the distribution network, depending on what suits the area, given all of the issues set out in Figure 1 below. This allows the local coordinators to be much more dynamic in terms of charging and more flexible to change and unintended consequences. The regulated access and charging activity of Ofgem should be folded within the regulatory mechanism activity of RIIO2, and that regulatory mechanism should be more output based and more related to public policy goals – set out in numerous IGov working papers, blogs and journal articles (see refs below).

We do think that residual charging has different issues – and these probably should be socialised across customers.

We also think that transmission and distribution issues are very different, and can be treated differently.

We do think, as said above, that high level charging principles have major distributional impacts, and these need to be taken by Government not the Regulator.

## **Conclusion**

Overall, therefore, we believe that the Charging Futures Programme is putting the ‘cart before the horse’ in developing short-term economic options without a clear sustainable framework setting out the future direction and goals.

**Figure 1 The Inter-locking Dimensions of Network Costs**

