

To: costofenergy@beis.gov.uk

22nd December 2017

Please reply to:

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Dear BEIS

Call for evidence on Cost of Energy Review

1. I am responding to this Call for Evidence on behalf of environment think tank Sustainability First. Sustainability First is a small charity that works in the energy, water and waste sectors. We have significant experience of consumer and public interest issues, regulation and the demand side (see www.sustainabilityfirst.org.uk).
2. Our response draws heavily on the work of Sustainability First Associates Maxine Frerk, whose blog on the Review is attached at **Annex 1**, and Jon Bird, who has written several recent papers for Sustainability First on the issue of electricity pricing and sticky customers.

Summary

3. Sustainability First would like to make the following general observations:
 - We support the need to move beyond an incremental approach to change and to develop frameworks for the energy sector that will enable innovation and flexibility and deliver **long-term public interest outcomes**.¹
 - However, the **practical challenges of implementing such wide-ranging changes** need due consideration. BEIS are clearly not starting with a blank sheet of paper. There are costs (both in terms of resources and time) entailed in changing interconnected systems that need to be recognized. A coherent approach to change is needed that recognizes these and prioritises the areas where the greatest benefits to the long-term public interest are likely to sit.
 - A greater focus on **tendering and contracts** can clearly deliver many benefits including lower short-term costs. However, this needs to be balanced against

¹ Sustainability First's New Energy and Water Public Interest Network (New-Pin) has created a dashboard of desired long-term public interest outcomes for the sector. See slide 49 http://www.sustainabilityfirst.org.uk/images/publications/new-pin/New-Pin_Market_approaches_workshop_22_Feb_2017_FINAL_REVISIED_SLIDE_SET.pdf

- the impact on other long-term public interest outcomes and how a more disaggregated approach is able to deal with systemic risks.
- Despite its name, the Review is primarily focused on electricity. To take a systems wide look at the issues raised, **heat decarbonisation** needs to be taken far more fully into account.

Detailed comments

What matters should the Government take into account in considering the policy framework for electricity generation?

4. Simpler mechanisms for dealing with security of supply are attractive. However, once you take into account the need to deal with the issues flagged in the report, such as cyber risk, the uncertainty surrounding nuclear and auctions to deal with carbon, there is still going to be some **complexity**. The Review's proposals in this area need to be seen in the round and understood in terms of their impacts at a systems level.
5. The Review pays close attention to the issue of **legacy costs** including the relative cost of finance at different stages with construction being high risk and demanding equity level returns while the ongoing operation is much lower risk and can be largely debt financed. This is the basis on which offshore transmission projects have been funded to date. It is this, probably more than the competitive tendering process itself, that has helped deliver the low cost of capital for these projects. Exploring **how renewable projects could be re-financed to benefit consumers** is an avenue worthy of exploration.
6. **Exempting industrial and commercial customers from legacy costs** and from 'paying for clean energy', when they have considerably more ability to manage these and expertise to challenge expenditure, does not appear fair. Although legacy costs are in effect a tax and are not necessarily linked to usage, if large customers are not faced with these costs, in the *long-term* if not faced with these, they may potentially have less strategic incentive to develop sustainable business models that are lean, circular, integrated and social.²
7. One of the areas that can have a significant impact on the wholesale market that is omitted from the report is **ancillary services**. The shift away from fossil fuel generation creates various technical operational challenges for the SO in terms of reduced inertia on the system, levels of reactive power etc. Renewable generators and storage can provide these services but only if they are rewarded for doing so as there is a cost involved. Two years ago when some of the larger fossil fuel plant

² https://volans.com/wp-content/uploads/2016/09/Volans_Breakthrough-Business-Models_Report_Sep2016.pdf

failed to get a capacity contract it was kept on the system by National Grid offering contracts for Black Start services. There isn't a problem fitting such ancillary services into the Review's model and auctions – which the Review generally supports - have helped keep the costs down. However, this is another layer of complexity that the Review has been able to skirt over but which will become increasingly important in the new world.

What matters should the Government take in account in considering the framework for network regulation, and its associated institutional framework?

8. The Review proposes the creation of national and regional systems operators (NSOs and RSOs). Whilst there is logic in this, it would entail significant **disruption**. Careful analysis is needed to ensure that the costs of any change would not outweigh the benefits. The case for change may well be stronger for a NSO compared to a DSO / RSO.
9. The Review proposes that the NSOs / RSOs would be able to **contract** for storage and flexibility services etc. Sustainability First's New Energy and Water Public Interest Network (New-Pin) has examined the '**pre-conditions**' that may need to be met for such market approaches to be effective in delivering the long-term public interest.³ These tests would clearly need to be met for the proposed changes to deliver the benefits envisaged.
10. More thought is needed as to: **what a NSO / DSO / RSO function would entail** (eg DSO's keeping loads below the capacity of the network); the level of separation that would be required; what would be included and excluded from any tendering process; and how to ensure the proposed arrangements are able to deal with systems based – and not just project based – change. An **holistic view** is needed here as to what the impacts will be on public interest outcomes; not just the efficiency of individual parts of the system or ad hoc contract / tender arrangements. This needs to look at short, medium and long-term impacts.
11. In this analysis it will be important to recognise that **the counter factual is not the status quo**. The move to totex in RIIO and the trials of various DSO models under the Electricity Networks Innovation Competition (ENIC) process is already starting to change practice on the ground.⁴ These trials need to be given the 'breathing room' to be fully tested.

³ See slide 25 http://www.sustainabilityfirst.org.uk/images/publications/new-pin/New-Pin_Market_approaches_workshop_22_Feb_2017_FINAL_REVISIED_SLIDE_SET.pdf

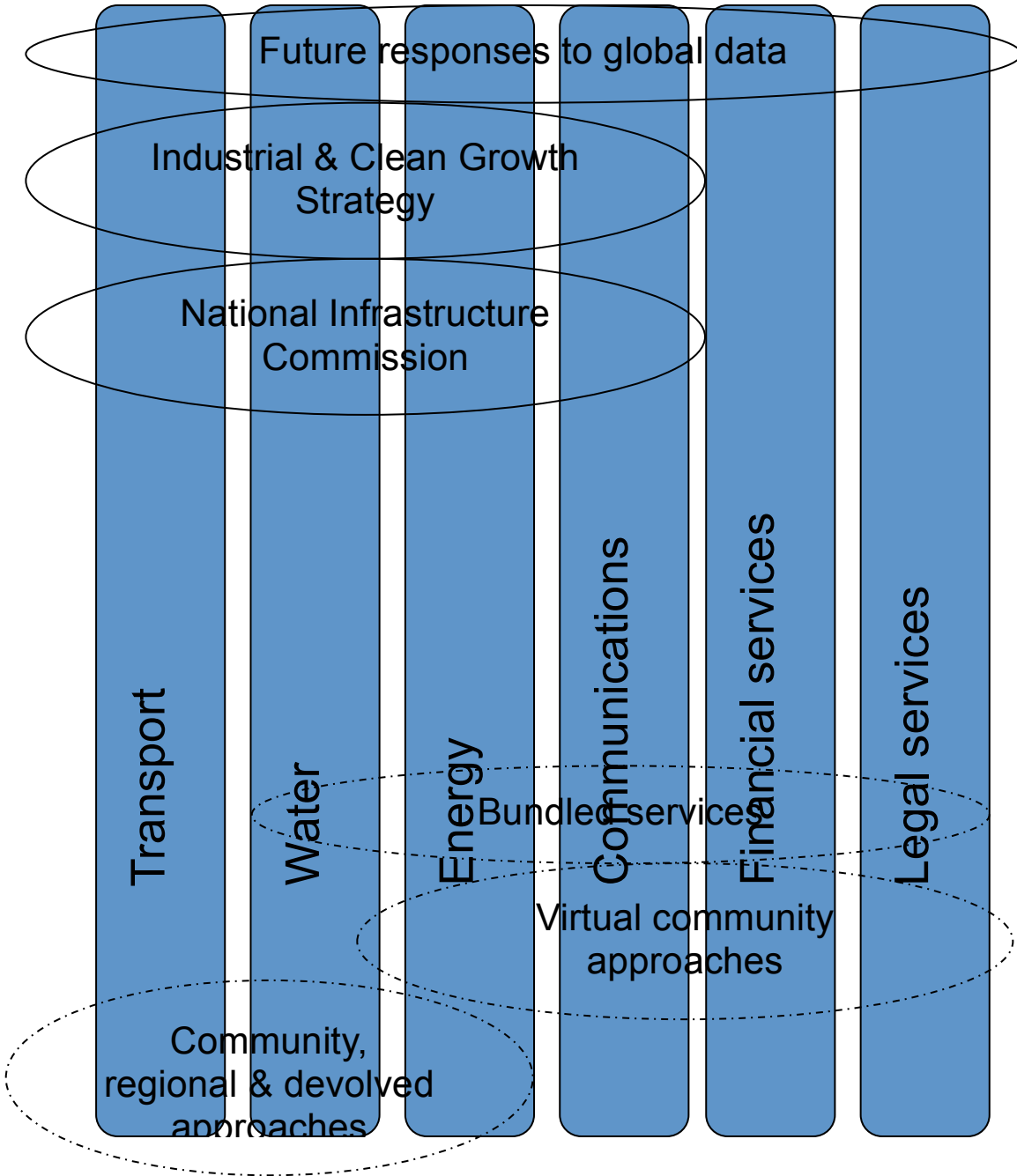
⁴ For example, SSEN's Project TRANSITION will design and demonstrate the tools needed to deliver the Distribution System Operator (DSO) models being proposed by the ENA TSO-DSO Open Networks Project. The project TRANSITION aims to de-risk and facilitate the transition from DNO to DSO

12. Activity in this area does, however, need to take account of the importance of establishing robust and transparent **governance processes** for any new arrangements. Maintaining public confidence in governance is vital if consumers and communities are going to really become part of the solution to the smart, flexible energy future and are not just seen as a problem that needs managing. Sustainability First's work on governance and the long-term public interest may be helpful here.⁵ This work also outlines how boards and regulators can deal with the challenges around excess returns.
13. The Review argues that given the uncertainties surrounding network activity, **price reviews** may no longer be necessary. Regulation clearly needs to significantly adapt to a more uncertain and flexible environment. A more principles and outcomes based approach can help here. However, given the on-going monopoly nature of much network activity, it is unlikely that the need for some form of price review will disappear completely.
14. It is also important to acknowledge that the RIIO regime has driven improvements in **reliability and customer service**. The experience of other sectors, such as rail, where franchises have been awarded to run services, have frequently not been positive in these areas.
15. The Review highlights the possibility of Ofgem's role being carried out by a **general utility network regulator** (page 198). There is clearly much benefit to be gained from co-operation between regulators on network issues. However, Sustainability First's New-Pin Network has shown that there are also significant differences between even just the energy and water sectors. This proposal also begs the question of what would happen to the regulation of energy retail activities. The need for this is unlikely to wither away completely and general competition bodies may be unable to provide the proactive approach and / or tailored sector specific action that may be needed.
16. It also needs to be balanced against the disruption that this would cause. If change is going to be introduced in this area, it needs to be sufficiently 'future proofed' to ensure that the wider disruptive changes impacting on the sector are also taken into account. This is illustrated in Diagram 1. It is worth noting that change to address these issues may not necessarily lead to the financial savings that some may be looking for.

⁵ http://www.sustainabilityfirst.org.uk/images/publications/new-pin/New-Pin_-_Board_Governance_Summary_Conclusions_-_FINAL.pdf . In 2018 we will be launching 'Project Compact' which will look at these issues in more depth.

Diagram 1: What does disruptive change mean for UK energy regulation? The wider context

Some potential examples of how pressure from top down global and national 'citizen' issues and multiple 'bottom up' approaches may impact sector specific consumer regulators



Source: Sustainability First

What matters should the Government take into account in considering the longer-term operation of the retail market?

17. Two key issues need to be addressed in any policy proposals for the future operation of the retail electricity market: how to deal with 'sticky' or disengaged customers, and how costs should be recovered in tariffs.
18. The belief that electricity and gas **customers can become less 'sticky'** and more engaged in their energy purchasing underpins the CMA's remedies following its investigation of the energy market. Engagement is also central to Government thinking, both on the customer benefits from the smart meter roll-out, and on the future for low-carbon energy, as reflected in the recently published Smart Systems and Flexibility Plan⁶ (in particular, Issue and Action 2.12).
19. True customer engagement is very different to the **focus on customers switching** suppliers that has characterised much energy discourse since privatisation. As the flexibility from demand side response becomes increasingly important, to be successful, market actors will need to be increasingly adept at meaningful customer engagement and encouraging people to use a range of energy services and automated appliances.
20. A recent Sustainability First paper⁷ explored the issue of disengaged customers in relation to energy pricing, both in today's market as investigated by the CMA, and in the future smart energy market. The paper proposed **two key 'objectives' to test how far pricing arrangements are fair to all customers**, both now and in the smart world. These are whether pricing approaches: (1) encourage companies to price competitively and to innovate to meet the changing needs of the market, and (2) avoid particularly unfair pricing for any domestic customer.
21. The paper examined the impact of different pricing approaches on three groups of customers: those willing and able to engage, those able but unwilling to engage, and those unable to engage. It concluded that, in today's energy market, Professor Helm's proposal for a default tariff comes closest to meeting these objectives.
22. For the longer term, the issue is how far customers might be willing to engage in the developing smart energy market. Given the reluctance of many customers to engage in today's energy market could the benefits of smart markets remain elusive if

⁶ BEIS and Ofgem,

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/633442/upgrading-our-energy-system-july-2017.pdf

⁷ http://www.sustainabilityfirst.org.uk/images/publications/other/Sustainability_Firs_-_Jon_Bird_-_Discussion_paper_-_Engaged_and_Sticky_Customers_-_final_-_030417.pdf

customers continue to remain disengaged? **The challenge is to find potential market changes which can engage such 'sticky' customers more successfully**, and, to the extent that such changes still leave a substantial rump of disengaged customers, how, and to what extent, should these disengaged customers be provided with protection against unnecessarily high prices. Any such proposals for reform should be tested against the two objectives proposed and then robustly trialled to test for effectiveness.

23. Those customers that do engage and take action will respond to the tariff prices they see and not to the underlying cost of supply. Even today, active customers can make substantial savings from the variability in price of tariffs offered by different suppliers. In the smart world, the opportunities will increase since actively engaged customers could avoid network charges and green levy through greater use of own generation and exploiting the options available from elective half-hourly settlement.
24. Indeed, with the information available from smart meters and the likely active involvement of third party intermediaries, the smart electricity customer will have a wider range of opportunities open to them to select the cheapest ways of meeting their own particular preferred profile of energy needs. (For instance, if they have a larger proportion of peak time use than the average customer, they may choose to stay on a flat-rate rather than a TOU tariff.) To the extent that the prices they face are not reflective of the underlying costs and a fair share of the supplier's margin, this will be at the **expense of all other, less nimble, customers**. This is not only unfair to other customers, but could also run counter to the aim of delivering a low carbon energy future.
25. Ofgem has taken a lead in addressing these issues in relation to network charges through the Charging Futures Forum and its Targeted Charging Review on residual charges. But this is only part of the picture. How **fixed and common costs** such as green levy charges are recovered and the issues raised by elective half-hourly settlement also need examination to develop ways of addressing these issues that are fair to all customers.
26. The two objectives proposed above for seeking fairer pricing should be used to suggest **ways of bringing prices more in line with costs**, always recognising that all changes have distributional effects and create winners and losers, and therefore need sensitive handling including particular attention being given to those who have difficulty in engaging with the market.
27. **Rising block tariffs**, as suggested in the Review, are worthy of further consideration. The Review recognises, however, that deciding how different types of costs should be allocated is essentially a political choice. As the blog from Maxine Frerk in the Annex suggests, allocating fixed and sunk costs on the basis of some income proxy might actually reduce distortions and meet social objectives. Care is needed in

choosing a proxy; it is worth noting the issues that have built up in the water sector, for example, where unmetered costs are still based on what are often much out-dated rateable values.

Cross cutting issues for consideration

What matters should the Government take into account in considering the wider recommendations of the Review?

28. The review is admirably wide ranging but focuses primarily on electricity; **gas and heat are out of scope. Hydrogen does not get a mention.** This is a missed opportunity and means that the picture painted on **heat decarbonisation** is incomplete. These issues would need due consideration if a cross sector carbon price is to be set.

29. The proposed principles set out in the long-term framework could be usefully extended to include reducing usage through **energy efficiency** as a main priority.

Are there any other matters that the Government should consider to reduce the cost of energy in the longer term?

30. To encourage **innovation** in energy that can help reduce costs, a more holistic view is needed of the different funding sources that are available. The establishment of the Energy Innovation Board is a welcome step. However, this has a strong technology focus and may not give adequate weight to **consumer facing, commercial and institutional innovation** (see www.sustainabilityfirst.org.uk for new New-Pin briefing and discussion papers on innovation – from 8.1.18).

Yours sincerely

Sharon Darcy

Director
Sustainability First

Annex 1

“Don’t Ignore Dieter” by Maxine Frerk

Dieter has now published his much-heralded Cost of Energy Review which roves broadly across the electricity landscape and puts forward some radical proposals. There’s logic to much of what he says but inevitably he skirts over some of the practical implementation challenges. However that’s not a reason to ignore what he says. One criticism that might be levied is that while branded an “Energy Review” it focuses almost entirely on electricity and gas / heat is out of scope. Given that one of the key messages from those looking at how to decarbonise heat is the need to take a whole system view, this seems a missed opportunity. Dieter does allude in passing to how heat could help provide flexibility to an electricity system but hydrogen doesn’t get a mention in the 200 + pages. One particular reason this is a missed opportunity is that Dieter strongly advocates a cross sector carbon price. That is widely seen as being a key part of the jigsaw for heat decarbonisation – albeit that it does then raise real affordability issues which would need creative solutions to resolve.

One potential solution is the idea that Dieter puts forward for how one might deal with legacy costs in the context of fuel poverty – rising block tariffs. The idea that some policy costs might only be levied on consumption above a certain “essential” level is one that I tried to get government to consider some years back and raised again in my report for the NEA on Heat Decarbonisation. It’s also the sort of idea that Ofgem should be considering in the context of its targeted charging review looking at the allocation of fixed and common costs. Dieter makes the point clearly that the allocation of such costs is essentially a political choice -you can opt for a Ramsey pricing style minimal distortion or you can choose to allocate these costs to meet wider social objectives. I made all these points in my response to the targeted charging review but also picked up on the MIT comment that allocating fixed and sunk costs on the basis of some income proxy (such as rateable property value) might actually meet both objectives. Given the income constraints of those who are less well-off there is at least an argument that price increases for those customers would have a bigger impact on consumption than price increases for those who are well off.

Returning to electricity, Dieter looks in his review across the value chain at the implications of the shift to decarbonisation, decentralisation and digitalisation. He sets out clearly how these changes affect the fundamental economics of energy as you move to a demand side that is no longer fixed, the ability to store energy (removing the need for supply and demand to match at all times) and the shift to zero marginal cost electricity which undermines key concepts such as the merit curve. We have a whole set of market arrangements designed around a set of fundamental economic principles which are fast becoming outdated. Hence the whole set of market arrangements needs to change too.

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That is all very persuasive and Dieter is able to talk at a high level about what the new arrangements should look like – but he skirts over the practical challenges of implementation.

On the wholesale market and the current incentives around security of supply and decarbonisation Dieter paints a compelling picture of the complexity of the current arrangements which developed in an ad hoc way, strongly influenced by technology specific lobby interests and what he calls the “sicking plaster” approach to policy development. His solution of a single mechanism of an equivalent firm power auction has a logic and apparent simplicity to it. However, it is based on using the de-rated capacity of the generation bid into the auction. As he acknowledges the de-rating factors for a technology will vary depending how much of that technology is on the system and individual plant can improve its de-rating factor by contracting with storage or DSR. Add on top of his proposal that the SO should be able to apply discretion to take account of cyber risks and the uncertainty inherent in nuclear – plus a two stage auction to deal with the carbon angle and you end up with something that will be pretty complex and not necessarily that transparent. It could still be the right way to go but it won't be as simple (or immune from lobbying) as Dieter implies.

On the legacy costs of renewables Dieter draws out important points about the relative cost of finance at different stages with construction being high risk and demanding equity level returns while the ongoing operation is much lower risk and can be largely debt financed. This is the basis on which offshore transmission projects have been funded to date with generators funding the building though equity finance with the projects then put to competitive tender for the ongoing operation. It is this, probably more than the competitive tendering process itself, that has helped deliver the low cost of capital for these projects. Exploring how renewable projects could be re-financed to benefit consumers is an avenue worthy of exploration.

The other omission from the report which has particularly significant impacts for the wholesale market is on ancillary services. The shift away from fossil fuel generation creates various technical operational challenges for the SO in terms of reduced inertia on the system, levels of reactive power etc Renewable generators and storage can provide these services but only if they are rewarded for doing so as there is a cost involved. We saw two years ago how when some of the larger fossil fuel plant failed to get a capacity contract it was kept on the system by National Grid offering contracts for Black Start services. There isn't a problem fitting such ancillary services into Dieter's model and auctions – which he generally supports - have helped keep the costs down. My point is that this is another layer of complexity that Dieter has been able to skirt over but which will become increasingly important in the new world.

On networks Dieter proposes the creation of national and regional system operators – public bodies charged with overseeing the system operation and able to tender for storage and demand side response as alternatives to traditional reinforcement. There is

a logic in such an approach but the disruption and practical challenges involved in stripping out and renationalising that part of the networks role can't simply be skated over. The efforts to increase the independence of National Grid SO give a sense of the costs and issues involved. Moreover, DNOs are already starting to run tenders for these alternative solutions, driven by the totex mechanism in the RIIO price control. It is therefore far from clear that the additional disruption would be justified. What it does suggest though is that instead of talking about the transition from DNO to DSO we should be talking about the creation of a new DSO function – and thinking from the start about the level of separation required.

Dieter also argues that with increasing uncertainty and technology change traditional price reviews are impractical and unnecessary if you have a RSO who can tender for the DNO services. There's certainly a strong case that 8 years is too long for a price control given the pace of change – and I'm on record advocating a return to 5 years. However, to suggest that you can simply do away with price controls ignores the bread and butter activity of running the distribution network where the RIIO regime has driven huge improvements in reliability and customer service.

Finally on networks, Dieter joins in the debate on excess returns, while noting that this is more of an issue on transmission where he rightly notes that the lack of comparators makes a regulator's job harder. The RIIO-ED1 price control to date is showing a range of returns across the companies and lower levels of outperformance than on transmission or on gas. He talks about the options open to Ofgem including the problems with what he labels "Danegeld" (and I think of as the playground bully). I rather like tis poem which explains the Danegeld concept and provide a riposte for any networks who get approached by Ofgem in this way:

http://www.kiplingsociety.co.uk/poems_danegeld.htm

When considering the options that Dieter sets out for intervention on networks, if Ofgem feels it can't simply do nothing then it should behave like an economic regulator and not a political body and make a formal adjustment to the regime. That may still add to regulatory risk but less than the alternative.

The last part of the value chain which Dieter discusses is the retail sector. Dieter's proposal here is for a default tariff with a regulated margin which is not really very different to a price cap. While he argues that this would be more transparent by focussing on the element of the price that actually varies between suppliers, he reveals a lack of appreciation as to how consumers actually think and respond which Ofgem and the CMA both focussed on. Consumers won't understand the concept of a margin and won't trust the companies to work out the rest of the price in line with a set of rules. There's not an easy answer to this one but I don't think Dieter's ideas really help here. Where they do present a useful challenge is to the obsession with switching which he describes as a deadweight loss. Switching is not an end in itself – the key is to ensure customers get a fair price. Even there though I disagree with his vision of the future

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market as one more like broadband where there is only a fixed cost and hence little for suppliers to compete over. In a world where demand side is expected to play a bigger role, tariffs that encourage that engagement in innovative ways will be the hallmark of a successful player. As Ofgem have already flagged this may or may not be suppliers as we know them now but it will be an important element of a smarter market.

Bringing it all together then in thinking about the future transformation you really do need to look across the piece to ensure that policies are coherent. I was critical of Ofgem for looking at embedded benefits in isolation. Getting the big picture view is important. Inevitably that means that all issues cannot be considered in the sort of depth that is needed before taking a policy decision – but presenting a challenging and overarching vision is a vital step along the path. On that basis, it would be dangerous to simply do what Dieter says but foolish to ignore the fundamental issues he raises.