

2nd May 2018

Ofgem RIIO-2 Framework Consultation

Submission from Helen Poulter, Catherine Mitchell and Richard Lowes

Energy Policy Group, University of Exeter

1. Summary

The University of Exeter Energy Policy Group (EPG) welcomes the opportunity to comment on the RIIO-2 Framework. With this consultation, we feel that Ofgem has missed an opportunity to make the changes to RIIO2, and the wider, matching governance changes that we recommended in our response to the Open Letter¹. Overall, we still feel that the proposed RIIO2 regulatory mechanism, as set out in the consultation, is still fundamentally flawed and ill-suited to delivering a cost-effective, flexible, sustainable energy system.

In brief, in relation to the consultation six areas (page 3):

- We agree that consumers need a stronger voice, but also governance (which we take to mean the combination of public policies, institutions, network rules and incentives, market design, Codes and Licenses, retail policy and customer preferences) has to work together to provide propositions that users want. The responsibility for providing user propositions that users feel comfortable with should not just be within having a stronger voice, they also have to be listened to. Using Challenge Groups is one method of doing this but we would recommend that creating a DER plan (Section 0) will allow customers to better influence how networks will need to adapt in the future. Moreover, we think that desired outputs linked to performance based regulation (PBR) should be included to relate to customer and society public interest goals such as (1) better balance with long-term goals (as opposed to short-term economic); (2) more implementation related to 'future' customer wishes, including environmental and low carbon outcomes; (3) ensuring protection of vulnerable users and maintenance of strong public service obligations; and (4) deliverance of more diverse regulated companies.

¹ <http://projects.exeter.ac.uk/igov/comments-on-the-open-letter-on-the-riio-2-framework/>

- We are glad that RIIO2 is taking note of the changing ways of using networks. We think that the uncertainty of how networks should develop is overemphasised within the consultation document. We do not think that RIIO2 is set up to either complement active network management, or to capture the value within different distribution areas. Network charging continues to be based on the current top-down, linear costing methodology (Figure 3-1) which is out of step with energy system challenges². We also worry about the language of putting controls in place to protect consumers from the risk of an unexpected future. Far better that regulation is set up to be adaptive, iterative and to capture new opportunities.
- We do not think RIIO2 as set out will particularly improve innovation and efficiency or deliver better value to customers.
- We agree that the price controls should be simplified – although the extent to which any of your options are actually doing that is debatable.
- We do not feel qualified to comment on ensuring fair returns. What we would say, if network companies change their roles and start to manage their networks in new ways, suited to a more sustainable, smart and flexible future, then they deserve a fair return.

We recognise for this response to say that the RIIO2 framework has to be fundamentally rethought if it is to become fit for purpose may seem a little blunt. It seems to us that, whilst the RIIO2 consultation is clearly asking multiple questions and has not yet made many final decisions, its language has limited ambition with respect to innovation, incentives and outputs. We think it should be saying that a smart and flexible energy system which fulfils public interest goals will require certain features – for example, increased flexibility provision, more heat decarbonisation, more interconnection with Europe etc. It follows that a GB governance system, and a regulatory mechanism, which would appropriately deliver those outputs, needs to include certain institutional and costing methodology changes which mean that innovation is inherently supported whilst incentives can be much more easily and adaptively be implemented to deliver desired, and possibly changing, outputs. At root, this requires a regulatory mechanism where performance based regulation is linked to an increasing amount of revenue over time, and that the outputs the PBR is delivering are those related to a user-focused, affordable, public interest, sustainable, smart and flexible energy system. The RIIO2 consultation has not so far done that, but we remain optimistic that the next step will do so.

This response is set out in the following way:

- Section 2 gives a brief overview to the EPG Response to the Open Letter. We do not propose repeating ourselves here.
- Section 3 provides an overview of our arguments for a more fundamental re-think of energy governance, which RIIO2 would be central to. In brief, it seems to us that Ofgem is trying to take multiple decisions, which together have momentous implications for energy governance in the UK. However, whilst we think is commendable that Ofgem is looking at all these areas, we think that there is insufficient knowledge when taking those decisions; too little discussion or understanding about their implications; and too little ability to adapt to any unforeseen impacts in the future.
- Section 4 argues for appropriate timelines, and evidence based decisions.

² <http://projects.exeter.ac.uk/igov/presentation-innovation-and-governance-for-future-energy-systems-what-role-will-distribution-companies-play/>

- Section 5 looks at learnings from other jurisdictions.
- Section 6 answers the consultation questions.
- Section 7 concludes.

2. A Brief Review of the EPG Response to the RIIO2 Open Letter

Our Open Letter³ (OL) response set our broad arguments of the need for GB institutional and regulatory reform. We do not consider that the RIIO2 consultative document is much improved on the OL. Our main points with respect to the OL are below, and we do not intend to repeat them in this response.

1. We argued that the RIIO2 OL objectives were insufficient and that the 4th stated objective should be changed (to insert institutional change) and a new sixth objective should be added:

Objective 4: Initiating *institutional change*, using the regulatory framework or competition, where appropriate, to drive innovation and efficiency;

Objective 6: To better integrate RIIO incentives and desired outcomes with wider regulatory reforms/policies/changes to complement public policy goals in meeting the challenges of energy system transformation

By public policy we mean ensuring an energy system run to deliver public interest goals rather than private interests, and which is better balanced to reflect the interests of future customers, particularly with respect to the environment. This includes incentives to look after the vulnerable; ensuring environmental goals are met; ensuring the cost of provision to customers is affordable; ensuring that the institutional basis of the energy system is set up to deliver a cost-effective and consumer focused systems whilst being flexible and inherently encouraging of innovation; and that the monopoly companies promote diversity and are open to new ideas and ways of doing things (for example, 50/50 men / women split on Boards and within Senior Management; inclusivity programmes and so on.

2. We argued that RIIO2 and network charging is impossible to separate, and that there needs to be much more evidence of complementary and iterative working between the two reviews.
3. We argued that GB / UK has to learn more from other jurisdictions.
4. We gave practical examples of the problems that RIIO2 needs to address (in particular rapid technological change, using the example of solar photovoltaics, and shocks).
5. We provided a high level critique of ED-RIIO, namely:
 - RIIO is an improvement on RPI-X.
 - Ofgem have reduced the capacity somewhat for distribution network companies to ‘game’ the base revenue allowance, but the incentive on companies to do so is still strong.
 - The Broad Measure of Customer Satisfaction (BMCS) is a positive step.

³ <http://projects.exeter.ac.uk/igov/comments-on-the-open-letter-on-the-riio-2-framework/>

However:

- The need for benchmarking is a fundamental flaw of the RIIO design, which undermines innovation and encourages gaming.
- The two-tracks of fast and slow should be scrapped.
- The link between network operation and incentives/outputs is minimal, and in the case of the environment absent.
- Some of the DNO's used innovation funding to invest in projects such as micro-grids, low-carbon cities, local energy markets and active network management. However, these are still in the minority and none of the pipeline projects, either from RIIO or LCNF initiatives, applied for rollout funding (in other words, to become mainstream within DNO operation). In this sense, GB innovation funding has not been successful. We think innovation is better incentivized by getting the institutional framework right and via PBR output incentives.
- The overall incentives, whether for 'innovation' or other named desired outputs, is related to a minimal proportion of allowed revenue, and has to be increased significantly. Further, the number of incentivized outputs is also minimal and BAU.
- The 8 year price controls limit flexibility, and need to be reduced.

3. A New Regulatory Framework - RIIO2 Should Be Part of a Fundamental Rethink about UK Governance

When we wrote our response to the RIIO2 Open Letter, we were hoping that RIIO2 would be part of a fundamental rethink of UK Energy Governance. It is clear that this next stage of the RIIO2 consultation is not part of a wider rethink, and to that extent we argue, so far, that RIIO2 is a missed opportunity.

The rhetoric of GB Energy Policy is now firmly set on an energy policy path which is 'smart and flexible'. This is set out in the Clean Growth Strategy⁴, the Industrial Strategy⁵ and Ofgem's Smart Systems and Flexibility Plan⁶. In August 2017, Ofgem then set out their Strategy for Future Energy Systems⁷ – which was an overview of the issues that energy systems are facing, and their plan for dealing with them and delivering a smart and flexible energy system. At the same time, they released parallel documents which set out future regulatory options related to network charging (residual⁸ and future⁹), electricity settlement¹⁰, supplier hub model¹¹ and RIIO-2¹² issues. However despite all these documents, and the other areas Ofgem are looking at (as set out in page 14 of the

⁴https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/651916/BEIS_The_Clean_Growth_online_12.10.17.pdf

⁵https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/664572/industrial-strategy-white-paper-print-ready-version.pdf

⁶https://www.ofgem.gov.uk/system/files/docs/2017/07/upgrading_our_energy_system_-_smart_systems_and_flexibility_plan.pdf

⁷https://www.ofgem.gov.uk/system/files/docs/2017/08/our_strategy_for_regulating_the_future_energy_system.pdf

⁸https://www.ofgem.gov.uk/system/files/docs/2017/11/tcr_working_paper_nov17_final.pdf

⁹https://www.ofgem.gov.uk/system/files/docs/2017/11/reform_of_electricity_network_access_and_forward-looking_charges_-_a_working_paper.pdf

¹⁰

https://www.ofgem.gov.uk/system/files/docs/2017/07/electricity_settlement_reform_significant_code_review_launch_statement.pdf

¹¹<https://www.ofgem.gov.uk/news-blog/our-blog/do-supplier-hub-market-rules-need-reform>

¹²<http://projects.exeter.ac.uk/igov/comments-on-the-open-letter-on-the-riio-2-framework/>

consultation document), there is still a worrying sense that the realities of trying to bring the final decisions from these documents together in a unified, integrated (and successful) whole have not been addressed. Moreover, the consultation language remains linked to the current institutions within GB energy governance.

As a result, so far, it seems that RIIO2 will be a minor improvement of what is already there rather than establishing the necessary building blocks for the longer term. We have argued that whilst electricity has moved a certain way with decarbonisation, it has had most of the easy wins – to do better, the electricity system needs more user involvement. Similarly, there has been minimal decarbonisation of heat and mobility – and much of the necessary decarbonisation has to occur at the local level and with user involvement. This means that governance has to better fulfil user propositions and ensure that local governance produces the desired integrated, decarbonisation outputs. This will be best undertaken via altered local governance – and the RIIO2 consultation, even though open to many options and ideas – appears to miss this entirely.

There are four reasons for this:

1. The electricity (and wider energy) system is changing because of the needs to decarbonise; new technologies (many of them decentralised and modular) which require a new system operation; and digitalisation. Together, these are leading to new electricity (and wider energy) system economics; eroding business models for incumbents; opening up the possibilities of new services and business models; and enabling new customer relationships. Almost all roles of the energy system are changing – and the regulatory mechanism has to find a way to ensure that the overall cost of service provision to customers is minimised. It is clear that the old way of assessing the total cost of service to customers – linked to large, centralised, fossil and nuclear power plants in electricity, operated in a top-down way via the supplier hub model is out of date (see Figure 3-1). If this costing methodology continues – which seems to be the case for the RIIO2 and network charging reviews – the RIIO2 outcomes will lead to unnecessarily expensive cost of service¹³.
2. The cost of running an energy system depends on multiple variables – including the regulatory mechanism details, the network charging methodology etc (see Figure 3-2). The regulatory mechanism therefore has to be at one with the network charging methodology, whilst also fitting in to a wider whole energy system governance, which together works to deliver public policy goals and customer preferences. The whole system governance framework has to be set up to allow a new system operation, adaptable enough to changing circumstances but also to gain whatever value is available in the differences of different distribution areas. Active management of a network requires a detailed understanding of the distributed energy resources of that area – where DER includes both the supply and demand side, in addition to flexibility, storage etc. The value of these resources will differ depending on the institutional framework – for example, if there are local, balancing markets or area-wide market facilitators incentivised in particular ways, for example to bring down peak capacity, average prices etc.¹⁴. Since the current network charging discussions remain linked to the top-down, system operation, so RIIO2 is also

¹³ <http://projects.exeter.ac.uk/igov/wp-content/uploads/2018/04/CMitchell-presentation-WEET-Forum-26-April-2018.pdf>

¹⁴ <http://projects.exeter.ac.uk/igov/new-thinking-reset-the-reset-1-we-need-institutional-governance-reform-and-we-need-it-now/>

based on this top down model rather than an area-based costing methodology (Figure 3-1) and a lack of knowledge about DER value (see Figure 3-2). This is therefore a fundamental gap for the input biased RIIO2 regulatory mechanism as discussed in the consultation, since it is ignoring potentially cheaper and more effective ways of delivering use and public goals.

3. The GB electricity system requires flexibility at all levels, including domestic level flexibility¹⁵. Much of the energy system changes are happening, or should happen, at the domestic level. For example, electric vehicle connections, solar (thermal and photovoltaics) on domestic roofs, smart meters, demand side response, storage, flexibility provision etc.). There needs to be a system operation and regulatory mechanism which enables that flexibility to be valued and then captured by flexibility providers, at all levels. This is minimally being looked at in the RIIO2 consultation and network charging documents. The DNOs are still only talking about DSO flexibility at the highest distribution level¹⁶ – despite all the changes at the lowest 11kV level^{17,18}.

4. The most cost-effective way to coordinate and operate the energy system with DER is via local coordination by areas, which then link to transmission – which is basically acting as a balancer – and the wholesale market. The energy sector system operation – electricity, heat and mobility - can interact in this local area level, bottom –up way. IGov has argued for distribution service providers (DSP), acting as market facilitators – as the means to coordinate this but there are other options, for example DeX¹⁹ in Australia. It makes sense to run/pay for the energy system via area based costing methodologies of these DSP areas, and incentivising the market facilitators via performance based regulation (PBR) (Figure 3-3) . This is running local, efficient areas as most cost effectively as possible whilst delivering the desired outputs. This should be complementing energy efficiency via bottom-up energy system optimisation as a first energy policy priority – thereby reducing pressures on bills and helping vulnerable customers. This area based coordination and costing methodology should displace the current traditional linear, top down costing methodology. A DSP-centric costing methodology and regulatory mechanism which coordinates local markets and incentivises the delivering of desired outputs via performance based regulation, also fits with a post-supplier hub model; a network charging model based on knowledge of the value of all DER resources and therefore the actual costs of running the distribution networks relative to other choices; enables any resource provider to sell to whomever they want and any resource user to buy from whomever – even if the resource provider and user is the same company – thereby enabling choice; enables flexible retail policies to meet customer preferences; allows the placing of universal service obligations on one body; fits with interactions with transmission and system operators; and fits with other sector decarbonisation (including heat and mobility). If RIIO2 continues to assume a top-down, linear costing methodology rather than a bottom-up area based operation, then it will maintain the ‘old’ system is says it wants to move on from.

¹⁵ <https://www.theccc.org.uk/wp-content/uploads/2017/06/Roadmap-for-flexibility-services-to-2030-Poyry-and-Imperial-College-London.pdf>

¹⁶ <https://www.westernpower.co.uk/docs/About-us/Our-business/Our-network/Strategic-network-investment/DSO-Strategy/DSO-Transition-Strategy.aspx>

¹⁷ <https://www.nationalgrid.com/uk/articles/electric-dreams-future-evs>

¹⁸ http://www.r-e-a.net/upload/rea_storage_report-web_accessible.pdf

¹⁹ <https://dex.energy/download/>

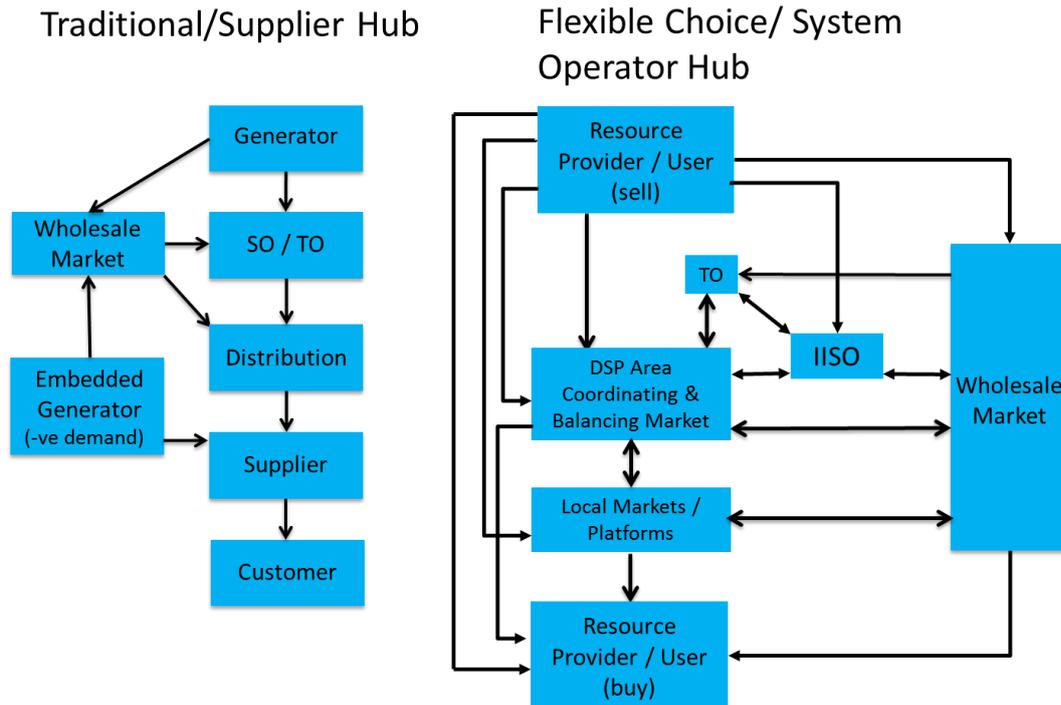


Figure 3-1 A new flexible energy system structure (WEET Forum) <http://projects.exeter.ac.uk/igov/wp-content/uploads/2018/04/CMitchell-presentation-WEET-Forum-26-April-2018.pdf>

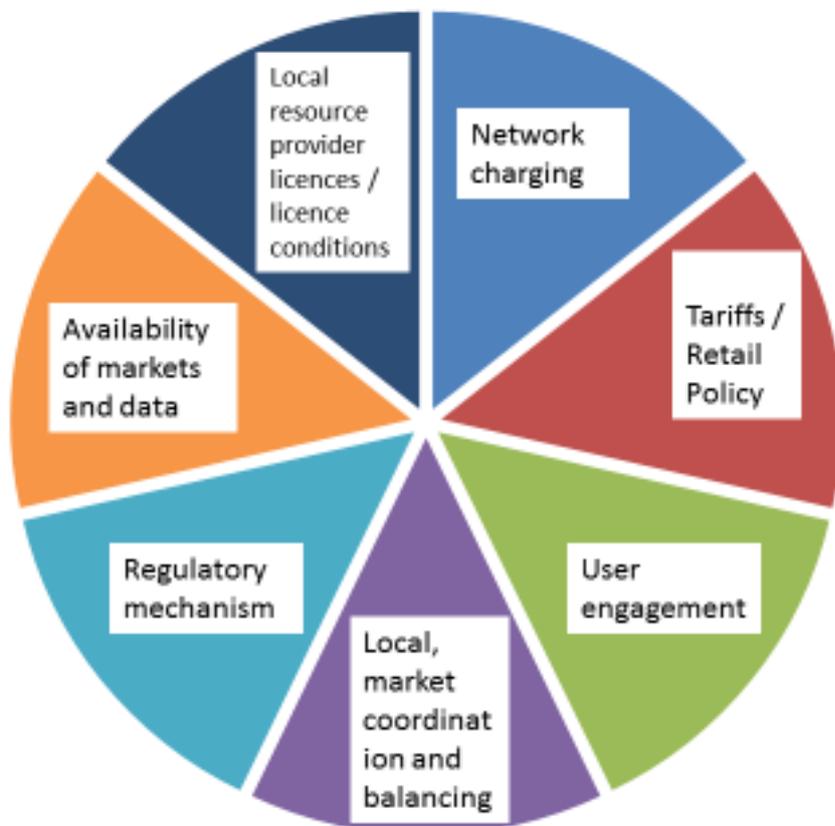


Figure 3-2 Fit-for-purpose governance needs to ensure all the inter-linked variables which sum to the cost of service provision are complementary to the flexible choice model (Figure 3-1) (WEET Forum) <http://projects.exeter.ac.uk/igov/wp-content/uploads/2018/04/CMitchell-presentation-WEET-Forum-26-April-2018.pdf>

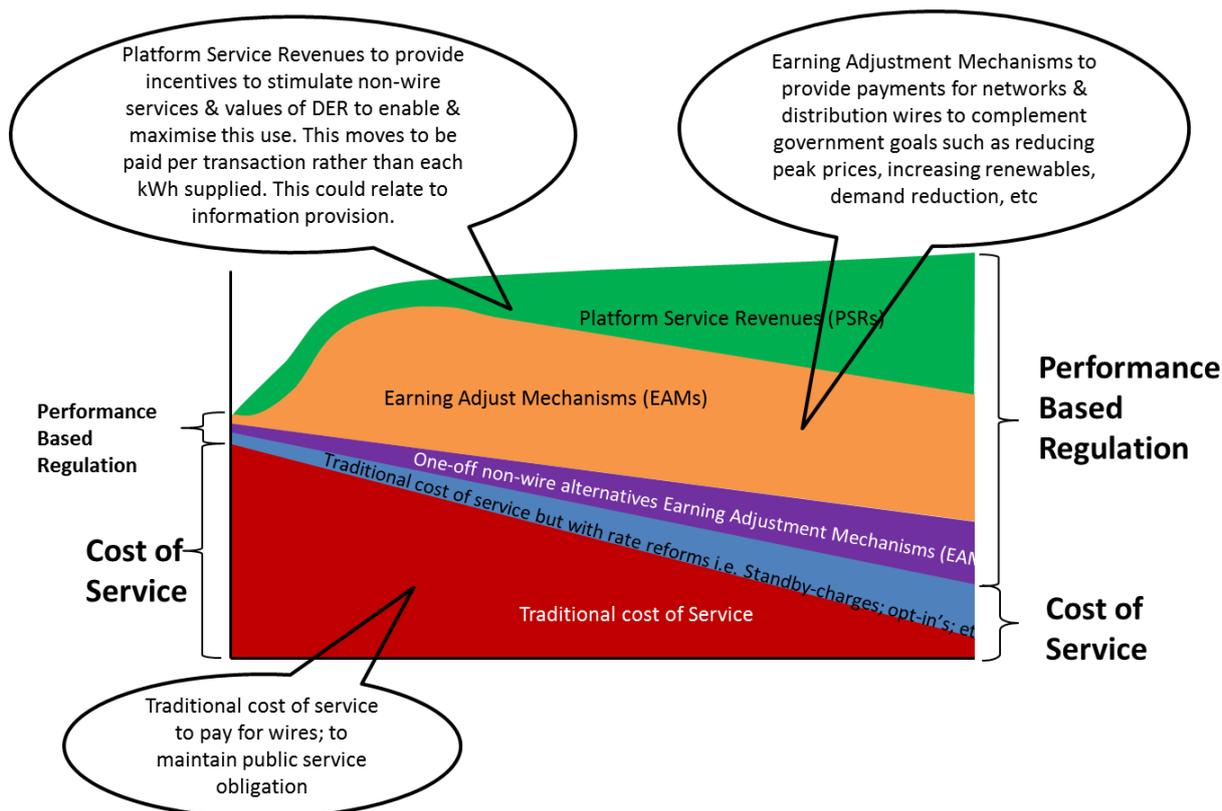


Figure 3-3 Potential basis for RII02 – more PBR (WEET Forum) <http://projects.exeter.ac.uk/igov/wp-content/uploads/2018/04/CMitchell-presentation-WEET-Forum-26-April-2018.pdf>

Transformative change is also a requirement for the UK's heat sector²⁰. The Climate Change Act requires the near total decarbonisation of space and hot water heating by 2050. There is currently a suggestion²¹ which, driven by major heat incumbents including the gas networks, that the gas grid can be used to decarbonise heating if converted to run on hydrogen. This idea has rapidly gained political legitimacy (e.g. being investigated by the Committee on Climate Change and BEIS)²² despite huge uncertainties around the technical possibility, costs and energy security implications.

If following further research gas grid decarbonisation is proven not to be a realistic approach (which in our view it will not be), heat decarbonisation will need to be based around major demand reduction and known technologies of district heating, solar thermal and electric heating using heat pumps. Therefore RII02 must drive both gas and electricity networks to support UK heat decarbonisation. In off gas grid areas this should include incentives for electricity networks to connect heat pumps and manage the system efficiently. In gas grid areas, gas networks should be incentivised to support the development of district heating.

Therefore, GB needs a new institutional energy governance framework²³ (Figure 5-1); it needs a network charging methodology which fits the new demands of active management and decarbonisation; it needs a regulatory mechanism which takes account this; and it needs a

²⁰ HM Government (2017) The Clean Growth Strategy: Leading the way to a low carbon future. London.

²¹ Northern Gas Networks, Wales & West Utilities, Kiwa, and Amec Foster Wheeler (2016) Leeds City Gate H21. Leeds.

²² HM Government (2017) The Clean Growth Strategy: Leading the way to a low carbon future. London.

Committee on Climate Change (2016) Next Steps for UK heat policy. London.

²³For full framework <http://projects.exeter.ac.uk/igov/paper-gb-energy-governance-for-innovation-sustainability-and-affordability-2/>

regulatory mechanism which is able to incentive a broad set of outputs that society wishes, and which is adaptive and inherently encouraging of innovation. Sadly, all the reforms taking place via Ofgem are not doing this and therefore are fundamentally flawed.

4. Integration and Adaptive Governance: Getting the Ducks in a Row

The RII02 document appears to be working with the current GB energy governance institutional basis. Although the consultation accepts that network use will change (Figure 3-1), the network methodology is still based on the top-down, linear model. There is minimal evidence that the consultation expects different institutions (whether DNO-DSO-DSP; market design (such as local markets, flexibility markets and tendering); fuels (i.e. the need (or not) for the gas network); or that actor roles will change very much.

We worry therefore that the RIO2 consultation document is too sanguine about necessary institutional reform.

We also worry that so many major regulatory decisions are being made on so many topics so quickly (a) often without sufficient knowledge, for example the value of DER in different areas (and must therefore lead to poor network charging decisions; and/ or the most cost effective system operation in those areas may be missed, not to mention incentives working against the momentum of economics; and (b) without any obvious iterative process to take account of unforeseen effects or difficulties. Whilst we are worried that we are moving too quickly with the big decisions, we are also worried we are moving too slowly with others (for example, in getting basic information about DER value as building blocks for the future; or in moving from DNOs to DSPs).

The NY Reforming the Energy Vision started in 2014. The circumstances were very different from UK etc. but in 2016 it did set out a provisional time scale for change – broadly, (1) the Vision goals were to be achieved over a 10-15 year time frame; and (2) during that time there would be Working Groups of about 2 years each, dealing with particular issues 9 (Figure 4-1). The idea was that as NY REV developed, it would throw up issues which were not thought of initially and then they could be dealt with. As discussed below (and Figure 3 and 4), NY REV is moving to higher proportions of revenue related to PBR. Some of that PBR is related to Earning Adjustment Mechanisms (EAMs). But in addition, the NY REV has scorecards^{24,25}. These are projects to deliver and analyse data about subjects which may be able to become EAMs. As the % of revenue moves to PBR so more EAMs can be introduced, or indeed dropped. It is therefore a flexible and transparent process. We would hope that RII02 would start to think more about its decisions in this way. We need a more adaptive process so that we don't get locked in to a mechanism which is not delivering what is needed, or which has unexpected and negative consequences.

As said earlier, an example of being too slow in delivering fundamental building blocks of a smart and flexible energy is the lack of knowledge about DER in GB. We are trying to work out the cost of

²⁴<http://projects.exeter.ac.uk/igov/us-regulatory-reform-ny-utility-transformation/>

²⁵<http://projects.exeter.ac.uk/igov/wp-content/uploads/2016/06/NOTES-NY-REV-ORDER-19-May-2016.pdf>

running a network – with all its interactions – without actually knowing the basic value of DER in different places.

We would also argue that one of the key priorities for the ED price control should be the changing role of the DNO to a DSP. We do not think that this should wait until ED RIIO-2 in 2023. Ofgem should use the upcoming mid-period review for ED with the DNO’s role changed for the beginning of their RIIO-2 price control. Moving to the relative simple DSO – arguably something they should be already – is insufficient. Moving to a DSP^{26,27} is achievable both in the time available and using funds from the present price control, as illustrated by WPD’s DSO Transition Strategy document²⁸. As part of this transition, we would also encourage Ofgem to initiate a DER plan for all distribution areas. It is only once we know what the value of DER is in an area, that we can work out what regulatory business plan can be agreed, given the regulatory incentives, network charges / payments etc . This knowledge is the basis of a regulatory mechanism aiming to provide active management, yet the regulatory decision is being made before that is in place.

MDPT Working Group
and Stages

Ingoing Assessment Regarding Market Scope

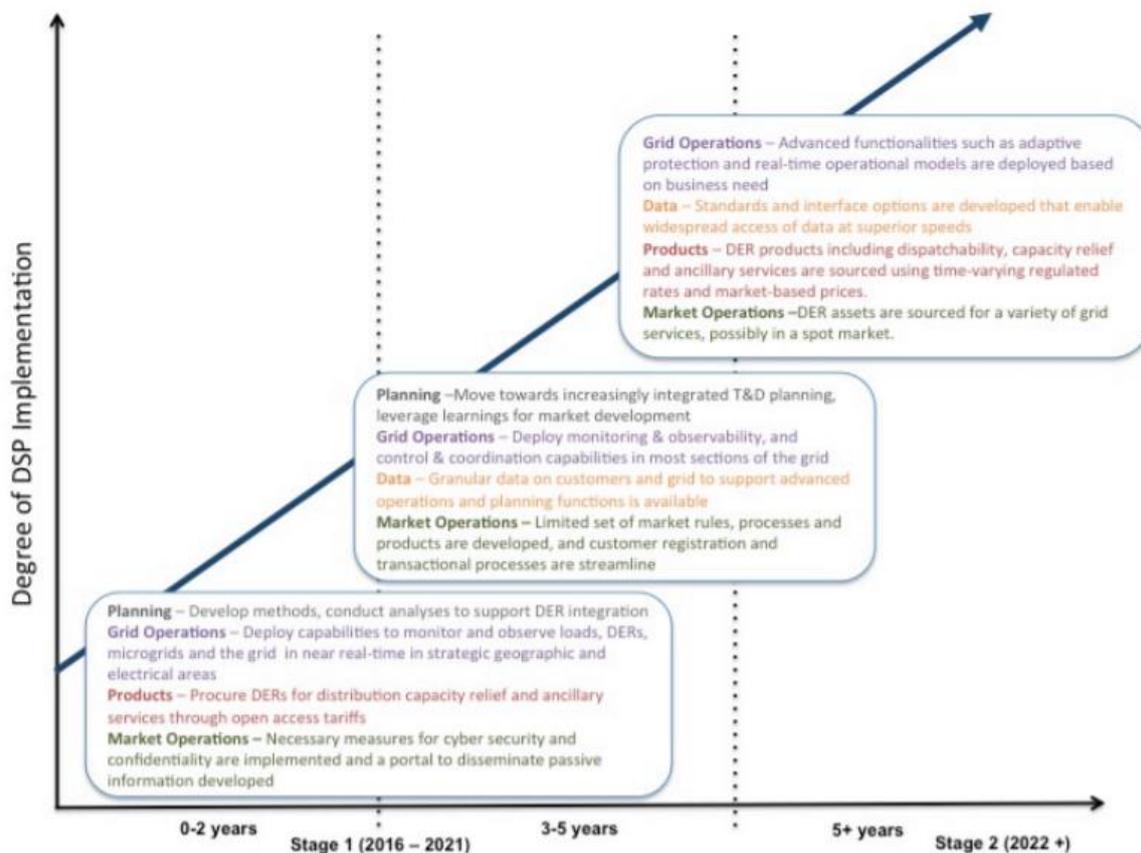


Figure 4-1 DSP evolution (https://www.energymarketers.com/Documents/MDPT_Report_150817_Final.pdf)

²⁶ <http://projects.exeter.ac.uk/jgov/new-thinking-distribution-service-providers/>

²⁷ <http://projects.exeter.ac.uk/jgov/comparing-nys-with-ca-blog-6-dso-or-dsp-why-it-is-the-function-rather-than-the-name-that-really-matters/>

²⁸ <https://www.westernpower.co.uk/docs/About-us/Our-business/Our-network/Strategic-network-investment/DSO-Strategy/DSO-Transition-Strategy.aspx> (page 33)

5. Specific issues: Learning from Other Jurisdictions

Much has been written about the regulatory changes which are taking place in New York State²⁹. New York State (NYS) is unusual within global regulation because, whilst its mandate is still the same as it was a century ago, they have taken the view that the ‘norms’ of conventional regulation cannot transform NYS’s energy state cost effectively for the NYS energy customers. NYS took the decision to set out a Vision in 2014, and has been changing the components of the regulatory mechanism towards reaching that vision.

We argue that it is important to make a distinction between the principles and ideas of the NY Reforming the Energy Vision (REV), and the day to day decisions which have been taken within the NY REV restructuring – which fit the particular characteristics of NYS and their institutional framework. We would argue that GB is, in many ways, in the same position as NYS was in 2014 before NYS decided to restructure its energy governance, even though our institutional structure is very different. Of course, the GB system is different from NYS but the ideas behind NY’s Vision, which were intended to meet the challenges^{30, 31, 32, 33} of the new energy system, appear sound to us. We think GB would do well to learn lessons from other jurisdictions, including NYS, albeit shaping those ideas to suit GB’s particular situation.

Figure 3-3 sets out a conceptual idea for altering the basis of distribution network revenue, via increasing levels of PBR over about 10-15 years, in NYS. As can be seen, the network company moves from a broadly cost of service (i.e. a return on the asset base) + about 8 per cent PBR revenue to one after about 10-15 years with three basic sources of revenue: a cost of service element; a meeting of public policy goal element (Earning Adjust Mechanism (EAM), and a transaction element (Platform Service Revenue). Two thirds of the allowable revenue by the end of 10-15 years related to PBR, and it is a carrot and stick approach. Although total costs of networks, infrastructure and energy prices to customers must come down, distribution companies are allowed a higher return provided they meet these PBR outputs.

We think RII0-2 should be thinking more in these sorts of terms, and this type of timescale. This means greater linkage between PBR, network charging, availability of data and public policy, and user propositions and public service obligations. This requires more direction from Government and institutional change – hence the need for a more crisply stated, whole system Vision.

In Australia there has been an unprecedented uptake of solar PV, due initially to high FiT rates and then subsequently to the rapidly falling costs of PV installation³⁴. This economic ‘shock’ coupled with issues of grid reliability caused by storms in South Australia in 2016³⁵ has meant that an average of 25% of households across all the Australian states now have PV installed. This mass adoption of behind the meter generation has caused technical and operational challenges. Answers to these

²⁹ 2014 Vision Statement written by the PSC (the NY equivalent of Ofgem)

³⁰

[http://www3.dps.ny.gov/W/PSCWeb.nsf/96f0fec0b45a3c6485257688006a701a/26be8a93967e604785257cc40066b91a/\\$FILE/ATTK0J3L.pdf/Reforming%20The%20Energy%20Vision%20\(REV\)%20REPORT%204.25.%2014.pdf](http://www3.dps.ny.gov/W/PSCWeb.nsf/96f0fec0b45a3c6485257688006a701a/26be8a93967e604785257cc40066b91a/$FILE/ATTK0J3L.pdf/Reforming%20The%20Energy%20Vision%20(REV)%20REPORT%204.25.%2014.pdf)

³¹ <http://www3.dps.ny.gov/W/PSCWeb.nsf/All/CC4F2EFA3A23551585257DEA007DCFE2?OpenDocument>

³² [http://projects.exeter.ac.uk/igov/us-regulatory-reform-ny-utility-transformation/;](http://projects.exeter.ac.uk/igov/us-regulatory-reform-ny-utility-transformation/)

³³ <http://projects.exeter.ac.uk/igov/comparing-nys-and-ca-blog-1-series-overview/>

³⁴ <http://projects.exeter.ac.uk/igov/new-thinking-why-is-australia-becoming-an-interesting-case-study-for-energy-reform/>

³⁵ <http://projects.exeter.ac.uk/igov/new-thinking-the-solution-to-south-australias-blackouts-a-market-which-rewards-der/>

challenges, which could be met by non-network solutions, are struggling to find value in the current system³⁶. As customers, both domestic and commercial, are not receiving value for their contribution to decarbonisation, many of them are choosing to leave the grid entirely^{37,38}. So although energy system policy in Australia *is* beginning to adapt to transformation, currently it is more of a 'sticking plaster' approach as governance struggles to keep pace with the unexpected speed of DER adoption and technological innovation.

Both New York State and Australia are examples of places where change has either been encouraged as a result of shock (in New York's case) or has happened because of a combination of customer preferences and economics (as in Australia)^{39,40,41}.

The lessons to be learnt from New York State and from Australia is that we cannot predict which shock – whether technological, economic or climatic, or a combination of all three - may cause a rapid change in the way we use our networks, or when this shock may happen. GB is not somehow immune to shocks. Energy system governance needs to have a framework that is adaptive enough to absorb these shocks while ensuring reliability, affordability and decarbonisation (Figure 5-1). To support this, GB needs a flexible regulatory framework that can accommodate the shift in how value is assigned from the conventional system to a system that has a large amount of decentralised power; and one where incentives are more related to outputs, so that if factors change, companies, are able to still meet their outputs albeit in different ways.

³⁶ <http://projects.exeter.ac.uk/igov/postcard-from-australia-a-national-electricity-market-overview/>

³⁷ <https://onestepoffthegrid.com.au/off-grid-business-new-norm-australian-smes/>

³⁸ <https://onestepoffthegrid.com.au/victoria-mansion-leading-exodus-off-grid/>

³⁹ <http://projects.exeter.ac.uk/igov/new-thinking-why-is-australia-becoming-an-interesting-case-study-for-energy-reform/>

⁴⁰ <http://projects.exeter.ac.uk/igov/new-thinking-the-solution-to-south-australias-blackouts-a-market-which-rewards-der/>

⁴¹ <http://projects.exeter.ac.uk/igov/postcard-from-australia-a-national-electricity-market-overview/>

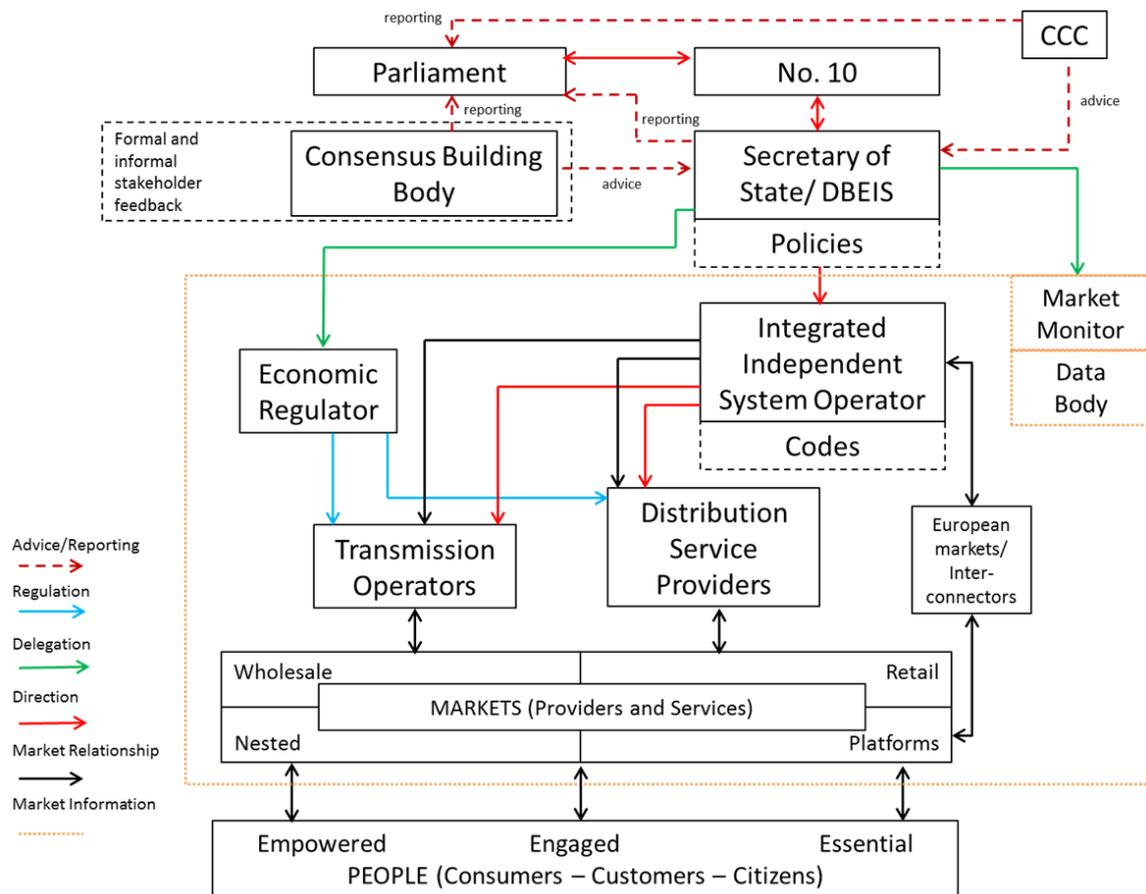


Figure 5-1 IGov Fit-for-Purpose GB Energy Governance Framework (<http://projects.exeter.ac.uk/igov/wp-content/uploads/2017/10/SYS-Copenhagen-27-October-2017.pdf>)

6. Consultation Questions

This section will address some questions raised in the consultation on a chapter by chapter basis.

Giving consumers a stronger voice

Our experience of network stakeholder engagement is that over the RIIO GD1 and ED1 period, companies do engage, however, this engagement can be closely aligned with their business interests resulting in an ‘echo chamber’ type effect. Overall therefore we support the role of independently chaired challenge groups and Ofgem’s own challenge group but believe that Governance must be in place to ensure full independence for all groups and would suggest that secretariat functions are separate from the companies that panels are working with. It must not be that these challenge groups become like the Code panels – which effectively through their membership undermine change⁴².

The idea of open hearings is an interesting one which in principle we support and which could shed some light on issues which have been hidden from plain sight for some time. There is of course a risk

⁴² <http://projects.exeter.ac.uk/igov/paper-innovation-and-the-governance-of-energy-industry-codes/>

that network companies can use their financial might to attempt to shape these hearings and procedures must be in place to ensure that Ofgem has full control of these sessions.

However, we also argue that customer wishes have to be embedded more strongly via incentives on companies – whether with respect to environmental outcomes (including GHG losses, via low carbon incentives (for example, also put forward by Sustainability first), improved network losses, links to delivering energy efficiency, RE and DSR); social concerns, including vulnerable customer, fuel poverty reduction and public interest; ensuring that user propositions (ie what and how customers will accept and feel comfortable with) to deliver a sustainable, secure affordable energy system are fully understood, and then translated into governance; and diversity. Much of the consultation relates to cost, financing and investment – all of which are important – but ultimately society will want a particular type of energy system, and it is up to regulation to deliver that energy system.

As said above, NY REV has various projects to define appropriate incentive regulation for these kinds of specific outputs. Decoupling is a norm⁴³ across the US to try to encourage more energy efficiency. The latter would not be our preference but learning lessons from elsewhere would be helpful⁴⁴.

Responding to how networks are used

Length of price control

Please see Section 3 for our discussion of the changing role of networks which we will not repeat here.

We agree with Ofgem’s decision to reduce the price control period to five years. We also understand that having a longer price control encouraged networks to think over the longer term. However, as stated in paragraph 4.9, a longer price control means issues affect customers for a longer period before intervention can take place. It is the regulators role to protect customers against the monopoly companies’ ability to claim for higher than needed revenues. It can be seen from ED1 that this protection has not been effective⁴⁵. As can be seen in the ECIU report¹¹ and as stated by Ofgem in paragraph 4.7, trying to anticipate costs and returns over such a long time period creates risks. Using a long-term vision (e.g. 10-15 years) and PBR over a 5 year price control encourages long-term thinking but reduces the risks associated with a longer price control.

The long-term vision enables the networks to see where the shorter price control target fits into the ‘big picture’. For example, if an innovative method is to be used to meet the EAMS or to increase the use of PSR’s (Figure 3-3), then if this method has begun to reduce the cost-of-service element and increased the level of the EAM/PSR then this can be seen to have reached the target for the end of the price control. Even though a project may not be completed or need more time to make a larger contribution to the Vision, the fact that there is progression along the Vision timeline will mean that the network will achieve their outcome and would not be penalised. The price control can then be used as a target/review point to ensure that all networks are meeting their targets rather than meeting certain outputs to gain an incentive.

⁴³ <http://projects.exeter.ac.uk/igov/lessons-from-america-is-the-us-form-of-decoupling-transferable-to-gb/>

⁴⁴ <http://projects.exeter.ac.uk/igov/lessons-from-america-series-a-quick-link-to-all-8-blogs-lets-not-be-so-parochial-in-gb/>

⁴⁵ http://eciu.net/assets/Reports/ECIU_Monopoly_Money.pdf

Please see discussion below on aligning of price controls, but given that basic requirement of alignment, for gas networks, a 5 year price control makes sense. In the Clean Growth Strategy, Government explained: ‘We will therefore need to lay the groundwork in this Parliament so we are ready to make the decisions in the first half of the next decade about the long term future of how we heat our homes, including the future of the gas grid.’ Five years from 2021 would go to 2026 which would be aligned with the Government’s timescale for heat decarbonisation.

Whole system outcomes

The main barrier to achieving the delivery of whole system outcomes is creating a price control framework that is too prescriptive, such as RIIO2 as set out in the consultation. The prescriptive nature of RIIO gives the networks little opportunity to work across outputs and across industry within the price control framework. The use of financial incentives in the current price control is essentially Ofgem deciding which outputs are the most important. This then pushes the networks to consider the incentivised outputs in isolation in order to gain financial rewards. An example of this is the use of the NIA funding in ED1 where trials were primarily targeted at innovations that could meet the outputs which had financial incentives attached to them⁴⁶.

In the consultation document, you state: *‘Gas companies and several other stakeholders were emphatic that gas networks should play a role in decarbonising heat as part of delivering whole system outcomes and wanted us to support this through the price control framework.’*

This comes as no surprise that the gas network companies are attempting to protect their asset from decarbonisation, which is a huge risk for them. We find it hard to understand what future gas networks have in a decarbonised energy system (see below). However, the gas network companies have to explain in more detail what their future may be, and what the costs of it to customers is; and how they fit into a low carbon whole system. We believe the current level of uncertainty over the cost-effective future of the gas grid is enough that any capital expenditure on it via the RIIO2 process should receive thorough scrutiny. Moreover, this is a major strategic decision – and GB and Ofgem should not be de facto floating into, or continuing with these huge gas network payments because that decision has not been transparently discussed and made.

We argued in our OL submission that price controls should be aligned. We do not agree to Ofgem’s minded to position to retain the current start dates for the electricity transmission and distribution price controls. We are also disappointed that Ofgem are not considering aligning price controls for all gas and electricity price controls. Aligning the price control for all energy systems would enable greater cross-system thinking. We realise that changing the start dates for the price controls is not a simple requirement, but would highly recommend that Ofgem consider an interim 2-year period for ET, and GT and GD. This will allow the industries time to work together and assess any cross-system solutions from the DER plans from the ED companies before moving to a model with increasing levels of PBR by 2023.

Network utilisation, stranding and investment risk

Further investment in the UK gas grid represents one potential area of asset stranding. Therefore we would support greater attempts to focus on opex rather than capex in this area. One area of particular concern is around the Iron Mains Replacement Programme. With such a low risk gas grid,

⁴⁶ <http://projects.exeter.ac.uk/igov/new-thinking-the-riio-edi-review-just-how-successful-is-riio/>

we question whether this should be continued in light of uncertainty over the gas grid's future. Gas networks companies which have been promoting converting the grid to hydrogen suggest that completion of the iron mains replacement (repex) programme will allow hydrogen to be transported through new plastic pipes.

However, with such a great deal of uncertainty over the technical and economic viability of hydrogen we recommend a no regrets 'repex holiday'. This will save consumers money in the short term and if hydrogen within networks is eventually proven to be viable (something we consider most unlikely), then the programme can be restarted and completed (in certain geographical areas) if necessary. We also do not believe that the fuel poor network extension scheme should continue with the uncertainty over the future of the gas grid. This scheme which mandates connection numbers for gas networks should be changed to ensure that other low carbon heat measures or energy efficiency measures are installed which do not lock in even more homes to a gas system.

End use energy efficiency

Our general view is that energy networks are better placed than suppliers to deliver energy efficiency but in order to have any success around this policy, Ofgem must work closely with Government to consider whole system approaches. Overall, whole system approaches which transform homes with both energy efficiency and renewable energy measures at the same time are some of the most cost effective and consumer centric schemes. (e.g. Energiesprong of the EFW scheme in Germany^{47,48}). Energy efficiency in our view is the priority energy policy area.

Driving Innovation and Efficiency

We do question overall whether companies which have been making such high returns should be provided with funding at no risk to innovate.

In our recent work on incumbency in the heat sector⁴⁹ we have spent some time investigating innovation work being led by the UK's gas networks. We have discovered some innovation by a gas network which is low quality. It also emerged (perhaps unsurprisingly) that most network innovation considering the future of heat has been carried out by gas networks and this work tends to focus on and favour gas based solutions. As a result, network innovation around heat has a general preference for gas. Because of the lean towards gas in heat innovation and the poor quality of the work we wonder whether money for innovation should be available to network companies via their regulatory mechanism. If there is to be money for innovation, then we think it is third parties which should be able to lead bids where they can identify potential networks savings or benefits, a peer review panel could also support this process. Perhaps like academic institutions, networks should be required to invest some of their own money into innovation, perhaps a set share of 30%. This would drive companies to only innovate where they truly believed there was value. The extent to which the outcomes of this investment is further used within networks might be a criteria for the EAMs.

Nevertheless, overall, our preference is that innovation derives from institutional change and via incentivised outputs rather than pots of money.

⁴⁷ <https://www.energiesprong.uk/>

⁴⁸ https://www.kfw.de/KfW-Group/Newsroom/Aktuelles/Pressemitteilungen/Pressemitteilungen-Details_10591.html

⁴⁹ <http://www.ukerc.ac.uk/programmes/decision-making/heat-incumbency-and-transformations.html>

Simplifying the price controls

As has been mentioned previously, increasing levels of PBR based on a long-term vision simplifies the regulation model.

Cost allowances would be set based on how the networks plan to meet the EAMS and how much of their revenue is projected to come from PSR's. The EAMS and increase in PSRs are based on understanding the availability, and value of, DER. The DER plan has been informed by customer/stakeholder views which in turn informs the costings for the business plan. It should not be necessary for Ofgem to add layers of extra complexity by having the business plans scrutinised by stakeholder panels again, as this scrutiny has already taken place. The incentive for companies to provide quality business plans first time comes from penalties if they do not meet the outcomes for the price control. As each company will have different methods for meeting the EAMS – given their different geographies and DER - the ability for companies to game is reduced. It is this difference in how each company chooses to meet the EAMS that will make benchmarking unnecessary.

7. Conclusion

We see this RIIO-2 review as an opportunity for both BEIS and Ofgem to reset themselves and lead the world by providing regulation that enables a swift and efficient energy system transformation. Transformational and disruptive changes in the way the networks are utilised, especially at the electricity distribution level, are expected in the next price control timeline. There will be an increase in the use of EV's⁵⁰, an increase in the installation of PV and (retrofitted) battery storage as householders realise the economic benefits⁵¹ with smart systems and IT as the enablers. When, and how fast, these changes will happen cannot accurately be predicted so it is essential that regulation is flexible enough to meet the changing demands on the networks, but also that the regulatory mechanism also encourages them. We like the NY REV model which has clear timelines for change, has increasing amounts of PBR linked to market facilitation and the meeting of public policy goals, and clearly confronts the changing energy system whilst also being determined to capture its opportunities for NYS customers and economy.

In some areas, globally, the energy system that we think of as the future energy system is happening now. It is essential that we take lessons learnt from these areas to enable the UK to create a regulatory framework that has the flexibility needed to incorporate DER, disruptive business models and ensure reliability and affordability.

We urge Ofgem to use this opportunity to create a fit-for-purpose regulatory mechanism that is flexible to meet all the expected, and unexpected, future network demands. Ofgem will need to tie together the policy objectives for networks from the Open Networks Project, the Industrial Strategy, the Clean Growth Strategy, the BEIS and Ofgem Plan for a Smart and Flexible Energy System and the Targeted Charging Review to create a process which allows GB to transform into a smart and flexible energy system.

⁵⁰ <https://www.nationalgrid.com/uk/articles/electric-dreams-future-evs>

⁵¹ http://www.r-e-a.net/upload/rea_storage_report-web_accessible.pdf