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# Comments on WPD's DSO Transition Consultation Document

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## 1. Introduction

The Energy Policy Group (EPG) of the University of Exeter welcomes the chance to comment on WPD's DSO Transition programme and applauds WPD for the efforts made in recognising that transformation is essential to ensure that the network can meet the future energy demands of all your customers.

IGov[1] is a project undertaken by the EPG. It takes the view that institutional and regulatory change is required to enable a transformation of the energy system to one that is decarbonised, affordable and secure. IGov has argued that the current energy system governance framework in GB is not fit for purpose, and IGov has proposed a 'straw' governance framework which it argues is fit for purpose[2]. This argues for a number of institutional changes, including a central role for active DNOs as a facilitator of change – we call these distribution service providers (DSPs, see below). At a high level, IGov argues that there are four key, inter-linked areas that require change, as shown in Figure 1: the decision-making process, including its institutions; the resetting to be customer and demand-focused; a move to a flexible and coordinated operation and design; and regulatory reform[3].

All these aspects are necessary for the energy system transformation. No one aspect can be expected to enable that transformation on its own – and they need to be complementary to each other. GB energy governance therefore needs a more directed and coordinated approach, which

[1] Innovation and Governance for a Sustainable Economy 2012-2016 and Innovation and Governance for Future Energy Systems 2012-2019
[2] http://projects.exeter.ac.uk/igov/paper-gb-energy-governance-for-innovation-sustainability-and-affordability-2/
[3] http://projects.exeter.ac.uk/igov/wp-content/uploads/2017/07/3.-Bringing-it-together-Catherine-1.pdf

includes ensuring that the system development is occurring at the required rate to meet the CCC carbon budgets[4].

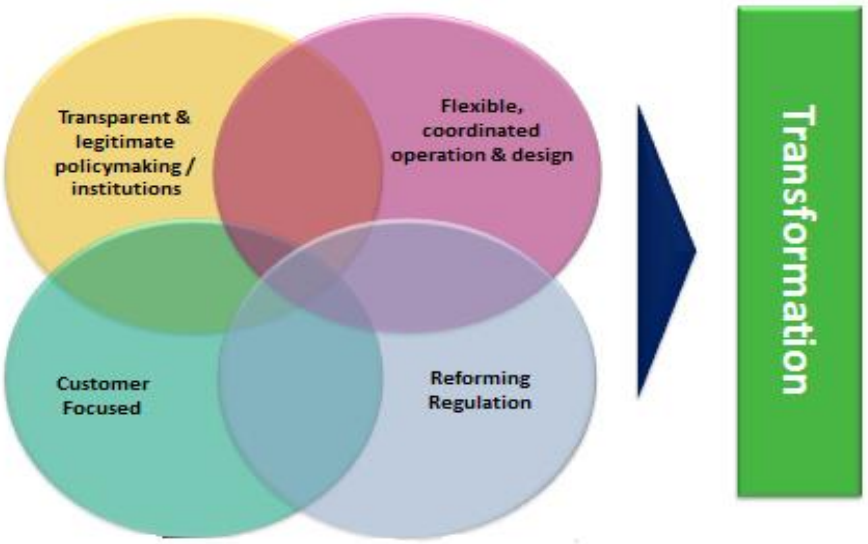


*Figure 1 The four governance areas requiring change in GB*

As Figure 2 below sets out, we argue that the 'heart' of the energy system is moving towards distribution and away from a linear, top down model to one of a more circular and integrated nature. We envisage a world where any actor who wishes to sell a resource (whether energy supply, energy demand, storage, system service etc.) is able to sell to whomever they wish either locally, or via the national wholesale market. In this world, distribution becomes more important as more of the transactions and decisions are taken at a local level (as customer preferences and needs change; as technologies become more decentralised; as heat and mobility decarbonisation policy start to become more inter-linked with electricity). It also becomes more important that the local level network and market outcomes need to be co-ordinated so that infrastructure and system costs do not spiral out of control. We see an active distribution company as the obvious actor to do this.

[4] https://www.theccc.org.uk/publication/2017-report-to-parliament-meeting-carbon-budgets-closing-the-policy-gap/

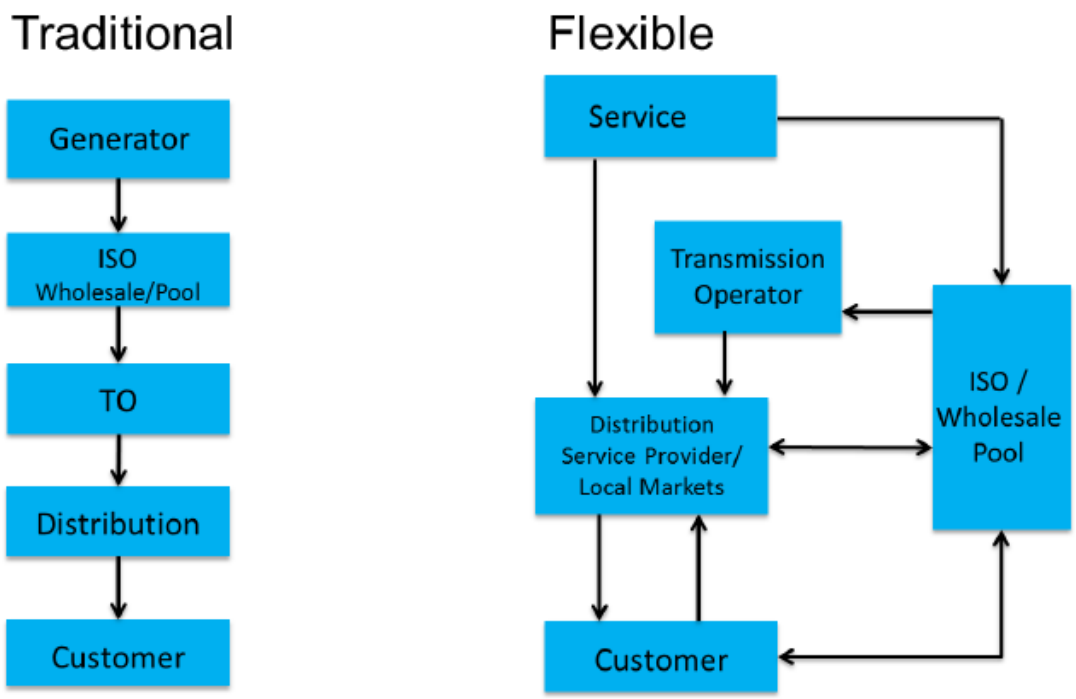


*Figure 2 The Organisational and Institutional Structure of a Flexible, Integrated and Coordinated Electricity System*

IGov takes the view that the name of the co-ordinating market facilitator – Distribution System Operator, Distribution System Provider, Distribution Service Provider, or Distribution Service Orchestrator – is relatively unimportant: it is the **function** which is important (see these two documents [5,6]). Our name preference is distribution service provider (DSP) because it implies services, and we take services to be supply and demand of energy, storage, system requirements and any other resource transactions customers may wish. 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.

Some reports suggest that by 2030 distribution grids will have completely changed their operations to incorporate the rise in DER[7]. The DSO/DSP will need to act as a market facilitator to incorporate this rise and create flexibility to allow for these known technological advances – as well as future unknowns. We have made recommendations to BEIS and Ofgem to transform current regulation to Performance Based Regulation (PBR) in order to create value for this new DSO/DSP market facilitation. This means greater linkage between PBR, network charging, availability of data and public policy. For this to occur in GB, it would require more direction from Government and Ofgem. WPD goes some way to describing their vision in general. We would have liked to have seen a more independent vision detailing their ideas about how these different dimensions of change could be brought together to enable WPD to present itself, and become, the progressive DNO.

[5] 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/

[6] See slide 17 http://projects.exeter.ac.uk/igov/wp-content/uploads/2017/07/CM-Pixie-Launch-July-2017.pdf

[7] Ravens, S., Lawrence, M. (2017) *Defining the Digital Future of Utilities Grid Intelligence for the Energy Cloud in 2030 Section 1*; NIC (2016) *Smart Power*.

IGov has spent some time exploring the New York Reforming the Energy Vision (NY REV) model of future energy system transformation, and within this the Vision's idea of a distribution system provider[8]. The NY REV has suggested bringing together public policy goals with new performance based regulation (PBR) incentives on distribution utilities so that total cost to customers is kept down whilst also ensuring that networks are fit for purpose to deliver public policy goals[9].

Figure 3 sets out a conceptual idea for altering the basis of distribution network revenue, via PBR, in NYS[10,11]. 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, and a transaction element. Two thirds of this revenue is 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.

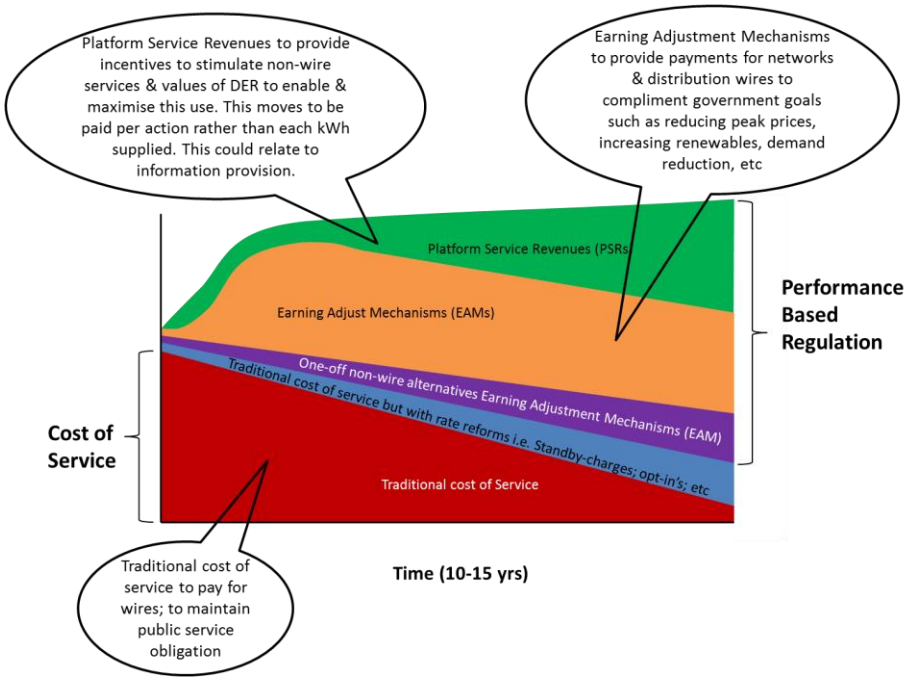


*Figure 3 The way DSP's will earn revenue in NYS. Transforming of regulatory revenue over time - example of electricity distribution companies.*

[8] Distribution system provider as opposed to a distribution service provider, adopted by the EPG

[9] http://projects.exeter.ac.uk/igov/wp-content/uploads/2017/07/CM-Pixie-Launch-July-2017.pdf and http://projects.exeter.ac.uk/igov/notes-on-the-ny-rev-ratemaking-order-19-may-2016/ and http://projects.exeter.ac.uk/igov/comparing-nys-and-ca-blog-1-series-overview/

[10] This is revenue for a combined distribution SO, wires and supply business but in fact is as useful for a combined wires and SO business, with separated supply as in GB. If the SO part of a distribution service provider were separated from the wires, then it becomes even easier to pay for the networks in future years – but that creates major problems, at least in the short term, for distribution SO knowledge base

[11] This is Catherine Mitchell's attempt at visualising the NY REV ideas. The NY REV itself does not provide a figure like this, and we recognise that this conceptualisation is very simplified so caution has to be used when discussing it.

## 2. The WPD DSO Plan and Consultation Questions

At a high level we are supportive of the ideas and process WPD has put forward in the DSO transition strategy document. The section below provides feedback on the approach and the questions asked. We would note however that the summary document and the transition strategy document questions differ somewhat.

The rationale for moving towards a DSO model is clearly set out and we agree with much of the thinking that has taken place. As the technologies adopted across D3 (demand reduction, demand-side response and distributed energy resources (including PV, EVs and storage)) continue to gather pace and continue to be deployed at the distributed level the pressure on DNOs to become more like DSOs will increase. The high-level principles WPD has set out appear to cover many key issues, although more detail on some of these would be helpful. See Section 3 for the gaps in the consultation.

A key problem of the plan however is its limited ambition of the DSO. We would have hoped that all DNOs would have markets for flexibility by now given that making DNOs active has been part of the national discussion for at least 15 or so years. We think that changes are happening so quickly in the energy system that this lack of ambition will very soon be seen to be too little too late. Because of this, we would have liked to have seen more context in the plan for further changes to WPD into a more sophisticated distribution service provider (DSP, and discussed further below).

Moreover, we would have liked to have had a much clearer timeline for these changes. As argued below, we would have liked to have seen WPD produce a distributed energy resource plan within 2 years (say by 2020); this would open up transparency and data in their areas; and this would also enable the introduction of flexibility markets by 2021. This would allow alignment of RIIO-2 price controls for distribution, transmission and GBSO. We are also not sure how realistic your timetable for change may be. Whilst this fits the price review timetable, we would suggest that your DSO transition will need to happen more quickly, because regulatory and policy change, as well as system disruption and change is likely to happen more quickly than is currently anticipated in the WPD plan.

In terms of the high-level plan for the DSO transition, the work streams make sense. We anticipate WPD has in place plans for internal coordination between work streams, but we think external coordination will become increasingly important. This is not just working with National Grid, but coordinating with other DNOs, heat networks, Ofgem, BEIS and other market actors. It seems likely to us that the need and pressure for developing a whole system approach across electricity, heat and transport will grow rapidly in coming years and the plan would be more robust if this is taken into account. This is not something WPD could lead on, but you should highlight the issue in the DSO plan and call on the regulator and policy makers for this need.

As a result of this, we are not sure that the four-point plan put forward is robust enough and we have provided comments on this below.

### 2.1 DSO Transition – Approach and Implementation (questions 1 to 6)

We agree that the move towards DSO/DSP operations is essential for the future needs of WPD's customers and the system as a whole. Although it should be recognised that not all customers or system actors may agree and any approach to change has to take account of this.

Whilst the priorities and approach (question 2) set out by WPD cover many of the aspects that DNOs need to consider in moving to a DSO model, we think it is a mistake to prioritise them for two reasons.

Firstly, these principles are interlinked and there is a risk that placing more importance on some over others will inevitably narrow the range of options needed. At the moment, DNOs are incentivised via RIIO which very clearly prioritises some functions over others via financial incentives [12,13]. Our motivation to push for a higher proportion of PBR to be linked to distribution revenue is to better enable WPD / other DSO/DSPs to choose the option that will be of most benefit to the consumer rather than the DSO/WPD's investors.

Secondly, a PBR model negates the need to prioritise transition principles as these outputs can be delivered based on local area needs. Priorities in one DSO/DSP area will be different to another area and is a central reason why we think that PBR is preferable to a benchmarking RIIO type incentive.

With respect to Question 3: Moving to a DSO is a fundamental change of direction for DNOs. We support in principle the idea of shifting incrementally in terms of modes of operation within a plan with clear time guidelines. This should allow for learning by doing, building knowledge and skills and saving unnecessary costs. However, the reality is that the necessary pace of change is significant and the luxury of piloting, evaluating and developing new approaches may not exist or may be cut short. WPD will need to be nimble in its plans to allow for unexpected changes. We think moving to a DSO is something which should have been done already, and therefore we are not sympathetic to a long time scale. We see being a DSO as a step towards being the full DSP – a timeline for this wider transformation should be included. If one imagines the transformation from a DNO to a Distribution Service Provider (as discussed below) on a scale of 1-10, then the WPD DSO steps it describes is at about 3 or so. This is an important and useful step to make on the road to transformation from a DNO, but we would like to see more details and timelines about steps 4-10 i.e. And more pushing of the boundaries.

A clear sense of direction will be important, and preferably this would be linked nationally (i.e. other DNOs, Grid, Ofgem, BEIS).

We have recommended that each DNO should be expected to produce a distributed energy resource (DER) plan[14] as a required output before RIIO-2 commences. We would hope that RIIO-2 would commence in 2021 – i.e. a reduced time period from 8 to 6 years for distribution networks, but aligning with transmission. This DER plan would enable DNOs to (1) know what distributed energy resources are available within their energy systems – in terms of place and time, and with respect of supply, demand side response, storage, other flexibility resources etc.; and (2) have a parallel methodology of how to value that DER. We would expect that it is possible to produce these plans over a 2-year process to recognize the value of future network systems, and to bring interested parties together. From this knowledge, it would be possible to incentivise various non-wire alternatives, services or goals, such as bringing down peak prices, peak capacity requirements, increase DSR etc.

We also think it is increasingly essential for WPD and other DNOs to work openly and transparently about the change being implemented in the move to a DSO/DSP. This should include sharing lessons and costs between DNOs, the GBSO, system actors, customers, the regulator and policy makers. We would recommend that WPD push the Regulator for a target date whereby all DNOs will be expected to have completed both their DER assessments and their transition to DSO.

[12] http://projects.exeter.ac.uk/igov/wp-content/uploads/2017/09/Comments-on-the-Open-Letter-on-the-RIIO-2-Framework-submission-from-EPG-Sept-2017.pdf
[13] http://projects.exeter.ac.uk/igov/new-thinking-the-riio-edi-review-just-how-successful-is-riio/
[14] http://projects.exeter.ac.uk/igov/new-thinking-reset-the-reset-3-der-walking-the-walk/

The IGov research has put forward a framework which includes the idea of an Integrated and Independent System Operator (IISO) which works with the DSPs to establish timelines and changes necessary for GB to meet the CCC carbon budgets[15]. In the absence of an IISO, the GB process is for DNOs to come up with a plan for their transformation – hence the WPD plan. We are therefore arguing that WPD needs to be clearer on timelines for their transformation, and the details of that. And we are adding in our requirement, that a vital part of system transformation is the development of a DER plan.

Because of this, we do not agree that updating the EHV networks first makes sense (Question 4). We consider this to be a traditional top-down optimisation way of operating the system. It is clear that DER and DSR is, and will, continue to develop at multiple levels within the WPD network; as will demand reduction initiatives. It seems to us that disruption to the current network model will appear on all voltage levels especially due to the emergence of smart technologies on the LV network. The uptake of EVs in the LV network in particular could happen quickly and be very disruptive. Sales are already starting to move away from diesel and petrol cars, and recent reports have suggested that by 2020 EVs will be competitive with these,[16] therefore to not concentrate on the LV network could lead to serious constraint issues and risks of Brownouts[17].

We are also of the view that the case for optimising the system from the bottom up[18] (as well as the top down) is growing and will only continue to grow as the system decentralises. In many respects, it is only from the bottom up that best solutions for power, heat and transport will emerge, the case for making the whole network smart will only grow.

A final point on the top down EHV network upgrade is it misses a key opportunity to learn by doing – even if it is not realistic to upgrade the whole network (something that has not been made clear in the DSO plan), then it would make sense to at least take one part of the network and upgrade the visibility and control across all voltage levels early on in the DSO/DSP process – that will provide some vital learning for later stages of the transformation. Perhaps trialling this in an area with current high constraints, like Cornwall, would be a sensible addition to the DSO plan.

In order to deal with these constraint issues, it will be up to WPD as a DSO/DSP to open the market for solutions. This does not mean that there is an either / or between smart intervention or security of supply, but purely the most viable solutions to ensure security of supply whilst moving to a decarbonised electricity system. We are concerned that WPD thinks that there needs to be a choice between the two as posed in Question 5.

Question 6 is what do we think is missing and we discuss this below in Section 3.

### 2.2 Flexibility Services and Products (questions 7 to 12)

It would be wrong to assume that there will be a clear balance between the provision of flexibility services - flexibility will come from a variety of third party sources. Once WPD has transformed to a DSO/DSP, it should act as an open and transparent market facilitator, WPD should use whichever market solution is the most cost effective for customers, ensures security of supply and promotes

[15] http://projects.exeter.ac.uk/igov/paper-gb-energy-governance-for-innovation-sustainability-and-affordability-2/ and http://projects.exeter.ac.uk/igov/wp-content/uploads/2017/09/CCC-Mitchell-19-September-2017.pdf
[16] https://www.ft.com/content/6e475f18-3c85-11e7-ac89-b01cc67cfeec
[17] http://www.green-alliance.org.uk/resources/People_power_how_consumer_choice_is_changing_UK_energy_system.pdf
[18] http://projects.exeter.ac.uk/igov/new-thinking-optimising-the-energy-system-from-the-bottom-up/

decarbonisation. We do not see WPD as an owner of flexibility services. This specificity is insufficiently discussed in the document.

DSOs should expect that multiple LCTs within domestic customer homes will be commonplace within 2 years. Clearly this will occur if smart meter rollout to all domestic customers and mandatory half hourly settlement occurs. But even if it does not, there is already sufficient demand from new entrants and customers now for DNOs to have altered the way they interact with such customer service wishes.

Cost reductions associated with battery storage will drive down costs of EVs and make storage increasingly attractive for a range of customers within the network. New storage markets are also likely to emerge, such as the car industry selling older batteries from EVs into the domestic and I&C markets – making it a more affordable option for many. It seems likely that storage will become the key form of flexibility, beyond smart appliances and time of use tariffs, etc. In addition, low carbon heating (hot water) will also create new options and challenges for flexibility and WPD should engage with these opportunities as part of the DSO plan, to better understand how heat and power (and transport) could come together.

However, demand side response (DSR) is also essential – and it is not clear whether WPD counts DSR as a LCT. The DSO plan should also recognise and take account of the importance of demand reduction given the central role that this will play in the creation of a sustainable energy system.

DSOs should expect to use domestic, commercial and industrial LCTs to provide flexibility but should recognises that this will not be up to WPD. Different customers will interact in different ways and with different actors in flexibility markets and this will be influenced by the sorts of technologies, the types of companies and the range of services that emerge. New markets for flexibility would arise now if the value was there. There are multiple new entrants wanting to get in this space – and it is the lack of value and data which is stopping its development. Examples include 'local energy markets' such as the Centrica model, local authority energy zones grouped by area, more dispersed markets contained within an independent aggregator portfolio, as well as the emergence of transactive energy and peer-to-peer trading. There is also the approach that Pixie Energy are taking, which is based on there being no one right solution, rather different options for different areas that reflect local circumstance.

WPD will need to recognise that a range of different options will emerge and help facilitate these to ensure the effective development of the system locally and as a whole. It will be essential that the new market gives value to all consumers for their ability to provide these flexibility services. If the DSO/DSP is expected to be an independent market facilitator, then services for flexibility should be obtained through the market. However, some flexibility services such as voltage reduction and Power Electronic Equipment can be seen as normal operational services and will also be needed. Collectively the direction and rational for DSOs should be about ensuring the best use of assets and resources (supply, demand, storage, etc) to avoid capital expenditure.

The balance between what the DSO does itself and what it just facilitates is likely to be a source of considerable focus and scrutiny in the future. Recent reports [19,20] on the cost of network charges is already beginning to put DNOs in the political and media spotlight. It seems likely that this will continue. There will be a balance between the wires and flexibility roles that any DSO plays. If there is a perception that network companies are starting to become too powerful over system change

[19] http://eciu.net/assets/Reports/ECIU_Monopoly_Money.pdf
[20] https://www.citizensadvice.org.uk/Global/CitizensAdvice/Energy/EnergyConsumersMissingBillions.pdf

and operation, or if conflict of interest develop, it is possible pressure could emerge requiring the separation of the wires and operation role of a DSO/DSP.

We see this area as the most concerning. As yet, it is too soon to really understand what the best approach would be. In principle, it seems to us that at least in the short term, the wires and the SO role of the DSO/DSP should stay together. At the very least, if the wires company is separated from the SO – the SO has to be paid sufficiently to coordinate the local networks and local markets. An assumption as shown in Figure 3 above is that the network company will have 3 sources of revenue: effectively one source for the wires and two sources for system operation – and in this way, there is a link between public policy goals and energy network outputs. We like this new role of regulation and markets.

However, the Danish transmission electricity and gas system operator Energinet, is currently in the process of buying up some gas distribution networks system operator arms (i.e. separating out from the networks themselves) so that it can become a genuine system operator.

One thing we are certain of is that the distribution areas need system coordination with the markets in their areas – otherwise, values cannot be revealed – and that this is the central function of the SO aspect of the DSO. It is therefore imperative that the WPD transition to a DSO is open and transparent with data, thereby being facilitative of system change. Clearly, it should not be using its monopoly characteristics to maintain its market power; nor should it be a direct competitor to other market actors or act as a barrier to new business models.

Arguably I&C customers already provide flexibility services within the market, either directly or via aggregators. It therefore seems realistic for DSOs to expect that I&C customers will be able to provide significant flexibility services to the network within 2 years.

### 2.3 Market Models (questions 13 to 17)

We believe that WPD should establish a timeline to move to a DSP (i.e. moving beyond becoming just a DSO). This cannot happen all at once, as shown from New York State, but the move has to be within a clear timeline plan and the final point of that plan has to be a DSP. IGov have noted that the DNOs would prefer to transition to something which is already similar to their current model but moving to the DSO Led Market Model is the preferred route of the three options to enable energy system transformation[21]. As discussed above, we argue that by 2021, the WPD should have a DER assessment and should have developed flexibility markets, thereby becoming a DSO.

WPD's DSO led model reflects that the energy system has already become much more decentralised and increasingly pointing towards a need for local balancing and local markets. This approach in our view is likely to be more customer focussed, which we see as essential as to the future of the system[22] and the need for it could quickly grow with the uptake of EVs and storage. WPD's view of how the market will gradually shift makes sense to us but we also do not agree that market models should simply de facto develop due to the absence of an overall controller of direction. Transforming the energy system to meet the CCC carbon budgets is challenging, and more direction is needed from Government – as argued in the IGov framework.

[21] 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/

[22] http://projects.exeter.ac.uk/igov/wp-content/uploads/2017/02/People-Demand-and-Governance-in-Future-Energy-Systems.pdf

The need for top down guidance is vital in this process and WPD should continue to lobby BEIS and Ofgem for vision and direction – something our IGov research see as essential[23]. The shift towards DSOs and decentralisation requires a clear and strong vision from Government and a regulatory environment that can support it – a restructuring of RIIO-2; network charging and market design. The need for such a vision will only grow in urgency as the realities of tackling heat and transport cross over more into electricity. More than ever before, there needs to be cross party support for change and long-term direction, based on both market based solutions and intervention.

The application of market models will be shaped by a variety of drivers, not just network constraints. WPD should facilitate suitable solutions within its network area recognising that different models will emerge in different areas, at different times and for different reasons. As long as these support system decarbonisation, maintain security and provide value of money for customers, WPD should help to facilitate them.

If planned, implemented and amended to reflect changing system and market dynamics and needs, we think that ultimately, of the 3 options, the DSO-led market will deliver a more efficient whole system outcome. Whilst network constraints will be a key driver of market models, it will not be the only driver and support for other markets based on customer, commercial or geographic need should not be hindered by a DSO.

### 2.4 Overall Conclusion of Questions 7-17

In summary to our discussions above:

- Question 7, we broadly think flexibility will be delivered by third-party actors, and it is for the DSO/DSP to coordinate that;
- Question 8, we think LCTs with respect to domestic customers will be commonplace within 2 years;
- Question 9, yes - we think they should be able to be involved in providing system flexibility, and this is likely to be via aggregators – this may be via EVs but it should also be via demand side response;
- Question 10, yes - we think DSO/DSPs should be able to access flexibility via industrial and commercial consumers within 2 years;
- Question 11, we think DSOs/DSPs should set up markets for flexibility and then if industrial and commercial customers come forward use them. WPD should not be targeting industrial and commercial as a priority. This is why PBR is so important. We want DSOs/DSPs to be the coordinator for the area and to deliver a cost effective, sustainable, affordable and secure energy system which is customer focused – and that means all customers not just industrial and commercial;
- Question 12, no – as yet there are not sufficient incentives and value within the incentives to deliver a flexible and cost-effective energy system. This is a combination of network charging, PBR, markets, institutional and regulatory reform. We are pleased WPD has put forward a plan to be part of this, and to do what it can to be a market facilitator but ultimately it needs new incentives to allow it to really provide a cost-effective solution for customers;
- Questions 13 and 14, IGov has looked in detail at multiple market models (various US States, Denmark, Germany, Australia), and the outcome has been the IGov framework[24];
- Question 15, we agree with much of the strategy – but we consider that it leaves too much out;

[23] http://projects.exeter.ac.uk/igov/wp-content/uploads/2016/11/Final-Framework-Paper.pdf
[24] http://projects.exeter.ac.uk/igov/wp-content/uploads/2016/11/Final-Framework-Paper.pdf

- Question 16, markets should be developed to overcome the problems of system constraints;
- Question 17, yes - we believe that a move to active distribution network companies is the only way to integrate electricity, heat and transport; be genuinely customer focused; and minimise the cost of the energy system transformation.

## 3. What we think is missing from the WPD consultation

We think there are a number of issues which are missing from the DSO plan, and these fall into the following areas:

- insufficient detail about institutional structure (is this a combined wires and SO future, or separate); this leads on to
- insufficient detail about co-ordination (in our view, it is vital that there is an organisation which coordinates markets and networks – and in our view the DNOs are best placed to do this);
- insufficient detail about how to deal with uncertainty and change;
- insufficient detail about timelines (should DNOs become DSOs by 2021?) and what does WPD think about the wider transition to a DSP (and what would that timeline be?);
- insufficient detail about data (we think it needs to be transparent and resulting from a DER assessment to be finished within 2 years, and overseen by Ofgem);
- insufficient detail about markets (what sort of markets and how do they interact and how are they coordinated?);
- insufficient detail about the incentive mechanism, and insufficient detail about the cost and revenues of future business models (i.e. who pays for what in this transformation, and who gets paid for what?).

These gaps can be boiled down to two broad areas:

Firstly, the system won't change in a way WPD, or others, expect. WPD needs to demonstrate it has a strategy in place for reacting to change.

Secondly, the lack of discussion around institutional issues, timelines etc is possibly because WPD does not want to open up discussion too widely about future network options because to do so might lead it to a very different future. We think this is unhelpful. We think WPD has the best chance of becoming a genuinely customer focused, progressive, successful company if it does confront issues. Given the overall lack of direction from GB government, we think it is much more likely that some unsatisfactory market model will develop to the detriment of WPD and customers, if WPD does not confront all possible options.

### 3.1 Transition Costs

We welcome the fact that WPD is the first DNO to actually put a figure against the cost, others should do the same and Ofgem should request this. This cost of transformation is part of wider inter-locking issues – network charging, RIIO-2, institutional change etc. Establishing the most cost-effective means of transformation is a central reason why more direction is needed. DNOs should not be asking for £X for infrastructure upgrades etc to do this - without their role (and the needs of this) being put into the overall transformation framework and cost discussion.

As to who should pay for this cost, we do not think this should be an addition placed on consumers, particularly as there will be distributional costs and benefits in moving to a DSO. The need for DNOs

to become active has been argued for at least since 2000 and the publication of the Embedded Generation Working Group[25]. Moving to a DSO or DSP is a change to DNOs business model and given the pace and urgency of change, there is a case for seeking more clarity on what these costs are, and then how they should be paid for.

Options could be from savings within the current price control, NIA funding, as well as charging businesses that make use of the network to deliver services. Perhaps the most important thing will be for all DNOs to be transparent about estimated and actual costs of changing business model, as well as being transparent about estimated and actual savings made by the DNO in becoming a DSO.

We do recognise that WPD has put its head above the parapet on this issue but we do take the view that for WPD to transform into a market facilitator, the WPD system data has to be freely available. Only then, can value of different markets be revealed and develop. As we have called for elsewhere, we think a central step in understanding what the role of distribution will be in the future is to undertake a DER assessment, involving all stakeholders so that all potential values, markets, services and costs can be thought about and assessed.[26]

## 4. Conclusions

The EPG welcome the opportunity to comment on WPD's DSO Transition Consultation document.

The need for coordination will increase at all levels within the system. This will be true for the DSOs dealing with different customers wanting to do different things, from incumbent and new actors wanting to offer different services at the DNO level and from services that WPD may need to help manage the system. It will be increasingly important that services required by National Grid are coordinated with DNOs. As DNOs set out their plans to become DSOs, the need for whole system coordination will become stronger. We recognise that different DNOs have different issues to deal with, but decarbonisation, security and affordability can't just be driven from the bottom up, it also needs top-down optimisation and middle out coordination. With most DNOs in the process of setting out their plans to become DSOs the system could become uncoordinated very quickly. Ultimately the responsibility for setting out a clear long-term vision and direction should be set by government and supported by a fit for purpose governance system. Currently whilst BEIS is clearly stating that it wants a smart and flexible energy system, it is not stating how it wants that to happen and by when; and it is not demanding any coherence of market actors.

WPD and other DNOs should push for this direction and clarity, given the profound nature of system change we, and they, are moving into.

In addition, the networks need to come closer together across different vectors. There needs to be a process – as set out in the DNO plans - to work with heat and mobility counterparts. GB needs to start finding solutions across heat, power and transport to ensure a whole system approach to changes is taken – DSOs in the electricity sector are only one part of this larger jigsaw. WPD should lead from the front and continue to call for government and the regulators to support a whole system approach, as well as continue with the development of innovation projects with gas networks and grid.

Data will become a key driver of system change and coordination in the future and access to it will be vital. WPD should treat network data as a public good, ensuring that it is openly visible to

[25] http://webarchive.nationalarchives.gov.uk/20100919181955/http://www.ensg.gov.uk/assets/21_10_2002_main_report.pdf

[26] http://projects.exeter.ac.uk/igov/new-thinking-reset-the-reset-3-der-walking-the-walk/

customers and companies wishing to do new things within the system. It will also play an important role in ensuring that system is optimised, as the right data will result in more optimal solutions in the best location in the networks.

Optimising the system at the DNO level will require values in the system to be more open – so data needs to be opened up to allow solutions to come forward. This optimisation should also insure that the facilitative role that networks play will enable people to access value in the system to pay the appropriate system costs i.e. those that are able to make money within the system.

The DSO/DSP model should seek to be the key coordinator of the energy system at the local level, facilitating change by identifying how to access the market and revenue streams within it, and then revealing that. The scale of necessary system change to meet the CCC carbon budgets are considerable and will need market and data arrangements for assets right along the whole energy supply chain.

In the long term, we see a switching of roles in system balancing. We think that the DSO network will become increasingly more important for system balancing; whilst the national transmission network's role will diminish to the point of providing low level baseload requirements and evening peaks. WPD's initiatives for how to become a network balancer are therefore a vital part of the DSO transition plan.

A key challenge going into the future is how to pay for networks and getting the balance right between customers and the wider actors that use the system to make money, on both the generation and demand side. WPD, the regulator and BEIS will need to keep tracking future network costs and revenues.

The EPG welcome WPD's efforts to advance the DNO/DSO transition process and hope that this response will be beneficial to WPD in enabling a clearer understanding of the complexities of energy system transformation. Ultimately we think WPD should be ambitious in its plan, including thinking beyond the DSO model to become a full DSP.

We realise we have raised many complex issues in this response and the EPG would welcome the opportunity to discuss these issues with you further if you wish.