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Ofgem Call for Evidence on Future arrangements for the electricity system operator: its role and structure

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1. Introduction

The Energy Policy Group (EPG) of the University of Exeter is pleased to respond to Ofgem's Call for Evidence (CfE) on Future arrangements for the electricity system operator. Issues of innovation and governance within energy systems form a major focus for EPG research, and in particular the four-year RC UK funded project Innovation and Governance for a Secure and Sustainable Economy (IGov, 2012-2016), which has now been extended to become Innovation and Governance for Future Energy Systems (IGov2, 2016-2019). Many of our arguments below have come out of the IGov work.[1]

We welcome the CfE (and its sister CfE in to SO regulatory and incentives framework[2]) which we believe represents thinking with potentially far-reaching consequences. This CfE follows on from the Joint Statement on the future of the Electricity System Operation by Ofgem, BEIS and National Grid[3] which argued for a legally separate SO *within* the National Grid Group (NGG). The joint statement argues that the SO should be 'ready to adapt further as system challenges continue to evolve' or be able 'to adapt further to the changing system in future', although it does not set out alternate roles for the SO which might allow them to 'adapt further'.

We understand that this *Call for Evidence on Future arrangements for the electricity system operator: its role and structure* follows on from the Joint Statement, and therefore the questions it asks broadly derive from that Statement. However, for reasons discussed below in our opinion the decision to move to a legally separate SO within NGG is the wrong choice in such a rapidly changing

[1] http://projects.exeter.ac.uk/igov/; http://projects.exeter.ac.uk/igov/wp-content/uploads/2017/02/14-Feb-cross-campus-energy.pdf
[2] https://www.ofgem.gov.uk/publications-and-updates/future-arrangements-electricity-system-operator-regulatory-and-incentives-framework
[3] https://www.ofgem.gov.uk/system/files/docs/2017/01/statement_on_the_future_of_electricity_system_operation.pdf

energy world. Time and effort will be required to separate out the SO *within* NGG, but even then it will not be in a position to meet the desired objectives and play the desired role set out in the CfE effectively, and is not likely, therefore, to pass any rigorous analysis of value to customers. We believe the incremental time and effort needed to fully separate the SO *from* NGG will not be large. Unlike an SO still within NGG, a fully separated SO would be a genuinely independent institution, more likely to be trusted, and capable of fulfilling its role in helping GB to meet the objectives set out in the Joint Statement.

It is also important that that role be seen in a holistic context. There are multiple decisions being taken in the GB energy sector currently, and without a clear strategic overview of where the energy system should be heading the risk of silo-ed and un-joined up decision making is high.[4] We understand that BEIS wants to move forward with institutional change for the energy system – in this case the electricity SO - but we need a clear vision for GB's institutional requirements in order for us to do this effectively. Only once we have an overarching framework can we know what institutional changes will be needed for the SO to fit together with other institutional changes needed to deliver a sustainable system. Too often decisions in GB are made which then have to be remade, or are a step back on what was a stated policy objective.

In developing a framework for GB energy governance within the IGov project, we have argued that the current governance framework is not fit for the purpose of handling the major changes in markets and networks that are needed.[5]. We have argued that within that framework we need a System Operator that is: (1) wholly separated from National Grid and not for profit; (2) integrated across sectors (electricity, heat, gas and electric vehicles) and across transmission and distribution, and (3) undertaking a vital leadership role of delivery of network infrastructure and market design which will lead to a whole system approach to delivering cost-effective, sustainable and secure energy. Within this latter point, we argue that this leadership is embodied by the IISO having a responsibility for system security being placed upon it; as well as a responsibility for delivering the infrastructure needed to meet the Committee on Climate Change's (CCC) carbon budgets. This is discussed more in the section below on SO roles. Importantly, major change in governance is needed because we need a step-change in the reduction of greenhouse gas emissions to meet the Government's Carbon Budgets. We simply do not have the luxury to continue our past rate of change. Only a fully independent, separated SO can command the kind of respect and trust necessary from actors in the wider system, including the TO, distribution companies and new entrants, necessary to lead and deliver such a transformation to and meet the three objectives above.

However, we would also argue that a fully integrated and independent system operator (IISO) is just one dimension of a number of changes envisaged in the IGov framework that need to take place within an effective whole systems approach.

The driving of competition and efficiency, and the promotion of innovation (the second and third objectives) will require several other institutional changes. At the distribution level, we argue that what are currently distribution network operators need to become distribution service providers (DSPs), somewhat along the lines envisaged in New York State's reformed energy vision. Ofgem's

[4] In addition to this consultation on the institutional arrangements for the SO, there was the recent major Ofgem/BEIS consultation on moving to a smart flexible energy system. Last week, the Regulator announced there is to be a Targeted Charging Review, which may be a SCR. Yet Ofgem has also just announced that it is minded to approve the cutting of embedded benefits in a way that does not seem at all joined up with the wider thinking, in an unsatisfactory short term fix.

[5] http://projects.exeter.ac.uk/igov/paper-gb-energy-governance-for-innovation-sustainability-and-affordability-2/

role needs to be changed, with a return to a core focus on economic regulation. Code governance arrangements must move away from self-authored regulation and be placed within an independent body, probably under the ambit of an IISO. We also need changes to market design and the creation of a market monitor and a data body in the public sphere. Crucially, we need an acceptance that more direction is needed within the GB energy system in order to reach a cost-effective, innovative, flexible and smart energy system. An IISO, and the leadership it can provide, is central to that.

This submission is set out in the following way. Section 2 addresses the CfE questions on the role of the SO. Section 3 addresses the question on the independence of the SO.

2. The role of the SO

2.1 Question 1: What are your views on our proposed objectives for the SO?

We are broadly in agreement with the three objectives identified in the CfE, i.e.:

- Overseeing a safe, resilient and cost effective electricity system
- Driving competition and efficiency across all aspects of the system
- Promoting innovation, flexibility and smart/demand-side solutions

However, we would make two additions:

- Within the first bullet: we would add 'secure', as a responsibility for system security should be placed on the SO
- We have also argued within the IGov framework, that the most fundamental objective for a sustainable, trustworthy, equitable and cost effective energy system is that it become more people-focused, with a meaning that goes well beyond bills and switching[6]. Your high level objectives omit this, and we see this as a gap.

2.2. Question 2: What are your views on our expectations for how the SO should seek to achieve these objectives?

We have answered these in the order that you set out the 4 roles, while noting that there are inevitably some overlaps between these:

- Acting as a residual balancer
- Facilitating competitive markets
- Facilitating a whole system view
- Supporting Competition in Networks

However, we also have added two further roles that we believe are necessary but that the CfE does not explicitly address:

- Handling interfaces between electricity, gas, transport and heat energy systems
- Decarbonising the electricity (and wider energy) system

[6] http://projects.exeter.ac.uk/igov/working-paper-people-demand-and-governance-in-future-energy-systems/

2.2.1 Acting as a residual balancer

We broadly agree with the role of the SO **acting as a residual balancer** (Role 1), and the need for a transformed SO to both provide more information to market participants and to have a greater visibility of distributed energy resources.

However, much of the discussion in the CfE appears to be premised on assumption that balancing will continue to happen within current BETTA market arrangements, whereas there are a range of alternative, preferable possibilities. For example, within the IGov project we have argued for a transition to arrangements where distribution utilities become market facilitators and co-ordinators of DER, thereby moving some market activity down from the wholesale market to more local markets. While the full implementation of this kind of structure may be a longer term issue,[7] the initial steps of moving towards distribution *system* operation are already underway and these should be seen as a first step in the process to full transformation[8]. It seems to us that these sorts of possibilities, and the links they might require with the SO should be thought about now rather than later.

2.2.2 Facilitating whole system outcomes

We agree with the proposed role for a re-envisaged SO in **facilitating efficient whole system outcomes** (Role 3 in the CfE). We also agree that this will require a "change in mind-set and/or cultural shift within the SO" (para 2.5). We see this as closely related to the second part of the CfE on the independence of the SO.

In a recent paper discussing the governance framework for energy,[9] we argued that there are further reasons for rethinking the role of the system operators, in both electricity and gas.[10] With essential technical expertise and knowledge of the details of the system, SOs are key actors for the delivery of the transformation of the energy system towards a low-carbon, more decentralized and more flexible future.

However, at present the SO focuses almost entirely on the transmission level, whereas the major transformations are likely to come at the distribution level, nearer demand. This imperative means abandoning the old separation between transmission and distribution in system operation, because in future a lot more of the balancing of the system should be happening at the distribution level through local generation, storage and demand management. While there are several possible models for platforms and markets for such activities, we have explored the distribution service provider (DSP) concept being developed in the NY REV in particular detail. DSPs effectively provide platforms for local markets and network services. They are distinct from, and go beyond, the distribution system operator (DSO) concept,[11] in which DNOs take over some of the roles of the national system operator (e.g. related to system services such as on frequency and voltage control,

[7] For example, New York State in the USA is implementing the New York Reforming the Energy Vision. This has set out a timetable of about 10 years to transform DNOs to DSPs. For further information and links see the 2016 IGov blog about the NY REV - http://projects.exeter.ac.uk/igov/us-regulatory-reform-ny-utility-transformation/

[8] http://projects.exeter.ac.uk/igov/presentation-smart-and-flexible-a-vision-for-2020/

[9] http://projects.exeter.ac.uk/igov/wp-content/uploads/2016/11/GB-Energy-Governance-for-Innovation-Sustainability-and-Affordability.pdf

[10] See IGov blog post Not just independent but also integrated, 4 March 2016,

[11] http://projects.exeter.ac.uk/igov/wp-content/uploads/2017/02/PRASEG-28-Feb-2016.pdf

possibly reactive power, reserve, handling constraint etc.) but which does not include energy services.[12]

A key issue here is then the nature of the interfaces between local, distribution and transmissions levels, not just in terms of technical operation but also in terms of governance and longer term system planning. As the CfE notes, the existing NGET SO now plays an increasingly central role in looking forward and informing or undertaking planning, through the FES, the TYS, the transmission level NOA and the SOF. The CfE document calls for greater coordination between transmission and distribution levels on both near term operations and longer term planning, which also suggests a much higher degree of information exchange than is currently the case. It suggests that the SO take a proactive approach to transforming the interface. Importantly, it also suggests moving beyond the current work done through informal groupings such as the ENA T&D Interface Steering Group to a more formal coordination structure.

We strongly agree with the principle that a transformed SO needs to work closely with distribution level bodies across the T&D interface, with improved visibility and information flows. We also agree that distribution level bodies need to consider whole system implications of their operational and planning decisions. We have argued in our governance framework document that a transformed SO should take overall responsibility for long-term planning of networks, as part of a holistic view taking in the evolution of storage, demand side response and generation investments at different levels, while also delivering the long-term strategy made at higher levels about the future of the gas network and heat networks. In these sense it would play the role of 'system architect' discussed by others, but with a wider framework set ultimately by the carbon budgets, and long term strategy set by government.

However, in operationalising the idea of a seamless interaction between T&D levels, we believe that it will be important to find the right balance between 'bottom up' optimisation through local platforms/markets and balancing as far as is efficient below Grid Supply Points on the one hand, and a 'top down' coordination function on the other.

We would therefore urge caution on further strengthening the already unbalanced relationship between a transformed SO and distribution level bodies, given the powers that the SO has already accumulated in analytical and planning roles mentioned above. For example, in the related recent BEIS/Ofgem CfE on a Smart Flexible Energy System[13], which the current CfE cites, one option for coordination of network planning is that the SO recommends solutions, assessing different options at both T & D level and then making recommendations to relevant parties, similar to the Network Options Assessment for transmission at the moment. DSOs (or in our approach, DSPs) would have final decision but would be required to consider the SO's assessment.

If the future energy system is to make the most of both decentralised resources and centralised coordination, we believe that it is preferable that the relationship between a transformed SO, distribution bodies and local platforms is collaborative rather than hierarchical. In practice, this issue is also related to the degree of independence and the ownership structure of the SO from the company owning transmission assets (see also below). We believe that it will be difficult to create

[12] The IGov project hosted a workshop on DSPs and the related distribution system operator (DSO) concept in May 2016. Presentations can be viewed at: http://projects.exeter.ac.uk/igov/category/events/igov-events/dsp-roundtable/

[13] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/576367/Smart_Flexibility_Energy_-_Call_for_Evidence1.pdf

the degree of trust and openness needed for effective collaboration between different levels of the system while the SO remains part of National Grid Group, even while legally and administratively separated. In fact, if the future energy system is to make maximum use of distributed flexible energy resources as a first principle, the transmission system should be seen as truly residual, and the best principle for governance of the SO at the whole system level is that it should be collectively governed by distribution and local level entities.

2.2.3 Facilitating competitive markets

We broadly agree with the role of **facilitating competitive markets** (Role 2) and the recommendation that a rethought SO should become more transparent and accessible in the way that it procures balancing services, to ensure a genuinely level playing field for new technologies and business models. However, an important issue here, which relates to the drafting of licences and SO incentives (see below) is that, as the CfE argues , new governance arrangements, such as redrafting of licence conditions, are not needed. The SO should already be tendering competitively and fairly as widely as possible, and should be avoiding non-transparent bilateral contracting (as seen for example in black start contracts in 2016), not least because this approach would be the most likely to produce efficiency in delivering balancing outcomes at least cost. If the SO is currently *not* adopting this approach, then this suggests that there is something about the combination of licencing and incentives that is not effective. This is also related to the fact that the history of trying to get consistent outcomes on system balancing costs through the incentivisation of a privately owned company has not been particularly successful.[14] These issues are discussed further below.

With respect to the role of the SO in code governance, we have argued at length that the current governance system is overly complex and opaque, not fit for the purpose of transformation, being prone to inertia, capture by incumbent interests, and not sufficiently connected with over-arching policy goals, and should be thoroughly reformed.[15] We believe that recent proposals for reform by Ofgem and the Competition and Markets Authority are insufficient because, while they make some partial moves away from the approach of self-authored regulation that underlies these problems, they do not engage with and develop alternatives to that approach in a systematic way. We propose an alternative approach in which code governance would be relocated in a dedicated body in the public sphere. We see that body as potentially sitting within or under an independent, publicly owned SO (see below). This reform would effectively bring self-authored regulation to an end.

2.2.4 Supporting competition in networks

We broadly agree with the role of **supporting competition in networks** (Role 4).

Within the IGov framework we have argued that if the CCC budgets are to be met, then there needs to be more direction within energy system operation. As mentioned above, we also argue that the responsibility for delivering change should be placed on the IISO.

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[14] Strbac, G., Pollitt, M., Kostantinidis, C. V., Moreno, R., Newbery, D. and Green, R. (2014) 'Electricity transmission arrangements in Great Britain: Time for a change?' *Energy Policy* 73, pp.298-311

[15] E.g. Lockwood, M, et al (2016) 'Innovation and the governance of energy industry codes' Paper presented at the BIEE Annual Conference, Oxford September 2016, http://projects.exeter.ac.uk/igov/wp-content/uploads/2016/09/Lockwood-et-al-Innovation-and-the-governance-of-energy-industry-codes.pdf. In October 2015, an IGov workshop was held on codes governance with key stakeholders; for further details and presentations see: http://projects.exeter.ac.uk/igov/category/events/igov-events/code-governance/, and IGov (2015) for a summary of the discussion.

We also argue in parallel that the heart of the energy system has to move to a co-ordinating body at the distribution level – which we have called a distribution service provider (DSP)[16]. This is envisaged as a joint wires and operation utility, which is regulated to encourage certain behaviours, through a mix of existing efficiency incentives, performance based regulation and incentives for transactions[17]. Within such an approach, we envisage a much greater role for competition in distribution areas – for example, being able to pick up demand side response; delivering greater heat resources; or using storage more cost effectively for the network (and system). Ultimately, the DSP would be 'netting off' supply and demand via bottom-up system operation and playing a market facilitator/coordination role. Whilst the DSP may own or contract some resources for network management and operation purposes, on the whole it is coordinating DER via platforms, and managing the interaction with the SO and the transmission network operator.

Overall, real competition in the energy system at a time of decentralising technologies and resources needs much greater granularity of value down to the distribution level than a wholesale market (or an SO which works with transmission value) is able to provide.

The IISO is a very important complementary dimension to DSPs. One cannot exist well without the other. Further information on these points are available in the IGov project, and we would welcome further questions.

2.2.5 Interfaces between the electricity and gas systems

The CfE does not address the implications of the inevitability that in future the degree of interaction between the electricity, gas, district heating and transport energy systems will become much closer. As both the government and Ofgem recognise, both transport and heat are likely to become at least partly integrated into the electricity system. At the same time, the future of the electricity system is bound up with the future use of some sustainable form of gas, and therefore the gas network, and indeed gas system operation. At the same time, it is becoming clear that we will need more heat networks in the UK. In Denmark, where district heating is widespread and involves combined heat and power, electric boilers, heat pumps and heat storage, heat and electricity are intimately intertwined. Thus, especially during a transition, the evolution of electricity, heat, transport and gas should not only be thought about together, but also the operation of the systems should fit together. The inter-relationships between electricity, gas, heat and even transport will occur at both operational and planning time scales.

Historically, with limited interaction between the electricity and natural gas systems, having a separate SO for each was perhaps logical, and elements of operation in particular could potentially continue to be handled in parallel. However, in future, we argue that there is a strong argument for a fully integrated SO across at least gas and electricity and preferably strong coordination with heat system operation. While these considerations may not be immediately relevant, thinking about the future of the electricity SO should start to take them on board now. They are of course intimately bound up with decisions about the potential future use of the national gas network, by the NIC and others. Given these considerations, one immediate concern is that the separation of the electricity SO within NGG may make interaction with the gas SO more difficult. Again, in our view, the logical

[16] As opposed to New York, which calls them Distribution System Providers, even though they provide both energy and system services.
[17] http://projects.exeter.ac.uk/igov/wp-content/uploads/2017/02/PRASEG-28-Feb-2016.pdf

course of action would be to make both SOs independent of commercial transmission network interests, and to bring them together.

2.2.6 Decarbonising the electricity system

While the CfE touches on the need to decarbonise the electricity system and ensure access for low carbon technologies to markets and networks, this is not identified as one of the roles for the SO. In our view, this is a problem. A transformed SO should ultimately have responsibility for overseeing the delivery of a secure, energy system transformation to ensure government policy goals, including that of decarbonisation, ultimately underpinned by the analysis and recommendation of the Committee on Climate Change. There should be a clear line of connection between the actions of the SO and the carbon budgets, as we have argued in the IGov Framework[18].

2.3 Question 3: Do you agree with our proposals for what licence changes are needed to support these objectives?

A broad observation is that major new expanded roles for a transformed SO, especially facilitating whole system outcomes, decarbonisation, competitive markets and competition in networks will require new metrics and measures of what is to be considered success or failure. This would be the case even for an independent not-for-profit SO, but it is especially the case for an SO within a commercial company for whom an incentive regime must be constructed (which is part of our argument for an ISO in section 3 below). In many cases the CfE argues that it wants to see changes in SO behaviour and in outcomes, but if this is to have any force then specifying and quantifying these changes will be necessary.

The tools for getting the SO to do what is desired are licence conditions and the incentive regime. Licences are supposed to spell out goals and limits on what the licensee can and cannot do. However, it is clear from some of the discussion in the CfE that licences leave considerable space for interpretation. In several places the CfE states that changes in SO behaviour would not require changes to licences, which then begs the question why these changes have not yet been made. Incentive regimes specify desired outcomes in much more detail but are open to gaming and can also lead to distortions and unintended consequences. As the role of the SO expands, with multiple and more broadly defined roles and outcomes, these problems are likely to get worse rather than better.

A type of response to this situation, implied at points in the CfE, is to try to give more direct instruction to the SO (a need to 'clarify our expectations'), and even to direct a shift in the institutional 'culture' or 'mind set' , but it does not say how this is to be done.

Another clue to this kind of approach is the brief reference to principles-based regulation (p 6), which is not followed up elsewhere in the CfE. We have concerns about principles-based regulation. We understand it is an attempt to produce behaviours that are expected of regulated companies in such a way that avoids the micro-management, gaming and perverse outcomes associated with conventional regulation. However, we are concerned that its application can also be very subjective, and it may in itself encourage a continuation of second guessing of what regulator wants – which is unhelpful.

[18] http://projects.exeter.ac.uk/igov/paper-gb-energy-governance-for-innovation-sustainability-and-affordability-2/

In the IGov project we argue for a greater role for performance-based regulation for a future SO, where desired outcomes are clear and well-defined, and where outcomes can be linked to wider policy or societal objectives (for example, for more renewables; more demand side response; greater energy efficiency of energy use etc.). Again, New York provides an interesting example where multiple indicators have been developed as the basis of their intended ramping up of performance based regulation.[19]

Overall, in our view, the task of building a new type of SO with a broader remit would be simplified firstly by removing the additional layer of complexity involved in having to incentivise a commercial entity and deal with subsequent gaming, by creating a not-for-profit independent SO; secondly by giving the SO a clear remit with a hierarchy of goals,[20] avoiding the ambiguity that can be seen, for example, in the relationship between Ofgem and the government; and thirdly by making clear the specific desired outcomes by which the performance of the SO would be judged against, and which senior managers would be incentivised to achieve.

3. A more independent SO

Question 1: Do you agree that greater separation between NG's SO functions and the rest of the group is needed?
Question 2: What are your views on the additional separation measures we are proposing?
Question 3: What are your views on our proposed approach for implementing these changes?

As the CfE notes, a significant amount of *de facto* decision making in electricity has also been delegated to NGET as the joint transmission and system operator, with a significant expansion of its role under the EMR. We agree that there are new risks arising from potential conflicts between an expanded SO role, and NGET's interests in transmission assets and its commercial activities in interconnection in the areas identified by the CfE, and that current arrangements for mitigating that risk will not be sufficient going forwards.

We understand the arguments for avoiding excessive disruption, and note that the government and NGET themselves intend to proceed with legal, commercial and administrative separation of the SO and TO roles while maintaining them within NGET. However, we believe that the case for making the SO entirely independent of a commercial company remains strong.

In particular we believe there are three distinct issues.

- First, while business separation and compliance reports may make it harder for NGET to abuse its control of the SO function to benefit its TO and interconnectors businesses, a significant information asymmetry exists between National Grid as a group of companies and the regulator as the body responsible for monitoring the arrangements intended to mitigate the risks of abuse. In other words, would Ofgem and the government be able to tell whether SO advice (for example in the NOA) was being gamed to justify excessive transmission spend? How far is Ofgem in practice able to monitor flows of information between staff in different companies within the group? In this context it is important to note that in price controls network companies have historically sought to game the setting of allowed revenue, and are typically easily able to outperform on their expected rates of return, suggesting that despite the regulator's best efforts, it cannot have a full grasp on regulated businesses.

[19] http://projects.exeter.ac.uk/igov/us-regulatory-reform-ny-utility-transformation/
[20] Within this hierarchy, we would make achieving low carbon whole system outcomes the key long term goal.

- A second, related issue is about industry and wider public *perception* of the ability of Ofgem and the government to prevent conflicts of interest. Even if the regulator is confident that it has put rigorous measures in place to prevent NGET from acting on conflicts of interest, if it cannot convince other energy sector actors and the wider public about these measures then there is the risk that a set of arrangements for major energy system transformations will lack legitimacy. In this context it is important to note that the June 2016 ECC Select Committee inquiry on low carbon network infrastructure took the view that, despite the reassurances from National Grid and Ofgem, an ISO should be created outside NGET. We also believe that many DNOs approach the SO with caution because they are wary of potential bias towards the interests of transmission. This is not a second order consideration, since trust is an essential factor for an SO required to operate effectively.

- Stepping back from the detail of conflicts of interest, a third issue is simply whether a central role in the major transformation of the electricity and wider energy system, which is essentially a societal transformation, should be played by a company that is part of a group owned by a plc. While the direction of a publicly owned but independent body may not be entirely straightforward, commercial ownership and the need for an incentive regime involves yet another layer of complexity which could be argued to be unnecessary. This is particularly the case where, as discussed above, the SO is trying not simply to balance the system in the short term but also lead a system transformation.

Therefore, while we accept that there might be practical arguments for legal, commercial and administrative separation of the SO and the TO within the National Grid Group as a short term step, we do not consider that they provide sufficient benefits to make up for their cost and the inertia in the system, at a time when there is need for rapid system change. We believe that full separation of the SO from NGG could be achieved by 2019, i.e. in the same time frame as partial separation.[21] Also, we are not convinced that full separation would be prohibitively costly, and we think that the benefits far outweigh the costs[22].

At root, if the SO is to be a significant deliver of a cost-effective energy system, then there has to be trust in it. This will not occur whilst it remains linked to NG. In any case, maintaining the current not-fit-for-purpose governance structure we have is unhelpful and wasteful both in terms of money and time. GB needs to alter its institutional basis if it is to both successfully transform its energy system in a cost-effective way. An IISO is central to that trusted and successful, customer focused transformation.

Finally, there is an argument for full separation to do with timing. There are several different consultations going on in GB about the combined TO/SO incentives and a framework for the period 2018 to 2021. The current RIIO-T1 price control period runs until 2021. It is unclear how that price control settlement will incorporate the decisions about SO separation currently being made. RIIO-T2 would also need to take these changes into account, but in general, discussions of price controls begin about two years before they start, meaning in this case that these discussions would start just as the NG-SO separation had occurred (to whatever degree). In practice, it will be difficult to fully incorporate relevant issues in the relationship between the SO and the TO, because that relationship will not have been given time to settle in and any potential problems to arise.

[21] We are not clear whether primary legislation (and therefore Parliamentary time) would be needed or not. Clause 72 of the 1989 Electricity Act gives the Treasury and/or the Secretary of State the power to acquire shares in any company privatised under the Act, which may provide one quicker route.
[22] http://projects.exeter.ac.uk/igov/new-thinking-restructuring-gbs-energy-institutions/

At the same time, it would make sense for Ofgem to align distribution price controls (DPCs) with transmission price controls (TPCs). At present RIIO-ED1 runs on until 2023, with 2019 as the half way point (and review). In some ways it therefore makes sense to run a joint set of price control reviews for transmission, distribution and the SO together, beginning discussions in 2021 for a 2023 start date. However, the problem with this in a fast-changing environment is that 2023 is a lifetime away in terms of energy technologies and their operational use.

It seems to us that this potential for the drawing out of a proper integrated regulatory approach to system development and infrastructure is another argument for full separation of the SO from NGG now. If we continue down the road of a partially separated SO from NGG, and then wait until 2023 to start a new price control, we could easily be 10 years away before we move to full separation – which as we have said above, we believe is vital for the delivery of trust to ensure that the SO can deliver what needs to be delivered for our carbon budgets.