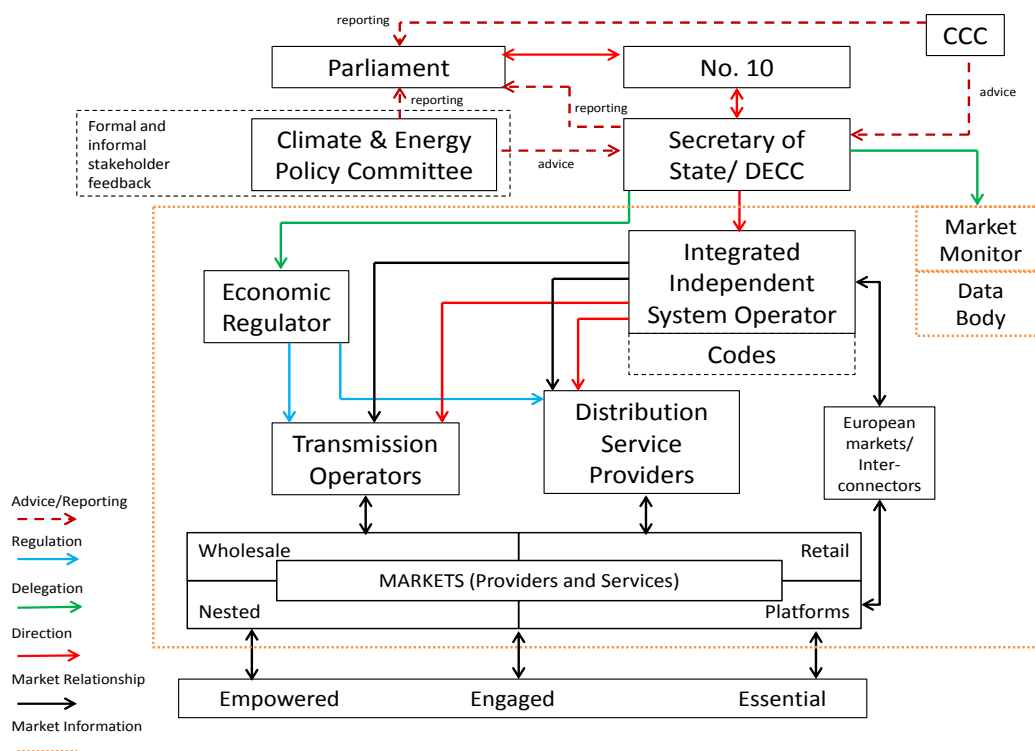


DRAFT: IGov Fit-for-Purpose Institutional Framework for the GB Energy System

1. Introduction

Energy systems around the world and in GB are undergoing fundamental and rapid change due to a wide range of different drivers, from technology through to social, environmental and businesses innovations. Much of this change is currently being experienced within the electricity sector, with new technologies and business models competing for space within our markets and networks (for example, options for demand side response (DSR), virtual power plants, storage and other ways to provide capacity and manage constraints). Nationally, the Department of Energy and Climate Change (DECC) and the Energy and Climate Change Committee (ECCC) have raised the possibility of creating an independent system operator and many distribution network operators (DNOs) are already moving towards becoming more active distribution system operators (DSOs). The recent reports from the National Infrastructure Commission (NIC) and the ECCC have highlighted the challenges and opportunities for creating a low carbon network infrastructure, and suggested that the challenges can only be met with an appropriate governance, regulatory and operational framework. Transforming to this framework is vital because of the risk that as technology races ahead, infrastructure and regulations lag behind thereby undermining (or even blocking) its use. If this continues, the lack of governance change will potentially increase costs, undermine security and threaten the low carbon transformation itself.

Figure 1: Draft IGov Fit-for-Purpose Institutional Framework for the GB Energy System¹



This briefing note sets out a new approach to governance² based on a proposed new institutional framework that IGov argues is more fit-for-purpose for the challenges and opportunities that the GB energy system faces, including the ongoing blurring of boundaries between heat, power and transport, and the new roles of consumers. The framework has been developed over the 4 years of the IGov research and this Briefing Note

¹ There is a full page version of the framework at the end of this briefing note.

² Governance is taken to mean policies, institutions, rules and incentives (ie the rules of the game).

only provides a headline summary of the institutions and their role, and a brief rational for thinking. However, we have written a number of blogs, working papers and journal articles about the governance needs of the GB energy system in general, and its constituent parts. All of this information can be accessed via the IGov [website](#); and we have included a few links to specific resources in the sections below.

2. Summary of institutions and their role

Within this new framework we have set out changes to some existing institutions as well as the creation of some small, new institutions. What we are suggesting does not constitute significant or disruptive change. More, it is a combination of what we already have and governance already in place in Denmark and New York State in the US. Below is a brief summary of the main institutions and the role we envisage they will play.

Committee on Climate Change (CCC)

Currently, the CCC provides advice to Government on the science (and state) of climate change, recommends carbon budgets, and provides analysis of ways to reduce emissions to meet the GHG budgets, as set out in the Climate Change Act, as well as reporting on progress. We think that the CCC should continue as the body which keeps track of the state of climate change and establishes the GHG budgets which have to be met, and by when. However, in respect to the energy system we think some of its functions should be passed to the CEPC.

The Climate and Energy Policy Committee (CEPC)

The Climate and Energy Policy Committee (CEPC) is a new, but small, institution that would be a parallel body to the CCC. The basic function of the CEPC would be to provide a stable political consensus on how the UK can decarbonise. It would provide an intellectual coordination of GB energy governance, including enabling a 'national conversation', involving all major political parties and social and economic constituencies, supported by expert input on technologies, behaviour change, costs etc. This would include gathering formal and informal feedback from all stakeholders operating with the energy system, including consumers and their protection. The CEPC would also continuously monitor and review the progress of policies in the energy, buildings and transport sectors and report these back to government, industry and wider stakeholders. On the basis of this process, it would make recommendations to the government of the day on how to meet their energy policy goals.

Ofgem

Ofgem should revert to being an economic regulator, having delegated responsibility from the Secretary of State/DECC to regulate those organisations responsible for transmission and distribution within the system. The wider responsibilities that it currently has in respect to social concerns and sustainability should be passed – in part to the CEPC and the IISO. As an economic regulator, Ofgem is not involved in policy decisions.

Independent Integrated System Operator (IISO)

The IISO is directed by the SoS and DECC to ensure that it both acts to facilitate the CCC carbon budgets and the recommendations from the CEPC. The IISO is a state owned system operator, and it gains independence by taking this role out of National Grid. It is also integrated with responsibility for transmission and distribution across electricity, gas and heat networks, and transport (in respect to electrification, power to gas, etc). The IISO will ultimately have responsibility for overseeing the energy system transformation to ensure policy goals for decarbonisation and system security are met, and for the energy system aspects of

affordability. As such as well as having market relationships with transmission and distribution operators it provides direction to them to enable and facilitate the transformation of the energy system.

System Codes

Industry Codes are no longer self-regulated and the current Code Administrators are bought together into one Code Body. The Codes are shaped and run to meet the decisions of the IISO and are either a separate or a subsidiary of the IISO.

Distribution Service Providers (DSPs)

DNOs are transformed into 'active' distribution service providers and are at the heart of the future energy system. They are regulated by Ofgem and directed by the IISO. They both facilitate change from the bottom up, by providing or supporting new market platforms, including a pool for energy and services that meet consumer demands; as well as facilitating change from the top down by ensuring the goals of Government and needs of the IISO are delivered.

Markets

As well as wholesale and retail markets, new markets are more easily enabled with the new framework, such as 'nested' or local markets within the distribution areas and platforms to enable companies and consumers to connect in new ways. Ultimately markets offer new ways to buy and sell energy and services within the system in a more facilitative way than is currently the case, bringing value to both the system and consumers.

Market Monitor and Data Body

With oversight of all the institutions and markets in the energy system, a new market monitor is created, that is independent of the economic regulator and other institutions. It monitors and reports what is happening within the market openly and transparently. In addition to this, a Data Body is created which treats data as a public good; it collects and provides access to available data within the system to ensure that the goals for energy policy are met. The market monitor and the Data Body will need to work closely together and are directed via the Secretary of State/DECC.

Consumers

Consumers are no longer viewed in respect to domestic, commercial, industrial, etc. Instead they are thought about in respect to how active or passive they are within the system. Ultimately the system is there to meet consumer demand for energy services and many of the changes that are occurring are within the demand side, and as such much closer to consumers. The energy system therefore needs to become more facilitative to what consumers want in respect to energy and services, enabling those that want, or are happy, to be active players in respect to demand and/or supply, whilst protecting those that are unable, or unwilling to be active.

3. The Rationale for change

Current governance does not complement the technological, business and social changes, and change that is occurring is happening despite of, rather than because of, governance. Much of these changes are either to do with decentralised technologies, on the demand side, or occurring at the distribution level from the bottom up. Whilst the whole energy system has to become 'smarter', the case for optimising the system from the customer perspective is becoming increasingly strong. However, to enable and adapt to change efficiently also requires top down guidance, not least to implement the institutional governance changes to

enable that. What is needed is a whole system approach to governance, based on legitimate direction from the top, optimisation of supply and demand from the bottom up, and then middle out facilitation through system and market institutions.

The Role of the Committee on Climate Change (CCC) and the Climate and Energy Policy Committee (CEPC)

Currently, the CCC provides advice to Government on the science (and state) of climate change and ways to reduce emissions to meet the GHG reductions set out in the Climate Change Act. The CCC has to walk a very sensitive line between setting out the GHG reduction needs, recording the extent to which various policies have worked in reducing the GHG emissions, and explaining how further reduction needs can be met. The CCC is not meant to take a view between different technological or social pathways, rather it is meant to show the various ways the GHG budgets can be met cost-effectively.

At the moment, GB lacks a formal home for transparent discussion about climate and energy policy and for reaching consensus on potential policies and decisions. For example, the extent to which this or that policy or regulatory issue appears to be working and leading to practice change, and the reasons why it is or is not doing so. The Climate and Energy Policy Committee (CEPC), a new parallel body to the CCC, is intended to provide a space – modelled on the Monetary Policy Committee – where the ‘politics’ of energy can be openly discussed before a policy gets put in place; where ideas about new technologies, social preferences, business models and so on can be introduced into the debate; and where potential ‘consensus’ policies can be agreed. Like the CCC, it would also report to Parliament, and DECC would have to report to Parliament on whether DECC accepts the CEPC advice.

We think that the CCC role should be split into two: First, the CCC should continue as the body which keeps track of the state of climate change and establishes the GHG budgets which have to be met, and by when. Second, the CEPC would be established with 5 functions: (1) it would be responsible for enabling, and collating, stakeholder feedback and views about climate and energy policies in an inclusive manner, including having a grasp of what new technologies and social preferences mean for energy policy and system operation; (2) it would continuously monitor and review the progress of policies in the energy, buildings and transport sectors – including ensuring the social (including customer protection), environment and security goals of Government are met in practice - and report these back to government, industry and wider stakeholders; (3) it would provide intellectual co-ordination across Government and Ministries to deliver necessary climate and energy policies and highlight gaps; (4) it would enable a ‘national conversation’, involving all major political parties and social and economic constituencies, supported by expert input on technologies, behaviour change, costs etc. And (5), taking these 4 functions into account - it would give advice to DECC and the government of the day on how to meet their energy policy goals (taken to include governance issues).

An example of this might be, with respect to fuel poverty, that the CEPC would provide intellectual coordination across Government to ensure building regulations for housing; to ensure energy efficiency policies, and value for providers; to enable targeting of vulnerable groups / fuel poor; and to protect customers at the edge of mainstream services, such as via a default service of a rising block tariff.

IGov argues that the CCC recommendations need to be linked more into GB governance. For example, Codes are the basis of all transactions within the energy system. At the moment, there is no requirement on the Code Administrators to ensure that they enable the meeting of the CCC recommendations. IGov envisages that the IISO (as explained in more detail below) is directed to ensure an energy system capable of meeting the CCC budgets, and that would cascade down to the TO, the DSPs, and the Codes (see below for details).

For further discussion on these topics see:

- [Putting the environment back into GB energy policy](#)
- [First-past-the-post Politics is a Major Barrier in GB to a Legitimate, Long term Energy Policy Framework](#)
- [Restructuring GB's Energy Institutions – why it is worth the cost](#)

The Role of the Secretary of State (SoS), DECC and Ofgem

The current energy policy paradigm is that Government takes high level policy decisions, but where possible leaves the delivery of energy goods, services and some policies to the market. The argument is that it beneficially 'de-politicises' energy policy decision-making and implementation through an 'Independent' energy regulator which works to certain Duties, and which receives 'guidance' from Government every 5 or so years³. The energy regulator is responsible for overseeing market and network regulation, and the energy system is expected to operate cost effectively. Ofgem was initially set up as an economic regulator but has since taken on other social and environmental responsibilities. This means that the role of the regulator has expanded over time, and now de facto includes decisions on trade-offs between government goals and policies.

New technologies are opening up multiple new pathways to meet Government climate change policies. The choice of one rather than another technological pathway has large distributional impacts on different sections of society (including the industry and supply chains), its total costs and its speed of transformation. Technology pathways are heavily influenced by policy support (for example, of nuclear power and/or renewable energy through RO/CFDs etc) undertaken by Government. But Ofgem's actions matter through the surrounding regulation (network charging, codes, balancing market design, decision on distribution system operators versus distribution service providers etc). Through their executive authority they are now taking a multiplicity of de facto policy choices which themselves have major impacts on, for example, the relationship between the TO and DNOs / DSOs / DSPs; the centralised versus decentralised nature of the energy system; the availability of local markets; the involvement of customers.

The context within which the regulator operates and makes decisions has changed dramatically since they were set up, and because of this their role has to be rethought (see below). The IGov argument is that many decisions that should be in the policy sphere, ultimately decided on by the Secretary of State (SoS), have drifted by default into the regulatory sphere. We think this should be ended, and confronted, by scaling Ofgem back to be a minimal economic regulator and by re-assigning the social, environmental and security responsibilities elsewhere.

IGov argues that energy policy decisions are deeply political, and more transparency and legitimacy has to be brought back into the GB decision-making and institutional framework. It should be the SoS and DECC which has capacity to take all policy decisions, and be responsible for them. Moreover, these policies should together enable the CCC recommendations to be met.

A legitimate energy policy process is required which can be nimble enough to take account of the rapidly changing energy system and incorporate a consensus views. IGov argues that a combination of more capacity in DECC to take policy decisions; the advice from both the CEPC and the CCC; a re-structuring of the hierarchy of decision-making in the energy system so that an economic regulator and a state owned system

³ Currently under discussion

operator are on the same level; and the SoS directing the IISO to meet the CCC budget requirements is a preferable process to ensuring that Government goals are met to the one we currently have.

For further discussion on this topic see:

- [The odd couple: Will a new Strategy and Policy Statement help sort out the relationship between government and Ofgem?](#)
- [Submission to DECC Consultation on the draft Strategy and Policy Statement](#)
- [Restructuring GB's Energy Institutions – why it is worth the cost](#)
- [Energy Depoliticisation in the UK: Destroying Political Capacity](#)

Returning Ofgem to being an Economic Regulator

IGov argues that Ofgem should return to being an economic regulator only. Its environmental Duties should effectively be passed to the state-owned IISO, which has responsibility for system security and transformation to a sustainable energy system to meet the CCC and CEPC recommendations. Because the IISO would have more technical capacity than the economic regulator, it should be more able to drive technical discussions with the TO and DSPs. We argue that the economic regulator is the wrong institution to take responsibility for social concerns (primarily affordability and fuel poverty) with respect to the energy system (see below).

The SoS would have hierarchy over both the economic regulator, and the IISO. However, the economic regulator and the IISO are on the same level of hierarchy – this is a resetting of institutional importance from where economics / competition / the market has hierarchy to one where the latter and a strategic framework to meet the CCC recommendations are on an equal footing. This is because IGov argues that we need more strategic direction in relation to meeting Government goals. Once that strategic framework is established, then markets can work. This is a more balanced approach between markets and regulation, but it is not an anti-market view. On the contrary, IGov sees markets establishing more values in the IGov Framework than currently.

In the IGov framework, the CCC sets out the science, the CEPC advises on what needs to be done; the SoS decides on the policy and directs the IISO to deliver, and the Regulator to regulate. Once the IISO has decided what has to be done by when, and there is agreement with the TO and the DSPs, then the economic regulator, regulates that agreement. The economic regulator is not involved in policy decisions.

For further discussion on this topic see:

- [Public Value Energy Governance: establishing an institutional framework which better fits a sustainable, secure and affordable energy system](#)
- [Progressive Regulation – What Future For OFGEM?](#)
- [Change and Inertia in the UK Energy System – getting our institutions and governance right](#)

The Integrated and Independent System Operator

IGov has argued that the current system of joint system operator and transmission operator within National Grid encompasses too many conflicts of interest for NG, at a time of fast changing and decentralising energy technologies. As such, we recommend that the system operator portion of National grid is renationalised to become a state owned independent system operator. In addition to this, we think it should also be integrated, looking across electricity, heat and transport. This reflects the fact that energy is a whole system: making changes in one place, will lead to changes in another part of the system and it therefore has to be integrated in order to run the system effectively.

We place the responsibility for the transformation of the energy system from its current state to one which meets the CCC objectives and for maintaining security on the IISO. This system operator is responsible for both transmission and distribution and would be integrated between the electricity (including the electric vehicle structure), gas and heat networks. Markets also have to provide value to complement this smart infrastructure operation and development.

IGov is arguing that the energy system becomes customer-focused and optimised from the bottom up. The IISO therefore will be responding to distribution service providers (see below) but the IISO has ultimate responsibility for the system. The state-owned IISO which links markets and networks; and oversees both transmission and distribution networks is the best way to enable that.

For further discussion on this topic see:

- [National Infrastructure Commission call for Evidence - submission from Energy Policy Group](#)
- [Not just independent but also integrated – the future for energy system operation](#)

The Codes

The current code governance system is not fit for purpose being prone to inertia, capture by incumbent interests, overly complex and opaque and not sufficiently connected with over-arching policy goals. That need to change in order that they facilitate change, IGov held a workshop on this topic and the papers can be viewed below.. The key IGov policy recommendation is that Codes stop being self-regulating, and become a technical aspect of the energy system. Codes should be changed to fit with the IISO decisions, as and when needed. The Code Administrators should come together within one Code Body. This can either be separate or a subsidiary of the IISO but in both cases, the Code Body works to the IISO.

For further discussion on this topic see:

- [Innovation and energy industry codes in Great Britain](#)
- [IGov Codes Governance Workshop](#)
- [Codes Governance and Reform Discussion Paper](#)

Distribution Service Providers (DSP)

IGov has also held a DSO/DSP workshop, and the papers can be viewed in the link below. IGov argues that the distribution network companies should transform into being ‘active’ distribution service providers (DSPs). This could occur if their regulation changed from being related to units supplied and the value of their asset base to where a larger proportion of their revenue is related to performance based regulation outputs (PBR) and the extent to which they facilitate market transactions. The New York Reforming the Energy Vision (NY REV) sees the move to DSPs taking about a decade. At that point they are envisaged as being the ‘heart’ of the electricity system with new values (or payments) available to new entrants for providing new services (both system and energy) to customers. We envisage DSPs with market platforms, including a pool for energy and services.

The IGov framework envisages that the IISO will have an overview of the type of system needed to meet the CCC GHG reductions. The DSP will be following various PBR outputs (complementary to Government policies) and customer wishes. The IISO will gauge whether this is sufficient for meeting infrastructure changes necessary to meet CCC recommendations, or whether they have to make an agreement with the TO/DSPs to speed up change on the DSP network. The PBR outputs can be ratcheted up if necessary and Government policies, for example, to encourage more energy efficient buildings (and thereby lower energy

demand) could become stronger, and should be complementary. The economic regulator then regulates these agreements. This is an ongoing and iterative process.

The boundary between the IISO and DSP is complex. The IISO ultimately has hierarchy. The DSP should become more active by meeting its PBRs, following customer demands and facilitating markets. We envisage that there is a place for both 'smart' top-down and bottom-up optimisation of the energy system. However, ultimately, for those times when a choice has to be made between the 2 levels for system operation reasons, bottom-up optimisation would be supported because the system should be customer-focused and aims to be energy efficient – which includes capturing demand side possibilities which are increasingly at the local level.

IGov argues that a move to a DSP system seems to be the most logical way to both direct the energy system to meet Government goals whilst at the same time encouraging markets.

For further discussion on this topic see:

- [What, and how, the New York utilities are expected to transform to over the next decade – the New York REV's Ratemaking May 2016 Order](#)
- [IGov Roundtable on Distribution Service Providers](#)
- [More flexible, more renewable – our evolving energy systems are changing fast](#)

Markets

GB currently has a bilateral wholesale market (the British Electricity Transmission and Trading Arrangements) with several market platforms linked to it. As we said above, we envisage a DSP with market platforms, including a pool for energy and services. 'Nested' or local markets within the distribution areas would have the choice to either sell into the DSP pool (for either supply or demand products) or directly into the wholesale market. Customers – of different types – would buy and sell into any of those markets they chose to. Larger producers and customers may continue as they are buying and selling via the wholesale market. IGov would argue that new entrants, technologies, social preferences and so on are opening up new services and wishes and values in markets should be available for them.

For further discussion on this topic see:

- [Future energy markets and networks in the UK and European Union](#)
- [We must not recreate the wrong market model](#)

Market Monitor and Data Body

The recent CMA inquiry has highlighted the inadequacy of GB market monitoring, and IGov argues that a transparent market monitor should be created, independent of the economic regulator. In addition, access to available data is becoming increasingly important to system operation and energy economics. IGov takes the view, as in Denmark, that data is a public good and open and transparent access to it will ultimately benefit society more than trying to marketise it at its source. The market monitor and the Data Body will need to work closely together.

For further discussion on this topic see:

- [For an overview of our submissions and thinking on the CMA Inquiry](#)

Customers / Consumers

IGov takes the view that consumers should no longer be viewed in terms of their sector, i.e. domestic, industrial, commercial and so on. In line with what is happening in other countries it makes more sense to view them in terms of how able or willing they are to engage with the system. This is because available technology, new businesses models and change in social practices allows each consumer to be treated individually, from those that are very active i.e. prosumers through to those that are unable or unwilling to act. Consumers can be thought of on a continuum from ‘empowered- engaged-essential’. Moreover, we argue that the energy system should be customer-focused, meaning that it should be run in such a way that it fulfils customer wishes – rather than customers having to fit into company and regulator wishes – but also provides a better service in terms of system operation cost.

Customers will make or break the move to a smarter and sustainable system. As a result, efforts to connect them to their energy use are essential – and this is far more complicated than viewing this in relation to the numbers which switch. We support the introduction of a Social Licence for all energy institutions and actors to ensure that they build and offer legitimacy, credibility and trust. We support default service for fuel poor, vulnerable or disengaged customers provided it has a rising block tariff. We do not support a default service based on price. In addition, a change of mind set has to occur so that companies and the system views customers as a source of system services, for which the customers are paid and which potentially negates the need for additional infrastructure capacity elsewhere. This we expect to occur via the DSP markets. Moreover, we support ‘conversations’ about energy with customers. Funds have to be available for this and should be bid for by those which wish to undertake the conversations. We imagine Citizen’s Advice would have control over those funds which could be bid for by local authorities, small communities or companies. We also think DSPs should be enabling ‘outreach’, and this would be incentivised via their PBRs.

For further discussion on this topic see:

- [Rethinking the role of consumers in our evolving energy system](#)
- [Switched Off – is switching really a measure of consumer engagement?](#)
- [Forget the ‘trilemma’ – tackling the fourth challenge of inertia is the key to unlocking a sustainable energy future](#)

