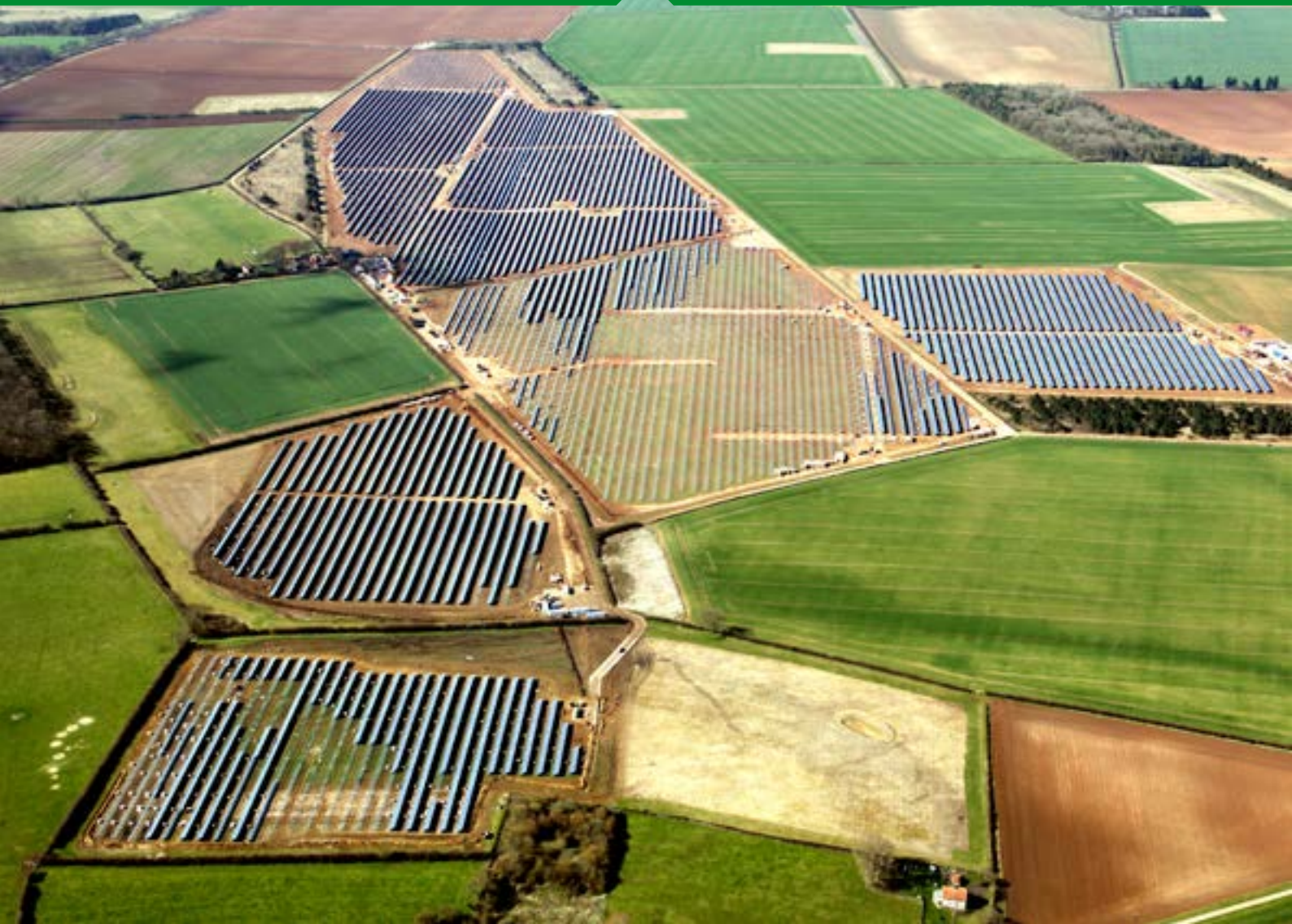
ELEXON

REFORMING THE SYSTEM OPERATOR ROLES AND THE CODE ARRANGEMENTS



Evolution of the System Operator roles

Elexon believes that the existing reviews of electricity System Operator (SO) governance and of energy codes could be combined, and sets out three potential models for reforming the SO roles and the codes in tandem. These include a model where the SO works with a separate, single Market Operator, which would manage all the energy code arrangements.

The gas and electricity SOs play a key role by balancing the energy system and planning for its future development.

The electricity SO role in particular has evolved in recent years, and as the sector works to meet the net zero target it will develop further. The gas SO role will also evolve as Britain pivots away from natural gas. In December 2020 the Government published its Energy White Paper, saying that it would consult in 2021 on energy code governance and review the long-term role and organisational structure for the Electricity System Operator (ESO). Ofgem has reviewed SO governance arrangements and in January 2021 it published its findings. Ofgem has recommended to Government that a new independent body is set up to carry out the electricity SO role. This body would be completely separate from National Grid.

Ofgem also believes that certain gas network planning functions that are carried out by National Grid Gas could be reassigned to this new independent body. However, Ofgem stated that this needs to be considered further alongside the future development of the gas system.

The Clean Energy Package (CEP) legislation to increase energy efficiency and reduce carbon emissions came into effect in Britain from January 2021. The CEP is EU legislation and regardless of Britain's Free Trade Agreement with the EU, the Government has already committed to transpose it into GB law. The CEP will have a significant impact on the energy sector, and we explain some of the effects in this Policy View.

As the code manager of the Balancing and Settlement Code (BSC), Elexon plays a key role in the electricity market by managing the wholesale electricity arrangements and Settlement. We administer the rules and provide the systems and services that give effect to those rules. We are setting out options for how the SO roles could be reformed together with potential solutions to achieve consolidation and simplification of the energy codes.

Why do the SO roles and energy code arrangements need to be reformed together?

The scale of change needed across the energy sector and the wider economy to achieve net zero is vast. The transport, heating and energy sectors will all need to decarbonise together, so we need arrangements that support and promote 'whole system' thinking.

As Ofgem and the Government are looking into the SO governance arrangements, and there is an ongoing Ofgem/BEIS review of the energy codes, it is a golden opportunity to reform these arrangements holistically so that they mutually support the net zero challenge.

The energy system is rapidly moving towards a decentralised model. The implementation of the CEP and the emerging Distribution System Operator (DSO) role will only increase the pace of change. The CEP sets out the tasks and responsibilities of DSOs in law. It sets an expectation that DSOs will play a much more proactive role in managing supply and demand. As the DSOs assume some responsibility for balancing their networks, the ESO's role could in future focus entirely on balancing the system at a national level.

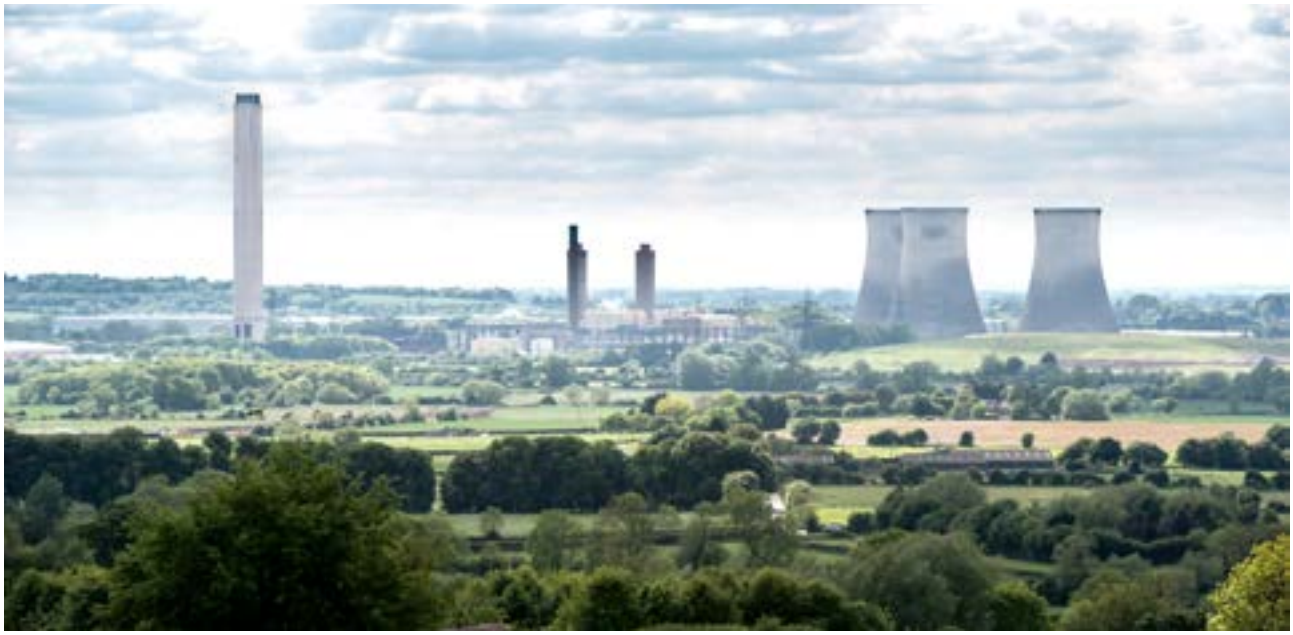
The energy codes provide the commercial arrangements for companies operating in the energy sector. They need to be simpler to navigate for companies and the rules themselves need to be easier to change so that they offer swift support for innovation, new products and services.

Currently, major rule changes can take years to complete for some of the codes, and having 11 disparate codes, managed by six different organisations does not lend itself to making fast, widespread, cross-fuel changes to support net zero. In our May 2019 Policy View on the energy codes we provide more detail on the issues with the current arrangements.

The need to meet wider challenges necessitates reform of the SO and code arrangements in tandem. The sources of gas that we use, and the way we use gas networks could change radically as we head towards net zero. Conventional sources of gas could be steadily replaced with hydrogen, biogas, and more Liquefied Natural Gas (LNG).

There will be increased interaction between the gas, electricity and transport sectors in the future. We believe that reforming the SO roles and code arrangements are an important consideration to support this. The SO roles could be combined, so that the whole system approach is 'baked into' the way the energy system is managed.

The roll out of electric vehicles and the corresponding impact on demand will need to be carefully managed by DSOs and the ESO. Optimising the charging of millions of electric vehicles and the 'top up' or storage services they offer to the networks is one of the main challenges this poses.



What is the System Operator role in gas and electricity?

The SO roles are carried out by National Grid Electricity System Operator (National Grid ESO) and National Grid Gas. They include negotiating with market participants to increase supply, or reduce demand when necessary. SO costs are regulated by Ofgem through incentive frameworks, and the costs are passed through to consumers.

In this policy view we are primarily concerned with the electricity SO role, which also covers a wider range of responsibilities.

In April 2019 a new, legally separate electricity SO (National Grid ESO) was established within the National Grid Group. Ofgem made clear that the electricity SO arrangements would be kept under review following this decision.

The ESO administers three of the 11 energy codes:

01
The Connection and Use of System Code (rules governing connection to, and use of, the high voltage system)

02
The Grid Code (technical requirements for using the high voltage system)

03
The System Operator Transmission Owner Code, which defines the relationship between Britain's three transmission system owners and the ESO

The ESO has several other responsibilities and roles in relation to market rules and planning for the future development of the system:

01
It is the administrator for the Security and Quality of Supply Standards, which govern the planning and operation of the high voltage system

02
It is the Electricity Market Reform delivery body and has transmission system operator responsibilities for implementing European network codes and regulations

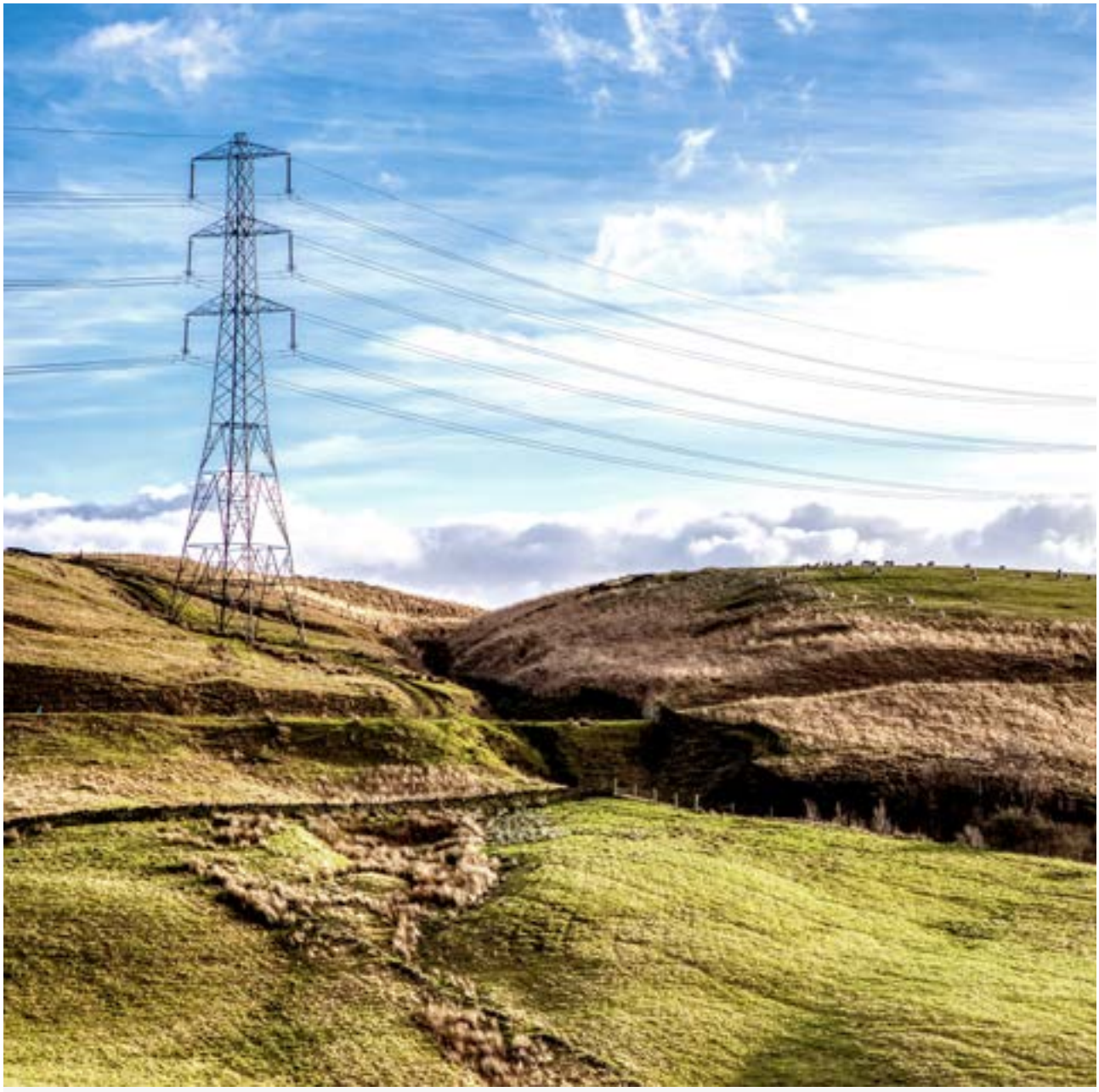
03
It produces a Networks Options Assessment and the Future Energy Scenarios analysis

Three options we have identified for reforming SO governance and energy code arrangements

We have set out three potential routes for reforming the SO roles and the codes in tandem. We have not quantified the costs of changes to the code and SO arrangements under the three routes.

The change could be introduced as a 'big bang' approach, as this has been used for energy reforms in the past (for example, when the New Electricity Trading Arrangements were introduced in 2001).

Of the three potential routes that we have put forward for reforming the code arrangements and the SO governance framework, neither pre-judges the next steps following the Energy White Paper. In all three, we assume that the electricity SO role would be separate from DSO roles (as a separate DSO role has been envisaged in the CEP).



Three options we have identified for reforming SO governance and energy code arrangements

(Continued)

Integration of the SO roles, but no reforms to code governance arrangements

- Under Route 1 the current SO roles for gas and electricity would be merged into a 'whole system operator' to support moves to a more integrated whole system approach. The merger could also result in greater cost efficiencies.
- There would be no major changes to the structure of gas and electricity code administrators, or the number of codes. However, some of the codes would need to be amended in the future to support the DSOs in their new role.

System Operator working with a single Market Operator

- Under Route 2, the merger of existing gas and electricity SO roles would be completed (as above) however the codes and code administrators would be consolidated into a Market Operator (MO) – a single body managing the codes and changes to code rules across the energy, heat and possibly hydrogen sectors. The MO would not be involved in the 'real time' operation of the market where Generators and Suppliers have to have their supply and demand matched.
- The MO would be similar to the 'integrated rule making body' put forward by Ofgem and BEIS in their consultation on reform options for the codes review. The existing code administrators could be brought together to deliver the role under a stakeholder-owned model, accountable to Ofgem. The role could also be performed by a commercial entity.

A decision would need to be made on the funding model for the MO. This includes deciding if it should be price controlled, commercial or a 'not for profit' body. Whether it should be a licenced entity over which Ofgem has regulatory oversight, and intervention powers should also be decided. Pooling of expertise that exists today in the various code bodies could be the nucleus of a design authority or strategic authority, capable of developing the code and market arrangements supporting innovation to achieve net zero.

Single SO and Market Operator role combined

- The most radical option would be combining the integrated 'whole system operator' (for both the gas and electricity) with the MO role. This means combining system operation and management of all codes and central services into one body for gas, electricity, heat and possibly hydrogen.
- Historically, in most European countries a single MO/SO model exists (albeit in a very different market structure to that of GB). It is either a nationalised entity, or the government exerts significant control over it. The SO/MO works closely with a market regulator in some European countries.

However we note that models where Settlement is carried out by a third party market operator that is independent of the transmission system operator (the current practice in Britain) are becoming increasingly popular, with Scandinavia and other European countries adopting this model.

Our views on the options

Of the three routes we have put forward our proposed solution is Route 2, as we believe it represents an ambitious, but achievable set of reforms which streamline central services and ensure a more integrated approach to system and market operation.

The key advantages of Route 2 are:

1. Faster, more co-ordinated changes to market rules in gas and electricity than is currently possible in many cases, aiding in delivery of net zero
2. Greater ability to make quicker and more widespread changes to commercial agreements
3. A simpler set of arrangements for energy companies to manage and engage with
4. Allows market operation to remain independent from system operation with the option of the market operator being an independent stakeholder-owned body
5. Consolidation and simplification of energy codes so that they better serve existing and new market participants

Route 1 could achieve beneficial integration for the gas and electricity SO roles. However as it leaves the code arrangements unchanged, we believe that this route would miss the opportunity to deliver benefits from reforming the energy market governance landscape.

Route 3 achieves both code consolidation and integration of the SO roles by condensing them into a single body. Delivering Route 2 would be a major challenge in itself, without adding complexity and duration to the scale of work if Route 3 were chosen. Ultimately we believe that introducing Route 3 would be a vast amount of work and would potentially be unwieldy, with little additional benefit compared with Route 2.

Elexon also believes that independence between system and market operation needs to be preserved, because if the two roles are combined in one body, it risks conflicts of interest between managing the system and setting the rules that govern it.

Next Steps

Elexon wishes to play a part in helping the Government and Ofgem decide on reforms for the governance arrangements. We have been sharing our views on how consolidation and simplification of the codes could be achieved, and feeding industry views back to the Government and Ofgem. We are taking a similar step here, with this latest Policy View. We will talk to industry parties about the options and share the findings with Government and Ofgem in the lead up to the Government's consultation later this year on 'institutional arrangements' for governing the energy system.

Overall, we want to see the right governance arrangements in place so that they are future proof, and can aid in the delivery of net zero.

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