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BRIEFING PAPER JULY 2015

CMA ENERGY MARKET INVESTIGATION

E3G[1] RESPONSE TO INITIAL FINDINGS AND PROPOSED REMEDIES

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The Competition and Markets Authority (CMA) investigation into competition in the GB energy market raises important questions related to the broader energy policy landscape. Whilst the concerns expressed about the lack of clarity and transparency in some aspects of the Government's decision process are welcome, many of the more detailed recommendations are rooted in a backward looking perspective of the energy system and fail to recognise some of the key technological and market developments. This submission seeks to point out how the issues raised might be viewed in light of changing market circumstances and identifies a number of issues that are worthy of further consideration.

The CMA is right to raise concerns about the transparency of governance processes related to decisions about future energy mix and the allocation of subsidy payments. However, the proposed remedies appear constrained by the current institutional structure and fail to consider the underlying rationale for policy interventions or address the need for coherence across the various levels of industry governance. E3G recommends that the CMA considers proposing the creation of an 'Energy and Climate Risk Observatory', ideally at the European level, to provide credible independent advise on the need for policy intervention, and the formation of an Independent Market and System Operator to bring the UK into line with international best practice in market governance.

Much of the CMA analysis addresses competition in retail markets and rightly highlights concerns over the lack of consumer engagement. However, the proposed solution of encouraging consumers to make the effort to engage whilst protecting those consumers who do not engage is inconsistent and unsustainable. The migration from analogue to digital technology opens up the prospect that consumers, and their ability to adjust consumption patterns, will become a valuable system resource. Encouraging engagement in this more

[1] E3G is an independent, non-profit European organisation operating in the public interest to accelerate the global transition to sustainable development. For more information see **www.e3g.org.uk**

challenging situation will become increasingly important for the delivery of broader policy objectives. A better approach to the engagement challenge would be to explore solutions that make it easier for consumers to engage. There are strong arguments for the creation of default regional suppliers, regulated to minimise combined energy purchase and local network costs. The CMA should consider how stepping back from a narrow focus on competition in retail energy markets could stimulate the creation and growth of competition in markets for new technologies that will lead to better outcomes for consumers in the future. It should also consider other routes to driving engagement in the provision of demand response services such as obligations placed on licensed suppliers and network operators.

Finally, the core challenge for market designers around the world is to efficiently integrate increasing volumes of variable renewable energy onto power systems and this challenge is equally relevant in the UK. The CMA's comments related to market design should therefore be framed in this context. In particular, the proposal to alter the treatment of transmission losses in the settlement process should be checked for consistency with the need to integrate European markets and broaden balancing zones.

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Evolving market context

The CMA investigation into the energy market is particularly challenging since the market operates within a policy framework designed to maximise benefits for society as a whole. In other words, competition cannot be viewed as an end in itself but one of a number of potential 'policy delivery mechanisms'. The CMA investigation therefore needs to be founded on a clear understanding of the role that competition, and markets more generally, are expected to play. Unfortunately, establishing this baseline position is not as easy as it might seem.

Whilst, the initial liberalisation process in the 1980s and 1990s was based on the broadly accepted vision to minimise the role of regulation where practicable, the market context has now moved on, raising key questions about the boundary between competition and regulation. In particular, three developments have fundamental implications (see Appendix 1 for a more complete explanation):

- The need to decarbonise the energy system over timescales that are short in comparison with traditional asset replacement cycles.
- The rapid increase in the proportion of generation connecting at the distribution level, much of it variable is nature. It is possible that this trend might accelerate and involve a significant 'defection' of load from the power grid.
- The migration from analogue to digital technology raising the prospect of a demand side of the market that is far more active than was previously considered possible.

The migration from centralised to de-centralised generation, and the pressure this creates to improve 'co-optimisation' of network and commodity investment, does not in itself challenge the initial principles underlying liberalisation but merely suggest that new pragmatic approaches are required to deliver overall market efficiency. However, the need to drive low carbon transformation and the development of the demand side of the market raise more fundamental questions about the overall direction of travel and the appropriate vision for a low carbon and two-sided energy market.

The low carbon transformation requires some degree of central management of investment and, ideally, there should be clarity over the nature and governance of the processes involved. This must include consensus over whether these processes represent an enduring component of a low carbon energy system or they are merely a transitional requirement.

The opportunities presented by digital technologies transform consumers into potentially valuable system resources with the combined capability to dramatically reduce overall energy system costs. This raises the stakes associated with consumer engagement in the energy market and it may no longer be sufficient to 'leave it to the market' to develop the products that deliver outcomes that are best for individual consumers and the system as a whole.

Unfortunately, despite the clear shift in the realities of the market and the evident discomfort of investors trying to evaluate the policy risk landscape, no new narrative has emerged as to

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the direction of travel for regulation and the role of competitive markets. It is not for the CMA to opine on these issues since they are matters of public policy. However, it is important that the findings of the investigation recognise and reflect this imperfect and evolving situation and provide clear evidence to help the policy making process going forward.

Therefore, apart from identifying those areas where competitive processes are not currently working effectively, the CMA is right to highlight where imperfections in the governance processes are leading directly to resource inefficiencies and increases in consumer costs. However, it is important that any potential remedies proposed are evaluated in terms of broader energy policy objectives rather than simply looking at short run impacts on competition. This should include the recognition that policy objectives must be delivered in an evolving and uncertain future and explore the role that regulation might play in delivering better outcomes for consumers.

This submission focuses in particular on those issues related to high level industry governance and the specific challenge of driving engagement in the retail energy markets. It also includes some observations on market design.

Market governance

Energy market governance operates at three levels: EU policy, national policy and market and system operation. Each of these levels should be coherent and adhere to the principles of good governance – in particular transparency and accountability. The CMA provisional findings focus on the second of these (national policy and its implementation by DECC and Ofgem) and, to some degree, on the third. It is important that any recommendations relating to market governance highlight the linkages between these three levels and ensure consistency in the decision making process.

It is interesting that the CMA fails to raise any concern about the lack of progress towards a truly integrated single European energy market since analysis has repeatedly shown that the resource efficiencies available from European integration are large compared to anything that can be achieved at a purely national level[2]. Indeed, one of the core issues currently under discussion by EU Member State governments under the Energy Union banner relates to governance and how national level policy decisions can work together to improve delivery of policy outcomes for EU citizens as a whole.

An effective energy policy ensures ongoing delivery of the three policy objectives: security of supply, decarbonisation and affordability. This, in turn, demands that the delivery of these objectives does not depend on particular circumstances arising and is, instead, robust towards the key future uncertainties. The requirement for Government intervention therefore arises from the need to manage future risks to policy delivery in the circumstances where the market is not effective in providing the necessary insurance. In particular, there is little evidence that the market can provide the diversity of resources that insulates the system from major systemic failures (e.g. supply interruptions arising from geopolitical or industrial disputes, or

[2] See for example **http://europa.eu/rapid/press-release_SPEECH-15-4596_en.htm**

major technology failures). These issues are particularly relevant to system decarbonisation which requires the rapid deployment of technologies that are not mature. Energy policy must therefore establish a number of credible pathways to decarbonisation that ensures policy delivery is not dependent on big technology 'bets' (e.g. the ability to rapidly deploy large volumes of nuclear energy or carbon capture and storage) and promotes the opportunities afforded by new emerging technologies[3].

Critically, the policy decision must emerge from an objective assessment of future market risk rather than a subjective perspective on individual technologies. Even more important is the need to separate issues of long term national interest from short term political opportunism. This demands that the underlying policy decisions must be transparent and evidence based. The CMA was, therefore, right to point out some of the deficiencies in the current processes and to recommend more transparency in how the decisions are made and how responsibilities are shared between institutions.

However, the remedies proposed do not consider the need for coherence with governance at the higher (EU) level and lower (market and system operation) level. As national energy markets become more interlinked it will become increasingly expensive to manage future risks through domestic policies alone. Moreover, the actions in one Member State can create significant risks for its neighbours. E3G has, therefore, previously suggested the idea of an independent 'EU Energy and Climate Risk Observatory' as an important institutional development that can help drive forward the Energy Union agenda[4].

This concept involves an independent and authoritative voice that can undertake analysis of the future energy system and be responsible for identifying the systemic risks that could affect delivery of policy objectives[5]. The Observatory would also be required to propose possible policy remedies that could be adopted by the EU as a whole or individual Member States. There is no reason why this concept could not be pursued in an individual Member State if there was no agreement to establish a pan-European institution and it would be a major step forward in the UK situation. It would shine a light on those policy actions that reduce the risk of future policy delivery failure and those which actually increase the risk. It would also enable a transparent debate about which risks society is prepared to insure against through policy interventions and which it is not.

The fundamental risk management policy should rightfully be decided by a democratically elected Government. The role of other institutions, such as Ofgem, should be to help ensure these risks are managed in the most cost-effective way possible and statutory objectives should be drafted to this effect[6]. It should be clear which institution is responsible for

[3] Note that the rationale for intervening to deliver resource adequacy at system peak through the introduction of a capacity mechanism is much less obvious. There is strong evidence from markets around the world that accurate scarcity pricing in short term markets and the development of demand response is a far more effective and much cheaper way to deliver policy objectives.

[4] **http://e3g.org/news/media-room/improving-policy-making-to-manage-complexity**

[5] EU-level energy security assessments are currently undertaken for a limited range of potential shocks (e.g. stress-tests for adequacy of gas storage). However, at present there is no pan-EU body currently in charge of monitoring systemic risks on an on-going basis. This has worrying parallels to the economic crisis, where individually-rational decisions by different actors made the system as a whole collectively vulnerable.

[6] This could include a requirement to consider competitive solutions but it should not establish any presumption that this is the appropriate way forward.

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designing and implementing the relevant intervention and, therefore, it is not apparent why there would be any need for a 'formal mechanism' through which DECC and Ofgem can resolve disagreements over policy decision-making.

Establishing coherence between the fundamental policy decision and the subsequent policy delivery processes is critical. For example, Ofgem currently has no basis to authorise network investment that helps reduce the costs of potential future technology pathways and the absence of such 'anticipatory' investment is only likely to increase the need for future direct subsidy.

It is not possible to discuss market governance without recognising the labyrinthine nature of the processes involved in market and system operation and the CMA identifies a number of concerns related to this issue. Rather than trying to tackle these issues on an individual basis from within the current structural context, it is worth stepping back and looking at the situation as a whole. The independent system and market operator (ISO) has become the governance model of choice in all liberalised energy markets outside Europe. Such a body can be given clear responsibility to design markets and operate the system in line with statutory objectives. It would dramatically reduce the burden on Ofgem, remove the worrying conflicts of interest embedded within the current Transmission System Operator business model and establish an institutional structure that would more readily support efficient regional integration of markets.

Effective market governance is critical and the CMA has identified a number of concerns related to this issue. However, the remedies proposed suggest a 'sticking plaster and cellotape' approach that is constrained by current institutional structures. More fundamental reforms are required with a view to improving transparency over the underlying policy decisions and ensuring clear accountability for policy delivery. The CMA should therefore consider the proposals for an Energy and Climate Risk Observatory and an Independent Market and System Operator.

Retail Markets

Much of the effort of the CMA investigation has been focused on exploring the nature of retail energy markets and it has rightly identified the lack of consumer engagement, and the potential this creates for energy companies to extract excess profits, as an area of concern. E3G has recently written a briefing note that explores this issue against the background of technology change[7]. The key conclusion of this analysis is that promoting consumer engagement should now be a core policy priority. This is because consumers have the potential to become a valuable system resource that can offset many of the costs of policy delivery. However, realising this value requires that consumers choose to engage with the market by altering consumption patterns in return for cheaper energy. Unfortunately, the reductions in energy costs are likely to be rather smaller than those currently available to consumers on standard variable tariffs through switching supplier.

[7] **http://e3g.org/news/media-room/switch-or-transform-the-future-of-the-retail-energy-market01**

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This represents a major challenge. Currently, a large proportion of consumers are not prepared to devote the effort to switch supplier when the reduction in costs could be significant. The CMA has proposed a series of remedies aimed at addressing this situation. However, in the future, the potential improvements in resource efficiency that could be delivered by engaged consumers adjusting consumption patterns will be much greater than could possibly be realised through the switching process. It seems likely that the problem of disengaged consumers will be considerably greater when they must make some upfront investments and/or change behaviour in return for cost reductions that are less than those currently available through switching.

The CMA remedies are based on the premise that the problem of disengagement is temporary and can be addressed by measures to stimulate engagement whilst protecting the 'residual disengaged' with some form of default tariff. Apart from the 'Catch 22' problem of how to set a default tariff (providing true protection removes incentives to engage) this fails to recognise the underlying dynamic that suggests the challenge of disengagement is actually going to get worse rather than better. New thinking about the market process is therefore required at a more fundamental level.

The approach of encouraging consumers to make the effort to engage whilst protecting those consumers who do not engage is inconsistent and unsustainable. Instead, the focus of remedies should be on reducing the effort that is required to engage – choosing the tariff that delivers best value to the consumer and the system as a whole should be the easiest choice to make rather than the hardest. This, in turn, requires a default energy supplier that is strongly motivated to extract the full system benefit from the demand resource.

Coincidentally, the development of a more decentralised energy system will increasingly require active management of distribution networks to avoid unnecessary network expenditure (the so-called 'smart grid' agenda). It is difficult to imagine a market based system that has acceptable transaction costs and is capable of rationing demand efficiently to optimise resources at both local network and wholesale level.

These trends both point towards the need to establish regional energy companies that are responsible both for network operation and default energy supply and regulated to minimise combined network and wholesale costs. This would establish a situation whereby consumers are able to choose *how* to consume energy rather than *who* to buy from. Although this would move on from the competition agenda in retail energy markets that has been pursued over recent decades, it could stimulate the creation and growth of competition in markets for new technologies that will ultimately lead to better outcomes for consumers.

This represents a major departure from the current industry structure and there are other more immediate actions that can be taken to overcome barriers to consumer engagement, such as introducing obligations on licensed parties (suppliers and network operators) to procure minimum volumes of dispatchable demand. The CMA has an important role to play in the policy conversation in pointing out the evolving market and policy context and the implications this may have for retail market regulation. The concept of regulated regional

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energy companies should therefore be explored as part of the proposed remedies and compared with alternative options to improve consumer engagement.

Wholesale market design

The CMA conclusions related to wholesale market design involve only one issue of note, namely concern expressed over the treatment of transmission losses in the settlement process. Although this has been the subject of continual debate since the UK electricity market was established, it has not been central to recent international discussions on market design. Instead, these discussions have been dominated by the question of how to create markets that will encourage system flexibility and support the efficient integration of large volumes of variable renewable generation. In particular, the potential role and design of capacity mechanisms has been widely debated in this context.

All roadmaps exploring energy system decarbonisation in the UK envisage significant further deployment of variable renewable generation and the lack of progress with alternatives (nuclear and carbon capture and storage) only serve to reinforce this imperative. The challenge of renewables integration should, therefore, lie at the heart of wholesale market development. There are three potential solutions to this challenge:

1. Grid level flexibility (primarily generation but also some forms of storage)
2. Embedded flexibility (primarily demand response but also distributed generation and storage)
3. Grid reinforcement and network interconnection

Wholesale market developments should help ensure that efficient choices are made in terms of these three sources of flexibility and should certainly not obstruct the creation of flexibility options. The CMA has chosen to step aside from the controversy surrounding the implementation of the capacity mechanism in the UK and these issues will undoubtedly be explored in the investigation currently being undertaken by the Competition Directorate of the EU Commission. However, it is important to assess the recommendation relating to transmission losses in terms of this broader context and there are a number of issues that the CMA should explore:

1. Does a focus on developing and implementing a new system to allocate the cost of transmission losses deflect resources away from other developments that will deliver more significant cost reductions (e.g. promoting demand response)?
2. How does the issue of transmission loss allocation fit with the broader requirement to ensure efficient investment in network and commodity resources?
3. Do the proposed changes to the UK market rules encourage or obstruct the creation of regional markets and larger system balancing zones.

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Appendix: The role of markets

Electricity market liberalisation was first conceived and implemented in the 1980's and 1990's. It was based on a number of clear underpinning principles:

- The role of Government in determining outcomes should be minimised and essentially restricted to obligations on network operators to maintain statutory safety and security standards.
- Organised markets, where a central entity in some way manages the trades between producers and consumers or acts on behalf of consumers, should be restricted to the delivery of these Government determined outcomes.
- Where possible, the costs of Government determined outcomes should be allocated on a 'polluter pays' basis as a means of driving efficient trading.
- Where it is not possible to have sufficient numbers of players involved in trading (e.g. provision of network services) then regulation is required.

These principles could not be implemented in one step. For example, pragmatism has demanded that investment decisions in networks should be de-coupled from those in generation and demand on the basis that this will not significantly undermine overall efficiency. It has been the job of the regulator to ensure that network costs are minimised in light of changes in generation and demand characteristics and to develop a network charging regime that allocate costs and delivers overall system efficiency. Nevertheless, much of the market development agenda over the past two decades has been driven by this underlying vision. There have been many discussions over the extent to which it can be delivered in the near term (e.g. is it possible to remove Government imposed reliability standards without a fully active demand side to the market, what is an appropriate transmission access and charging regime, how to efficiently allocate energy imbalance costs) but it has still remained a valuable guiding hand that has driven the actions of regulators and provided a strategic compass for companies and investors operating in the market.

Three major changes have arisen since this vision of market liberalisation was first established. Firstly, the climate imperative became apparent in the early 2000's and demanded a transformation of the power sector from high carbon to low carbon. This involved the need for Governments to impose a new constraint on market outcomes related to emissions. The timescales associated with this transformation, the need to create technology options and drive deployment of less mature technologies and the desire to reduce costs of finance, have meant that a single high level constraint is inadequate and a series of measures have been introduced to drive investment in low carbon generation (largely variable renewables). Apart from establishing a major new requirement for central procurement, the variable nature of renewables has changed the extent of the system balancing challenge and the costs involved. It is, therefore, unclear how the application of the liberalisation principles is consistent with the transformation and whether it remains an appropriate long term vision.

The second major change is associated with the rapid increase in the proportion of generation connecting to the distribution network, much of it variable is nature. This has made it more difficult to deliver operational security standards and raises the questions

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as to whether the operation of these networks requires more active management of supply and demand and whether this, in turn, requires an extension of the market scope. This suggests that the key simplifying principle initially adopted to operate balancing markets over wide geographical areas and at the transmission level may no longer be appropriate. However, the increase in complexity, transaction costs and the difficulty in achieving true competition in restricted geographies might suggest that further market fragmentation is not the correct way forward.

A separate, but similar, issue involves the simplifying assumptions relating to the de-coupling of network and commodity investment processes. The assumption to-date is that network investment can be decided on the basis of known changes to supply and demand and there is no attempt to 'co-optimise' overall investment efficiency. The deficiencies of this approach are most evident with the development of interconnection since it has not been possible to justify infrastructure investment that breaks away from the historical paradigm of resource 'self-sufficiency' on a national level. New approaches are, therefore, required to achieve the potential resource efficiencies associated with a single energy market.

Finally, the migration from analogue to digital technology raises the potential of a demand side of the market that is far more active than was previously possible. Moreover, it is widely believed that the active participation of the demand side will deliver significant savings in overall resource costs compared to one in which demand is largely passive. However, experience with retail markets hitherto has demonstrated the difficulty in engaging consumers in energy markets. This suggests that focusing purely on achieving the correct price signal in the market may not be the best way to achieve the goal of efficiently utilising the demand side resource.

These three changes raise different challenges for the high level vision of liberalised markets. The migration from centralised to de-centralised generation and the desire to co-optimise network and commodity investment does not challenge the underlying principles but merely suggests that new pragmatic approaches are required to deliver overall market efficiency. The need to drive low carbon transformation and the development of the demand side of the market raise more fundamental questions about the overall direction of travel and the appropriate vision for a low carbon and two-sided electricity market.

The changes discussed above have left a number of open questions about the market design that remain to be resolved. These questions can be grouped as follows:

1. Low carbon transformation:

- Is the need for central management of investment (and dis-investment) purely a feature of the imperative to rapidly transform the market or has the transformation merely highlighted a fundamental problem with investment being driven by short term prices? (This is often known as the 'capacity market question').
- If it is appropriate to revert from central management of investment to price driven investment, when should this happen?

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- What is the appropriate governance to ensure efficient central management processes? This relates both to procurement of renewables and operation of capacity markets?

2. Co-optimisation of network and commodity operation and investment:

- Is it appropriate to apply market pricing over more restricted geographical areas – locational marginal pricing at transmission level or even within local distribution networks?
- How should network (transmission and distribution) regulation and governance evolve to deliver more efficient overall use of resources?

3. Activation of demand side resources?

- How is it possible to achieve significant consumer engagement in the opportunities presented by digital technologies to save costs through more efficient and flexible consumption?

Although these questions can be considered separately, the solutions must represent a coherent overall package covering markets, regulation and governance. It is through achieving this coherence that investors will begin to understand and trust the future direction of market development and this, in turn, will deliver major reductions in financing costs.

There are significant advantages in placing consumers, and the understanding thereof, at the core of the thinking. Apart from the obvious relevance to the final question above, the efficient use of demand resources is critical in minimising overall costs at both distribution and transmission levels. Also, the need, or otherwise, for capacity mechanisms stems from the inability of consumers to express their own value of lost load – capacity mechanisms are merely a mechanism to replicate outcomes that would be expected if this market failure was removed . Much of the challenge therefore involves painting a clear picture of consumers and their role in future energy markets.