RESPONSE TO OFGEM CONSULTATION DOCUMENT "PROJECT DISCOVERY". OPTIONS FOR DELIVERING SECURE AND SUSTAINABLE ENERGY SUPPLIES.

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I am currently a Senior Research Fellow at the Oxford Institute of Energy Studies, as well as a Visiting Fellow at the University of Sussex (SPRU Energy Group). I also act as rapporteur for the BIEE Climate Change Policy Group. I am a former Managing Director of the leading economic consulting firm NERA UK, and led the NERA team that was intimately involved in the design and negotiation of the 1990 market arrangements. Prior to joining NERA I had been Chief Economist at the Electricity Council, which, inter alia, exercised a quasi-regulatory function in relation to the entities that made up the state-owned power sector in England and Wales. Since 1990 I have worked with the World Bank and other agencies in the promotion of power sector reforms in many countries, both developed and developing, across the world. I have therefore a wide international experience of the successes and failures of institutional and market reforms in many different environments.

The views expressed in this response are my responsibility alone, and should not be attributed to any of the organizations with which I am currently or formerly associated. They may however form the basis for future articles or papers to be published elsewhere.

This response to the OFGEM consultation is intended to address primarily the issues for the electricity sector in achieving security and low carbon[1] sustainability. Electricity markets have several particular technical and economic characteristics that differ from gas markets, but in this context the most important feature of electricity is its uniquely important role, both strategically and in terms of emissions volumes, in the pursuit of the UK objectives for lower CO2 emissions over the short, medium and longer term.

Some of the arguments presented in this response may have a partial read across into analogous arguments for gas, but I wish to present them primarily in relation to the power sector, which is the main concern of this submission.

I wish to express broad agreement with two of OFGEM's most important findings: first that markets as currently constituted are not capable of delivering with any real certainty on sustainability and low carbon policies – this is now a near universal view among serious commentators on the subject; and second that similar concerns should apply to the issue of generation security and capacity adequacy.

There are however some aspects of the analysis and comment in the OFGEM document that could be further developed, or where additional factors need to be considered, particularly in respect of sustainability objectives. Some of the arguments at which the document hints, or develops in part, could and should be emphasized more heavily. I have attempted to deal with all these points through answers presented in the format dictated by the main consultation questions.

Overall I believe the OFGEM document understates the case for, and overstates the problems with, more radical reforms. It also understates the risks that minor reforms will fail to deliver on the key objectives of supply security and high levels of low carbon investment.

[1] This and similar phrases are used throughout this note as shorthand for CO2 emissions in the context of UK policy to limit the impact of emissions on climate.

CHAPTER: THREE
QUESTION 1: DO YOU AGREE WITH OUR ASSESSMENT OF THE CURRENT ARRANGEMENTS?

This is central to the analysis because it is the often controversial interpretation of the history of the current market arrangements that largely drives the assessments and the arguments. There are two major points to be made which should condition any assessment of the relative merits or otherwise of current arrangements, and hence the risks associated with change.

1. **Attributing efficiency gains to current arrangements**. Paragraph 3.5 refers to "critics" of the current arrangements. However it is not in itself a criticism of current market arrangements to remind the reader that a very high proportion of historical efficiency gains and falls in consumer prices post 1990 derived directly from factors which cannot legitimately be ascribed either to particular features of the market structure or even to the existence of a competitive market per se.

In particular, and taking the whole period since 1990, the most important factors included:

- the elimination of high cost UK coal which disappeared as the initial vesting contracts were phased out in the 1990s. This reflected abandonment of the policies of successive UK governments in forcing the electricity industry, the CEGB, to support the UK coal industry. Privatisation and competition may have provided a convenient cover for this policy change, but the benefits in terms of electricity costs and prices owed little or nothing to competition per se. The CEGB, in pursuit of its main statutory duties, would in any case have moved away from expensive UK coal to take advantage of cheap and plentiful coal imports. This gain would have occurred under any form of regulated or competitive industry and market structure.
- the simultaneous advent of relatively new technology in the form of combined cycle gas turbines (CCGT); since this was and is an international technology, the innovation and its development cannot be ascribed wholly or in part to UK market liberalisation.
- the combination of this factor - CCGTs - with a period of cheap and plentiful gas.
- very substantial increases in efficiency, and cost reduction, in the natural monopoly elements of the sector, especially distribution costs; these however were driven by a combination of regulatory and private sector incentives, not by the market arrangements for generation and supply.
- Reductions in concentration within the industry in the late 1990s, driven by post-1990 competition policy concerns, and which preceded the introduction of the NETA arrangements.
- Overall capacity surpluses through much of this period; with CEGB assets having been sold off at below book value, the need to earn a return on the capital value of historic investment was largely removed, and prices in any competitive market were bound to be driven below the levels sustainable as a long term average.

It is certainly true that the NETA changes removed the element of capacity payment, and that this will necessarily have had some downward effect on prices in the short term. Whatever other merits NETA may have had, however, the failure to replace that element with an alternative means to reward capacity represented a disregard of the fundamental economics of the power sector, especially in respect of the link between market driven prices and investment, and in

removing the market mechanism that had been put in place to provide continuity[2] in security of supply after 1990. With others[3], and despite its possible contribution to driving down prices during a period of apparent sufficiency of capacity, I believe this is now a significant part of the security of supply issue.

It is also possible to point to other direct evidence, especially post 1990, of improvements in efficiency, most notably in power station operation and availability, which will almost certainly have been driven partly by market pressures and partly by additional pressures and disciplines arising from private ownership of the facilities. However it is very hard to argue convincingly that these gains resulted from *particular* characteristics of the competitive market structure and rules since 1990 or 2000, and certainly not from the particular feature of supply competition per se, around which much of the reform debate is likely to take place[4].

Paragraph 3.14 attributes post 1990 investment to the virtues of the existing regime. However, much of this is also attributable to the particular factors of gas and CCGT identified above and it is patently a current concern that markets are not delivering reliably on either security or low carbon investment. Paragraph 3.7 correctly recognises this.

In general we should not assume without further evidence and analysis that the advantages and benefits, that have accrued from a structure built around competition and private investment, would necessarily be compromised even in quite major modifications to the current structure.

2. **Recognising essential preconditions for any market arrangements to work efficiently**. In learning lessons for the future, it is also essential to note that one of the great achievements of the radical market design for the 1990 privatisation was that it successfully replicated the operational optimisation embodied in the CEGB merit order[5] structure into a market bidding arrangement. Without this feature the market would have become substantially and visibly less efficient on Day One of the new arrangements in 1990, obviously implying considerable political embarrassment, and undermining any claims for the virtues of competition and private ownership. This was therefore a well justified and essential pre-condition imposed on the design of the market.

This point is fundamental to examination of the future because it demonstrates the link between the technology of power generation and market structure. In 1990 and historically, system operation was built around the deployment of flexible fossil fuel plant that could respond to meet continuously changing demand for a non-storable commodity. Post 1990 this worked through an essentially simple bidding process which, conceptually at least, encouraged players to bid at marginal cost, and corresponded exactly to the merit order ranking employed within the command and control system of the CEGB. Notwithstanding the NETA changes, in essence this feature of the market remains.

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[2] Notionally the security standard remained unchanged because the old CEGB "three winters in a century" of insufficient capacity and (minimal) load shedding was deemed to correspond to a consumer valuation of £ X per kWh so that a penalty of the same value of £ X on suppliers' failure would result in the same security outcome as under the CEGB regime.

[3] *Hot air, gas prices and energy policy*, Dieter Helm, December 2005. Can be accessed via the link: www.dieterhelm.co.uk/publications/December05.pdf

[4] Supply competition is the component of the competitive framework most directly affected by more radical reforms such as a supplier obligation or a central buyer.

[5] In fact, although now largely taken for granted in the UK, the CEGB merit order itself was a remarkable technical achievement, widely emulated around the world in centralised systems. In many countries its application remained or remains an aspiration rather than a reality.

The key significance of this observation is that a future low carbon world is likely to have very different plant characteristics, dominated by relatively inflexible plant (nuclear), plant with intermittent and/or stochastic characteristics (renewables), and in the medium term much greater opportunities for positive/negative storage through different types of more flexible demand (eg to serve the transport sector). Faced with very different technical and economic characteristics, any electricity market will most likely need to be defined in a completely different way. It may for example need to be consistent with a system operation that depends on optimization over much longer periods of weeks, months or seasons. The consultation document mentions some of these possibilities, for example in paragraph 3.32, but does not really develop the full implications.

Some of the issues associated with continuation of the current arrangements have already been highlighted in the Poyry report[6], paradoxically in terms of the problems for fossil-fired generation when its viability becomes dependent on price spikes and infrequent operation, and in the context of intermittent wind power. We should expect new problems as the number and contribution of non-fossil technologies increases. This should militate against approaches based on "fixing" individual problems with the market arrangements, since these will not anticipate every issue.

Optimising the operation of generation based largely on non-fossil technologies is inevitably a much more complex task than simply stacking the short-run marginal costs of generating plant in a one stage, one price, auction process. If it is amenable to an auction process at all, it would most likely be to a multi-stage auction with complex structures and no very clearly defined output of a single "price" for each period.

We cannot assume therefore that a market built around the notions of daily or half-hourly optimization and pricing will remain "fit for purpose", or that the current structure is capable of incremental evolution to a new and more complex system of market "auctions", let alone any bilateral trading equivalents, that will still deliver short-term operational efficiency.

The correct lesson to draw therefore from the successful replication of merit order in current arrangements is the following: it is the central importance of having market arrangements that are compatible with the predominant technologies of the day. If we are seeing an evolution towards a set of technologies with very different operating characteristics, both on the supply and demand side, then we shall need very different market structures. We cannot assume a natural incremental evolution from the rules that exist today, or even that a similar market structure will be possible or optimal.

QUESTION 2: ARE THERE OTHER ASPECTS OF THE CURRENT ARRANGEMENTS WHICH COULD HAVE A NEGATIVE IMPACT ON SECURE AND SUSTAINABLE ENERGY SUPPLIES, OR COSTS TO CUSTOMERS?

1. **Perverse treatment of financial risks**.[7] Paragraph 3.18 of the OFGEM report correctly recognizes the perverse incentive, that *investments with stable operating and fuel costs (such as nuclear and wind) could be viewed by … suppliers as more risky than investments whose costs vary with volatile global fuel costs*. This point is strengthened when one notes that under current structures fossil fuel plant will continue to be at the margin for some time and hence to set price.

[6] *How Wind Variability Could Change the Shape of British and Irish Electricity Markets*, Poyry, July 2009
[7] This has been noted by a number of individuals, including the distinguished electricity economist, the late Dennis Anderson, to whom I am indebted for this particular formulation. See for example: *Electricity Generation Costs and Investment Decisions*, UKERC Working Paper, February 2007.

So any fossil plant gets a degree of protection (obviously varying by type of fuel and efficiency) that is equivalent to a partial pass through of fossil fuel price volatility. This is intrinsically discriminatory against non-fossil plant, because fossil will continue to set the margin price for a long time. Even if non-fossil plant were to have more certain total "levelised" costs, this pass through effect would make fossil plant a lower risk investment. In effect a degree of pass through of fuel costs for incumbent forms of generation creates a barrier to entry of new technologies.

2. **Discrimination against non-fossil**. Paragraph 3.19 correctly observes that the rules of the market currently reflect the needs of fossil generators. The current institutional structure is therefore a potential source of discrimination against new technologies, and may not be well adapted to some of the quite radical technical changes that may be required.

3. **Asymmetry in treatment of capacity risk**. There is another feature of the current arrangements that deserves to be spelt out more fully. It is the fundamental asymmetry between the risks of under and over provision, and in particular the inconsistency between the treatment of this asymmetry from a societal perspective and under current market arrangements.

From the societal perspective, embodied, in principle if not always in practice, by the old CEGB, the net costs of over provision may be relatively small. There is certainly a resource cost in over investment, but it may be partially offset by earlier retirement of old inefficient plant. The cost of under provision on the other hand is commonly seen as near catastrophic. Inelastic demand is not choked off by the price mechanism, and the outcome is load disconnection (black-outs or brown-outs) and potentially widespread loss of output across all sectors of the economy. At a national level it is reputationally disastrous and a "market failure" that cannot be ignored by governments.

In a market context however, and from the perspective of an individual investor, it is more likely to be over-provision that is potentially catastrophic, since it forces a collapse of prices. Any attempt by major players to restore equilibrium by closing capacity also runs the risk of regulatory intervention on competition grounds. Under provision, by contrast, implies higher prices and better returns, and is only inhibited by effective competition to introduce additional capacity, as the higher profits that would be earned in conditions of shortage are "competed away" by the anticipation of the shortage.

In the context of low carbon investment, this asymmetry is even more pronounced. Over-investment implies the over achievement of sector carbon targets, and hence the more carbon-efficient operation of the sector. Within a rationally administered framework of national targets this would in principle allow more carbon allowances to be "spent" in sectors such as aviation where consumers implicitly attach a much higher value to their use of fossil fuel and resulting emissions.[8] Given that current carbon emissions are typically valued or priced at well below most estimates[9] of their social cost, this would be a large social gain, albeit one whose incidence may be very diffuse.

This asymmetry in risk of under and over provision was catered in the1990 arrangements through a penal incentive requirement on public suppliers to buy in the market up to a price intended to reflect the value placed by consumers on a secure supply - the Value of Lost Load (VOLL), but this feature was lost and not continued under NETA. Abolition of the capacity element

[8] *Meeting the Aviation Target. Options for Reducing Emissions to 2050*. Report from the Committee on Climate Change, December 2009.
[9] See for example the Stern review and other sources.

represented a serious misunderstanding of the economics of the sector, in particular the conceptual link between the value of lost load and the setting of a security standard, based on an explicit assumption about the cost to consumers of failure to provide adequate capacity.

4**. Co-ordination requirements for systems based on new technologies.** Finally, in parallel with the market design and system operation issues posed by new technologies, there are also a wide range of questions associated with what are the ranges of technically feasible proportions in which to combine certain renewables (especially in the case of wind), nuclear and CCS investment. There are also corresponding issues over the choice of sites for wind, inter alia to maximise diversity, and for CCS, to minimize new infrastructure costs for pumping and storage of captured CO2. It is hard to see how these issues can be resolved without considering the impact of the choices on markets and their structure and regulation, and without simultaneous consideration of transmission planning issues.

QUESTION 3: DO YOU AGREE THAT THE FIVE ISSUES WE HAVE HIGHLIGHTED ARE THE MOST IMPORTANT?

Issue 1. **High investment against a background of uncertainty**. The first part of this statement, re high levels of investment, is certainly correct. The statement also asserts that we are in an era of heightened perception of risk and hence a high cost of capital. This seems paradoxical at a time when nominal interest rates at an all time low and, according to most of the canons of modern finance theory, investment in well regulated utility industries, generally with risks that are not market correlated, should tend to be relatively low risk and low beta. It will only be otherwise if there is a lack of confidence in the regulatory framework. The real issue therefore should be stated as the difficulty in attracting high levels of investment against a backdrop of ***contractual*** or ***regulatory*** uncertainty[10]. It is this that most clearly needs to be addressed.

The most obvious historical parallel for a high investment transformation of the power sector in a modern economy is the highly successful decarbonisation of the French power sector in the 1980s and 1990s, the scale of which was certainly comparable to the challenge facing the UK today, and which was accomplished primarily through the state sector (EDF).

An alternative and better formulation of this issue might be to ***consider how the necessary and very high levels of investment can be achieved through private investment and an appropriate balance of regulation and competition in electricity markets***.

Issue 2. An inadequate and uncertain carbon price. This is certainly an important issue, but one that is difficult to "fix". If, hypothetically, global carbon limits were capable of being fixed as if emissions were a commodity with an absolutely fixed cumulative supply, then market solutions would ultimately enforce compliance, albeit possibly through some very high prices and some very painful consequences. However this is not likely to happen any time soon and policy initiatives have instead focused on alternative means of intervention, of which a modest increase in the carbon price, for example through a carbon tax or a floor price, is merely one.

Reliance on a carbon price fix carries two opposing risks. The first is that, since it will inevitably feed through into consumer prices, political pressures will prevent it from being set at a level that actually induces sufficient investment. In that case it could both incur significant costs (to

[10] Mainly in respect of the specific uncertainties of rewards to capacity provision, and for low carbon forms of generation, rather than the overall regulatory framework.

consumers) and yet be ineffective, discrediting UK climate change policy in general. The second risk is that the price would be set unnecessarily high, generating windfall profits for new nuclear and CCS plants, and possibly also for some renewables. At an EU level the underpin approach could also involve protracted negotiations within the EU.

This issue therefore needs to be considered together with the other risks and uncertainties facing investors, including (for low carbon investment) the volatility in fossil fuel prices per se, and the absence of regulatory or contractual certainty, possibly exaggerated by the number of different instruments and jurisdictions to which an investor must have regard.

Issue 3. Asymmetry of risk. The asymmetries of risk as between under and over provision have been discussed at some length above. This is a very significant issue with the current framework. However the arguments may be considered to apply similarly, and a fortiori, to asymmetry in achievement of sector carbon targets. This should be emphasised rather more in stating this issue.

Issue 5. Affordability and competitiveness.

Affordability is an issue that may be important but cannot necessarily be addressed directly through the market. It may be equally likely to arise under any of the various alternative market arrangements. Significant real terms price changes are entirely plausible under any feasible scenario, resulting from, for example, changes in fossil fuel prices, policy driven changes to carbon prices, or exchange rate movements, all of which are likely to be *much* more significant effects than variations in market structure.

There are alternative regulatory and policy measures available to address affordability issues, including the use of "lifeline" or rising block tariffs, in which limited quantities of energy are supplied at favourable rates. Affordability should not necessarily therefore be treated as a prime issue in the particular context of comparing alternative approaches to market reform.

UK competitiveness is also frequently raised as a major concern in the regulation of energy prices. In reality there are very few sectors of the economy, and a very small percentage of GDP, for which energy costs make up more than a small proportion of total costs. For many more sectors of the economy relative labour costs, and hence exchange rate movements, are far more significant.

There are of course some important energy intensive sectors, and it is important that these are examined to make sure that UK policies, especially in promoting low carbon futures, do not result in their migration to less energy efficient environments. However, as has been pointed out by Michael Grubb[11] and others, this means that the focus should be on *carbon leakage*, not on *competitiveness* per se. This should be reflected in statement of this issue.

Additional issues

Coordination. For the reasons given in answer to question 1, the whole question of coordination needs to be considered in relation to market structure, in the context of system operation.

[11] *Tackling Carbon Leakage*. Grubb and Counsell, Report from The Carbon Trust, March 2010. Also a recent presentation to the BIEE Parker November 2009 seminar authored by Grubb, Droege (Berlin SWP) and Brewer. (Georgetown)

However the coordination issue also impacts on choice of investment. The likely advent of new generation technologies, in the form of renewable, nuclear and CCS, and new types of load susceptible to central scheduling, as well as decentralised options, along with their associated infrastructure requirements, raises new issues on the extent to which existing market mechanisms can deliver optimal or even feasible outcomes in terms of generation capacity mix. This raises the question of whether an existing or new central body, such as the National Grid, might need to set limits on proportions or siting options for particular technologies, or to control other aspects of investment.

Reforms to market arrangements should at the very least be capable of ***flexibility*** in dealing with generation technologies and future load patterns which will represent dramatic changes over the next two decades, many of which cannot currently be fully anticipated or accurately forecast.

QUESTION 4: DO YOU HAVE ANY COMMENTS ON OUR DESCRIPTION OF WHAT MIGHT HAPPEN IF NO CHANGES ARE MADE TO THE CURRENT ARRANGEMENTS?

The risks are implicit in the analysis contained in this submission, and two of the most important are:

- failure to meet carbon objectives, or meeting them with sub-optimal means and timing
- a collection of generating plant that cannot be scheduled and dispatched efficiently, resulting in higher costs to consumers, as well as possible risks of inadequate capacity.

CHAPTER: FOUR

QUESTION 5: DO YOU BELIEVE THAT OUR POLICY PACKAGES COVER A SUFFICIENT RANGE OF POSSIBLE POLICY MEASURES?

The packages broadly cover the range and are similar or analogous to those proposed by the Committee on Climate Change[12]. Most of the other measures that might be proposed can probably be brought within this broad framework.

QUESTION 6: DO YOU HAVE SUGGESTIONS FOR VARIANTS TO THESE POLICY PACKAGES?

All the packages are potentially subject to a number of variations. This response concentrates on the option of a central agency as potentially the most effective means of tackling low carbon sustainability and hence national carbon objectives.

Two obvious variations that might be considered are:

- separate agencies for gas and electricity, although there are some clear coordination issues between the two fuels, notably in respect of intermittency issues
- an agency for electricity but not necessarily for gas

[12]*Meeting Carbon Budgets. The Need for a Step Change.* Progress Report to Parliament from the Committee on Climate Change. October 2009.

Additionally, the comments above have identified issues of coordination in relation to the respective roles of a central purchasing body, and system operation and transmission planning. This raises the question of the nature of its relationship with the national grid, or indeed

- whether this purchasing responsibility should reside with a national grid company ?

OFGEM should also consider what might, in the absence of competition law restrictions, develop naturally from a set of enhanced obligations on supply companies: joining together of firms under a supply obligation in order to meet the collective obligation through a jointly managed agency. This is not to recommend this approach; it is merely to observe that a central agency might be seen by suppliers as an efficient means for them collectively to meet their obligations.

Additional variations to be explored include:

- the precise nature of the statutory and other responsibilities of a central agency
- how its remit could or should be linked to progress monitoring on carbon emissions issues by the Committee on Climate Change
- the mode of conduct for low carbon generation and capacity tenders, and the form of any associated long term contracts
- the extent of quotas, if any, for different types of generation
- the extent of its monopoly in bringing on new capacity, and in holding capacity contracts
- transitional arrangements for existing plant, including the possibility of long term contracts

Particular variations in the design of such a central body deal with a large number of the practical and theoretical objections that have been expressed in opposition to the notion of a central agency.

QUESTION 7: WHAT OTHER POLICY MEASURES DO YOU BELIEVE SHOULD BE CONSIDERED, AND WHY?

A number of possible policy implications are implicit in the above analysis, but in this context many of them can be subsumed in the later discussion of the functions of a purchasing agency for the sector.

Otherwise, the most important single area for the development of policy should be to ensure the development of structures that allow for the correct reflection of changing generation cost structures into pricing and tariffs at every level within the sector. As far as possible this should include the internalisation of costs associated with CO2 emissions.

CHAPTER: FIVE

QUESTION 8: DO YOU AGREE WITH THE ASSESSMENT CRITERIA THAT WE HAVE USED TO EVALUATE THE POLICY PACKAGES?

These should be considered with great care, since the precise statement of the criteria serves to frame the arguments. The proposed set of criteria requires some modifications and additions.

Criterion 1. Supply security. This should be stated as a much more precise objective, such as *providing the ability to attain an **optimum** level of supply security*, taking into account both the cost (to consumers and to the economy) of failure and the cost of excess provision.

Current arrangements clearly do not provide this, since, unlike at the 1990 inception of a market structure, there is not even a theoretical mechanism by which the market can deliver an optimal result; it is not clear what minor modifications might realistically overcome this problem. Only proposals that can specifically address this issue should be considered as meeting this criterion.

Criteria 2 and 3. Low carbon and renewable objectives for 2020. These objectives are prima facie closely related and should really be dealt with together, albeit with a very high weighting.

Also this objective should be framed in such a way as to reflect the deeper underlying policy objective, which is better described as being to limit or minimize cumulative national (global) emissions over a sustained period of time, rather than excessive focus on an arbitrary set of indicative single year targets for the particular year 2020. OFGEM should be in harmony or compliance with the overall policy direction rather than with individual targets.

The particular measures necessary to achieve the best long term outcomes for cumulative emissions are not necessarily identical with the measures necessary for a 2020 target. They should include for example any framework measures necessary to promote almost complete decarbonisation of the power sector by soon after 2020, and similar measures to allow for much of transport energy use to migrate to electricity soon after that.

I would suggest replacement by

- *ensure that carbon objectives can be met, and provide an environment to allow the investment and other behaviour necessary to achieve the UK's contribution to lower global cumulative concentrations*.

Other criteria. The remaining criteria could usefully be re-worked to become:

- *compatibility with an efficient power sector, encouraging and maintaining competitive pressures within the sector* (rather than the somewhat circular "risk of prices being higher than necessary")

- *avoiding or eliminating discrimination against innovative low carbon solutions* ("dampening innovation*"* is too vague a concept)

- *flexibility in responding to changing conditions*; this is not mentioned in the document as a criterion, but is very obviously important in a possibly fast changing market, technical and policy environment.

- *practicality* in all aspects – legal, administrative and technical

QUESTION 9: DO YOU HAVE ANY COMMENTS ON OUR INITIAL ASSESSMENT OF EACH OF THE PACKAGES?

Some of the comments in the initial assessment appear to reflect conventional, and occasionally somewhat dated, prejudices about the role and efficacy of markets. This may be appropriate as a first step in a consultation document but several of the implied assumptions deserve much closer examination. This is particularly the case for the more radical options such as a central agency, where I would make a number of observations that question or contradict the views or assumptions expressed in the consultation document.

Paragraph 5.22 suggests a risk that the Central Energy Buyer under-forecasts demand. Of course either a central buyer, or "the market", or a consensus forecast, may all equally get the future wrong in either direction. The real point though is that the central buyer is likely to build in a higher margin for forecast error simply because it implicitly puts a higher value on security of supply than does "the market", for reasons set out earlier. Its natural incentive is to ensure adequate capacity, while the natural incentive in the market, absent the appropriate capacity rewards, may be to avoid building too much capacity. Similarly the historic tendency of centralized agencies to "overestimate" partly reflects their duties to ensure adequate capacity[13], implying a higher reserve margin rather than forecast error.

Paragraph 5.22 also suggests a risk that the Central Energy Buyer will undervalue the diversity of alternative sources of capacity. The opposite is more likely to be true, given that a central buyer would necessarily have an important role in ensuring that the balance of capacity types is technically compatible with maintaining supply. Even if we just take wind as an example, it is widely recognised that the wind capacity contribution, or "wind load factor", can only be optimised if there is adequate geographical diversity in the siting of wind turbines. This is unlikely to happen without some element of central direction or coordination and this is recognised to a degree in Chapter 4.

Paragraph 5.22 also suggests a risk that a Central Energy Buyer will undermine the existing market and cause early retirement of plant. However there is no intrinsic reason why this should be the case. A central buyer is likely to want to support a higher reserve margin and would have the ability to do so through contracts for existing as well as new capacity; if necessary therefore it could act to limit the early retirement of capacity.

Paragraph 5.57 merely repeats the argument about forecast "error", dealt with at some length earlier. Paragraph 5.59 asserts, implicitly, that supply competition per se has been responsible for substantial efficiency gains, and that its weakening would reduce efficiency and hence ultimately raise prices. As indicated in the earlier analysis this is a highly questionable assumption, and, despite earlier claims in OFGEM papers, has not achieved widespread acceptance. Green[14] has indeed argued that retail competition can raise wholesale prices, corresponding to reduced efficiency and ultimately higher prices in comparison with a market based on long term contracts and a regulated supply business.

Paragraph 5.66 suggests the central buyer model is the most likely to dampen innovation. There is no argument to support this and indeed it is possible and more persuasive to argue the opposite, that a central buyer is more likely to have both the ability and incentive to support innovative solutions. There is no intrinsic reason why this should not include significant quantities of economically viable decentralised generation capacity. It has already been stressed that existing

[13] There are of course risks that any forecasts will fail to anticipate major changes, such as the extent of de-industrialisation in the 1980s and 1990s; arguably a central buyer influenced by government would have been criticised for predicting such an event as a consequence of other policies.
[14] *Retail Competition and Electricity Contracts,* Green , December 2003

market structures, by contrast, do tend to discriminate against innovative low carbon solutions. The burden of proof should be to show that proposed reform can deal with this.

In paragraph 5.92 it is suggested that the time to implementation for a central buyer model could be between 24 and 36 months. This is a surprising and barely credible estimate given that it took substantially less time[15] than this to carry out the vastly more complex design and institutional changes associated with the 1990 reforms, including development from scratch of a whole range of innovative market, regulatory and contractual structures. Moreover this time included a lengthy period of complex work, disagreement, and negotiation over the fundamental design of the new market structures, none of which had been anticipated at the outset.

The paper may well be correct in identifying the central buyer model as the one posing the most significant legal issues in a European context. However given that European markets, including some of those associated with the most successful utilities, are generally still some distance (further than the UK) from achieving the competition objectives set by the EC, it would be ironic if the UK's ability to deliver on the more pressing objectives of reducing carbon emissions, were to be compromised in this way. European experience of negotiating compliance with liberalisation directives does not however suggest this should be a serious obstacle, given the number of variations that are possible around the basic agency model, for example in the permission of third party access.

QUESTION 10: DO YOU AGREE WITH OUR SUMMARY OF THE KEY BENEFITS AND KEY RISKS OF EACH POLICY PACKAGE?

The summary reflects the chapter. However since some of the arguments, particularly with respect to the single buyer, are overstated, the summary as a whole also has the effect of overstating the risks associated with a central agency.

QUESTION 11: DO YOU HAVE A VIEW ON WHICH PACKAGE IS PREFERABLE, OR ALTERNATIVE POLICY MEASURES OR PACKAGES THAT YOU WOULD ADVOCATE? WE ARE PARTICULARLY INTERESTED ANY ANALYSIS YOU MAY HAVE TO SUPPORT YOUR VIEWS.

I believe there is a strong case for a central purchasing agency for the electricity sector. The case has been more fully spelt out in a supporting document, prepared in response to the Committee on Climate Change, to which OFGEM's attention is drawn. This is attached [16]. The case may however be summarised as follows.

The main problems are associated with carbon prices, contractual or revenue certainty, coordination and timing of investments in capacity and infrastructure, and adequate arrangements to ensure security of supply. The creation of an agency offers the most certain prospect not only of securing an adequate quantum of low carbon investment, as well as supply security, but also of securing a balance of different types of capacity and load management options compatible with secure and efficient system operation, and of coordinating that with the necessary infrastructure investments. This is necessary not only to ensure meeting 2020 targets but even more

[15] White Paper as very general statement of intent in April 1988; Privatisation Bill introduced November 1988; main features of market design, the Pool, not settled until mid 1989; full implementation March 1990

[16] *Addressing Inertia in Climate Change Policy: the Power Generation Sector*, Rhys, Parker and White, February 2010. May also be found at http://ccpolicygroup.blogspot.com/

importantly to secure wider objectives for the reduction of cumulative UK emissions. This advantage is largely recognised by OFGEM.

The objections to an agency approach are mainly that it fails to retain important features of a competitive market, in particular supply competition. However it is clear that a single buyer approach, properly designed and implemented, can retain the competitive incentives in building new plant, and the incentives for efficiency in operation. The main objection is to the loss of an element of supply competition, but this has not been shown to be a significant element in driving lower costs and lower average prices to consumers.

The alternative less radical approaches may all have individual merits, but carry significantly higher risks of not delivering on the key objectives.

CHAPTER: SIX

QUESTION 12: DO YOU AGREE WITH OUR ASSESSMENT OF THE TIMING FOR IMPORTANT INVESTMENT DECISIONS?

There is a need for an indicative framework for the investment requirement. From a low carbon perspective this should follow the advice emanating from the Committee on Climate Change.

QUESTION 13: DO YOU BELIEVE THAT EARLY ACTIONS SHOULD BE CONSIDERED?

Timing needs to be driven by the degree of urgency attaching to the relevant investments. In respect of low carbon objectives, a compelling economic argument, at least when expressed in global cost benefit terms, is that earlier investment delivers a significantly higher benefit than the same investment postponed. This is because the cumulative nature of atmospheric CO2 concentration implies that earlier emission reduction produces a permanent additional benefit, postpones the advent of higher CO2 concentrations, has a higher option value in consequence, and significantly reduces the aggregate externality from the sector.

Purely from the perspective of generation security, or overall adequacy of capacity, the urgency clearly depends on forecasts of demand and capacity, and valuation of the benefit of higher levels of security. The economic downturn will have had a significant effect in reducing load forecasts, and possibly postponing the immediate necessity of new capacity. Arguments for new fossil-fired capacity, as a stopgap measure, may therefore have been lessened.

QUESTION 14: DO YOU THINK THAT THE ISSUES ARE SUCH THAT POLICY MEASURES SHOULD BE CONSIDERED AS A PACKAGE OR SHOULD THEY BE CONSIDERED ON A CASE BY CASE BASIS?

Taking issues on a case by case basis risks producing a plethora of uncoordinated and contradictory measures that will be ineffective in meeting security or low carbon objectives. The preferred option should ideally be introduced as a single package of measures.

There is a also a clear risk that failure to grasp the nettle of effective reform will result in minimalist measures that fail to address the underlying issues, and ultimately result in slower and less satisfactory progress.