



Ian Marlee
Partner, Trading Arrangements
Ofgem
9 Millbank
London
SW1P 3GE

31 March 2010

Dear Ian,

Project Discovery - Options for delivering secure and sustainable energy supplies

EDF Energy is one of the UK's largest energy companies with activities throughout the energy chain. Our interests include nuclear, renewables, coal and gas-fired electricity generation, combined heat and power plants, electricity networks and energy supply to end users. We have over five million electricity and gas customer accounts in the UK, including both residential and business users.

EDF Energy welcomes the opportunity to respond to your second consultation on Project Discovery published on 3 February 2010.

We believe that important decisions relating to large scale investment need to be made urgently if we are to meet our climate change targets in a way that keeps prices as stable and affordable as possible. We believe that, although the current market arrangements have served us well up to now, it is important not to underestimate the scale of the challenge that decarbonisation of the power sector by 2030 will entail, and the consequent need for action in order to meet the UK's energy policy objectives beyond 2020.

Although Ofgem notes that the period around 2012 and 2013 could be important for investment decisions critical to future and sustainable energy supplies, we believe that in reality the urgency is even greater with significant decisions being made towards the end of this year and in 2011. A full review of market mechanisms may take time and therefore it is vital that a commitment is made now to legislate for a long-term framework for market reform that will deliver the capital-intensive, low carbon generation and supporting infrastructure necessary for substantial decarbonisation of the power sector by 2030, on a least cost basis. The legislation must establish the framework at the earliest practicable date, even though implementation may be deferred and activated at a future date specified in the legislation.

We believe that the required market reform should be evolutionary in nature, building on present market based principles. We think that it is too early to conclude which of the policy packages listed by Ofgem is the most appropriate and that it is possible to combine features from different models and to develop a range of other solutions. Instead, we believe it would be more appropriate first to agree the:

- key principles of what we expect market reform to achieve, including the scope of the changes, e.g. whether it will apply to all forms of electricity generation;
- principles on which we wish to base the design of the future market; and
- criteria against which we can assess the effectiveness of proposals.

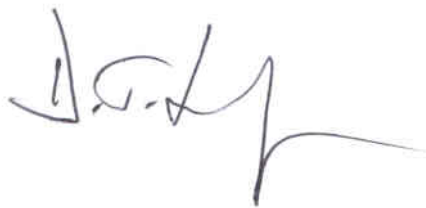
Ofgem has begun this process in this document and we believe that this will provide useful input to the Government's Energy Market Assessment (EMA) work. We believe that the focus needs initially to be on ensuring delivery of new low carbon electricity generation, with due regard to diversity and cost-effectiveness. Without such investment coming forward on a timely basis, security of supply will also be jeopardised.

Together with the wider reform proposals, we believe that the Government should reduce the uncertainty on carbon price, and therefore, more immediately, we need action now on carbon price to confirm that emissions of carbon dioxide will incur a minimum cost in the future. We believe that a carbon price floor can provide us with the confidence that the decision to build capacity will be a decision to build low carbon capacity such as new nuclear.

I attach our detailed response to the consultation in the attachment to this letter. The bulk of our response is primarily focused on the electricity market because this is where we see there is a real need for reform. However, we do provide specific comments on Ofgem's assessment of the current gas market in our response to Question 1, and also deal with the specific proposals for gas market reform in our response to Question 5. In Appendix 1, we have described the UK Gas market in more detail, explaining why it is different from the UK electricity market.

If you have any queries on this response, please do not hesitate to contact Ravi Baga on 020 7752 2143, or myself.

Yours sincerely,

A handwritten signature in blue ink, appearing to read "D. Linford".

Denis Linford
Corporate Policy and Regulation Director

Attachment

Project Discovery – Options for delivering secure and sustainable energy supplies

EDF Energy's response to questions raised

Question 1: Do you agree with our assessment of the current arrangements?

We broadly agree with Ofgem's assessment of the current arrangements. The background to this assessment is that the UK must plan for the early decarbonisation of the electricity generation sector so that it is almost entirely complete by 2030. This will allow low carbon electricity to make a significant contribution to the decarbonisation of the heat and transport sectors.

However, we must recognise the scale of the challenge that this represents for the electricity sector and the need to evolve the electricity market arrangements. This is essential if we are to deliver the core objectives of ensuring secure, affordable and competitive low carbon energy supplies. While these objectives are not mutually exclusive, it is important that they are explicitly recognised in the trading arrangements to ensure that the correct market signals emerge to deliver them. EDF Energy believes that this will help ensure that customers do not pay more than they need to for adequate and secure energy supplies.

EDF Energy is pleased to note the recognition of the need for a timely response to the challenges we face. Ofgem notes that the period around 2012 and 2013 could be important for investment decisions critical to future secure and sustainable energy supplies. However, the reality is that the urgency is even greater with significant decisions being made towards the end of this year and in 2011.

Therefore, commitment now to legislate for a reformed long-term framework is fundamental. This is essential in establishing an appropriate long-term framework for an incentive mechanism or obligation consistent with power sector decarbonisation by 2030. The legislation must establish the framework at the earliest practicable date, but implementation may be deferred and activated at a future date specified in the legislation. For example, an incentive mechanism or obligation could be triggered from, say, 2015-16, linked to a requirement to deliver low-carbon power at a subsequent forward date, say, from 2018.

Comments specific to the Gas market

The UK Gas market has delivered a large amount of system security, competition and liquidity since privatisation, making it one of the world's most efficient energy markets today. We note that despite the variability of oil and gas prices in the 1990s, with some periods of relatively low prices, investment in gas infrastructure (e.g. LNG supply chain and gas pipelines) was made. This led to 125% extra import capacity, in the context of forecasted declining UKCS production. This new investment in import capability was fundamental in ensuring that the UK did not enter an emergency during the highest demand period ever this past winter and represented 30% of supplies on the highest demand day, 8th January 2010.

Ofgem is looking for a certain level of security of supply in gas and so it is important to know the level of insurance Ofgem and/or the Government is seeking. If it is for a 1-in-20 peak day or a 1-in-50 peak winter demand, then we believe that it will be difficult for the market to deliver such a requirement. However, we believe that investment in gas infrastructure

should be made in the context of decarbonising the power and heat sectors, and that an efficient and liquid market for gas can deliver a high level of security of supply.

We note that in addition to 123 bcm/year of extra import capacity, there is a total of 17.5 bcm/year of new import capacity under construction and in excess of 25.5 bcm/year of import capacity proposed. In addition, the UK already benefits from 4.3 bcm of storage capacity, with there being 0.6 bcm of additional storage under construction and 4.3 bcm of storage with planning permission. There is 1.9 bcm of storage awaiting planning permission and a further 13 bcm of storage in the pipeline that has not yet applied for planning permission. This would suggest that not only is the market delivering storage capacity but it is also delivering the type of storage projects that the market requires.

The remainder of our response is primarily focused on the electricity market because this is where we see a real need for reform. However, we do provide specific comments on the proposals for gas market reform in our response to question 5. In Appendix 1, we have described the UK Gas market in more detail and explain why it is different from the UK electricity market.

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?

EDF Energy does not believe that the current levels of market liquidity pose a risk to securing the investment required. The levels of liquidity in the market are sufficient to ensure that the market functions effectively. The key investment decisions that we plan to make at the end of this year and in 2011, concern assets that will not be operational until 2018 and which will have operational lives through to the latter half of the century. The decisions will be driven by a view of fundamentals, rather than based on activity in the short term traded market.

Instead, we would welcome a clearer recognition of the factors that are undermining the effective operation of the existing market arrangements and that are driving the need for market reform. These include the:

- current failure of the carbon markets to provide a suitable long term price signal to provide confidence in the long term costs of CO₂ emissions;
- significant increase in the proportion of the market that is sustained by subsidy; and
- ease with which the current interventions can be, and are, changed at short notice.

Furthermore we believe it is important to examine the changes that the industry faces over the next decade and determine whether the current market arrangements remain fit for purpose. Some of the key changes facing the industry include:

- a large increase in the proportion of high capital, low marginal cost plant on the system and the uncertainty of whether a market regime predicated on short term marginal prices will remain capable of providing adequate average returns to remunerate the investment in this plant;
- a significant increase in the level of subsidised intermittent wind generation on the system, and the need to ensure that there is an adequate capacity of short term response and standby plant to provide back up for variations in wind output. The challenge will be to provide the appropriate price signals to secure the investment needed in this plant without undermining the revenue streams for other plants;
- higher levels of physical interconnection and hence market convergence with other EU electricity markets; and

- the potential impact of electricity storage, demand side management and smart technology on wholesale electricity prices.

Against this, the sector faces considerable and increased uncertainty. EDF Energy believes it is important to conduct a holistic review of the operation of the electricity market and develop a set of trading arrangements that deal with the market interventions to date and provide remedies in areas where the market has not performed as anticipated.

Question 3: Do you agree that the five issues we have highlighted are the most important?

We believe that long-term market frameworks are necessary to make the UK an attractive investment environment by de-risking policy uncertainty. Long-term clarity in UK market frameworks will help to attract long-term financing into the UK by lowering the cost of capital and enabling appropriate investment returns. We believe that reform of the market is necessary to deliver the capital intensive low carbon electricity generation and supporting infrastructure necessary for decarbonisation of the power sector by 2030, on a least cost basis. Any reform needs to respond to the changes we will see in the structure of the asset base, as well as addressing energy policy objectives.

We believe that of the five issues highlighted, the uncertainty in the price of carbon can be addressed at once. While we support the need for a holistic review of the operation of the electricity market, we cannot wait long for the completion of market reform before starting major investment in new low carbon plant. Therefore, more immediately, we need action specifically on carbon price to confirm that emissions of carbon dioxide will incur a minimum cost in the future. This will provide investors with the confidence to ensure that the next decision to build capacity will be a decision to build low carbon capacity. While EDF Energy has proposed a carbon price floor, any incentive should take into the account the carbon price and be consistent with delivering the decarbonisation of the power sector by 2030 and with meeting both the UK and EU's statutory targets for 2020 and 2050.

With regard to the other four issues highlighted:

Cost & availability of finance – We agree with Ofgem's assessment that the availability of finance is a key issue, especially in the prevailing economic climate. Any perceived uncertainties in the policy and regulatory environment are only likely to increase the cost of financing and may therefore lead to a delay in the delivery of vital low carbon generation.

Interdependence with international markets – This is an important issue but is not entirely a threat – in the long-run it should offer greater efficiency and security (e.g. the BritNed interconnector). Although the headline does not make it clear, we believe that this is really about the growing dependence on imported gas.

It is necessary to recognise that security of supply has two dimensions – physical security and economic security. Physical security can be dealt with by building infrastructure but this does not necessarily guarantee economic security.

Investment signals for peaking plant – This creates a risk that market intervention to secure sufficient standby plant will introduce further distortions. It is important that this issue is not looked at in isolation but is instead part of a holistic review.

Affordability and Fuel Poverty – We agree that it is essential that the energy infrastructure and assets that need to be developed should be delivered to ensure that consumers do not have to pay any more than they need to. EDF Energy believes that the best way to mitigate fuel poverty is to ensure that energy policy in the UK guides investors to making the most

efficient and cost effective decisions that help bring forward investment in the most affordable low carbon technologies. This will be essential to ensure that the UK maintains competitive energy supplies that will mitigate the impacts of fuel poverty and protect the competitiveness of the UK economy.

Question 4: Do you have any comments on our description of what might happen if no changes are made to the current arrangements?

In our responses to the earlier questions, we have highlighted areas where the market arrangements are not working effectively. Failure to address these issues may lead to a hiatus created by policy uncertainty, which will only serve to undermine confidence in new investment, and will in turn exacerbate security of supply concerns.

Once again, EDF Energy would stress the urgency with which policy makers need to respond, through a mixture of early confidence building measures and longer term enduring reform of the electricity market.

It should also be noted that a decarbonised electricity sector is expected to drive emissions reductions in the heat and transport sectors. Failure to take action in the electricity sector is likely to significantly compromise the carbon reduction efforts in other sectors.

Question 5: Do you believe that our policy packages cover a sufficient range of possible policy measures?

Electricity Market Reform

EDF Energy believes that the policy packages put forward cover a very wide range of possible policy measures, without necessarily identifying the specific market failures or elements of market re-design that need to be addressed. In this context, while welcoming the debate that this consultation document is intended to promote, we do not feel that the way it approaches the problem represents the optimum route for arriving at a solution. In addition to the need to be very clear at the outset about principles and objectives, we have a concern about the sheer number of combinations of market instruments that could plausibly be devised. It would be very easy, by looking at market instruments alone, to miss the optimum combination. (Please also refer to our answer to question 7)

The reason why there is such a large number of possible measures is because there are several key “ingredients” to the measures which can be combined in many different ways, all of which have many subsequent sub-combinations. Examples of these “ingredients” are:

- whether a policy, if designed to encourage low carbon investment, seeks to secure particular quantities of low carbon energy, and let the market determine its price, or to set a framework around price for low carbon energy and let the market determine its quantity;
- whether the policy is aimed at encouraging investment in particular technologies, or at encouraging low carbon investment in general;
- the extent to which the market or the Government “decides” what investments to make;
- whether the policy aims to ensure secure energy supplies;
- how it is to be administered (whether by a central agency, or regulation, or a general obligation on suppliers, or a requirement on the system operator etc);
- penalties for non-compliance (if applicable); and
- how the proposed policy interacts with existing policy mechanisms, or whether it replaces any of them.

In addition, as the consultation document clearly illustrates, policies themselves can be applied in combination.

For this reason, we do not consider it especially helpful to focus, initially, on market instruments or packages per se. Instead, we would advocate a process that starts with a thorough consideration of the principles and objectives of any change; identifies the “ingredients” (as outlined above) that would best deliver these objectives; and only then examine ways of combining them into a measure or package of measures that enables the “ingredients” to deliver their objectives.

In doing this, it will clearly be imperative to consider interactions and potential unintended consequences. For example, a package designed to promote security of supply by encouraging short-term provision of capacity through a capacity market could have the consequence of suppressing price signals in the wholesale electricity energy market, and hence reduce the incentives to invest in capacity in the longer term.

Gas Market Reform

We believe that Ofgem’s proposals cover a range of measures, bordering on light regulatory change to extreme policy changes and intervention. We do not believe the majority of policy measures are needed in the UK gas market. However, we have detailed our views under each option below.

Central Buyer of Energy

Ofgem in this option has hinted at a single energy buyer procuring energy supplies and/or infrastructure such as strategic gas storage. EDF Energy believes that the development of new gas storage facilities is required to protect the UK’s security of supply. This will help to ensure that there are sufficient supplies to meet the UK’s peak demand from a diverse portfolio. However, we believe this extreme level of intervention would undermine the current success of the commercial arrangements in the UK gas supply and storage market. It is not clear how Ofgem believes this could sit alongside commercial arrangements for that strategic facility. If this option is taken further, we would like to understand more about how these arrangements could potentially work.

The delivery of storage projects should be left to the market. This will allow for the continued operation of the competitive market and ensure that only facilities that will benefit the UK will be delivered. In order to support the development of storage facilities, developers and investors will require a stable and predictable regulatory regime with manageable risks. This includes predictable and understandable arrangements to gain access to the gas transmission system. EDF Energy does not at present support the development of a strategic storage facility centrally delivered by the Government or Ofgem. Ofgem’s analysis makes it clear that there is no evidence that such extreme intervention is warranted. In addition, this type of intervention also contravenes EU legislation aimed at promoting choice and contestability.

In terms of the retail market and a central buyer for supplies, if this model was applied it would effectively create a monopsony with one buyer sourcing energy from many sellers with ultimate buying power. This would lead to inefficient pricing and imperfect competition, which is not in the consumer’s interest.

Capacity tenders

After considering the options under this obligation, we believe such measures will ultimately impose the same level of risk on the gas market as “Package E”. This is because it would require someone to dictate what level of capacity should be sold and possibly what technologies should be built, which may or may not be the right level or type. This artificial market design could create inefficient costs to be incurred, which will ultimately be passed onto consumers. It may also create a level of discrimination in gas, as the number of storage facilities are limited and constrained to geographically suitable areas. This could give rise to economic rent to one party that has larger storage facilities proposals that satisfy all the requirements.

Furthermore, there is no guarantee that the infrastructure will be built following a successful tender. We note the example of Spain, where there were successful capacity tenders to build gas interconnection to France in order to alleviate the long-gas position in Spain. However, the successful bidders have pulled out of constructing the pipeline because of changing market conditions, and there are no guarantees that it will now be built. We believe capacity tenders should be backed up by financial penalties for non-delivery. However, we again do not believe there is a case for this level of intervention in the interests of consumers.

Enhanced obligations

We can see how enhanced obligations might force market participants to procure certain types of contract for gas supply and flexibility, whether it be in the form of storage or long-term flexible contracts. However, we believe this option could also undermine the successful commercial operation of the UK gas market.

A supplier obligation to acquire storage, similar to that which exists in Italy or Spain, will create risks for the market and ultimately for consumers. Apart from the UK being a different, more mature and liberalised market, there is no evidence that the introduction of such measures will be beneficial or will resolve the perceived problem. Indeed, we do not believe the level of current and future security of supply is a problem in the UK.

An important consideration would be how such a storage obligation would be designed. It would not be efficient to store gas unnecessarily without the power/flexibility to withdraw it when the market needed it. We believe that there should be no restriction in accessing this gas. The type of storage is also of important consideration. For example, during this past winter, the Mid-Range Storage high cycle rates helped ensure a high level of security of supply. We note that storage flexibility will be increasingly needed going forward, not just space.

In terms of a supplier obligation to increase their contract cover for longer periods of time with flexibility, it is not clear if Ofgem is implying that this would be on physical deliveries or at the NBP. Recent long-term contracts have been signed at the NBP, which has brought lots of new gas supplies into the UK. However, it is not clear how such an obligation would increase current security of supply levels given that it is NBP gas.

If the supplies are to be physical, then we would highlight that the DG Comp investigation in 2006 found this type of “destination specific” long-term contracts to be anti-competitive. Also, we believe that obliging suppliers to contract for long-term supplies would reduce the level of market liquidity and may force suppliers to move further up the value chain to secure supplies at least cost.

A well functioning liquid market will always attract gas at the right price. However, in order to better understand such a supplier obligation, it would be helpful if Ofgem was to determine what level of security the Government would like. We note that the UK already has gas storage monitor levels protecting all domestic and firm priority customers. Given that the European Gas Security of Supply Regulation is soon to be adopted, it would be helpful if Ofgem could provide its views of who should be included under “protected customers” over and above household customers.

Targeted reforms

We believe that it is only through targeted gas reforms that Ofgem can introduce reform without jeopardising the commercial operation of the gas market. We understand Ofgem’s interest in having the value of loss load to increase cashout prices in an emergency. While this has been discussed in depth over the last five years, we believe it may be time to review the arrangements again in light of the level of reliance on LNG imports. However, we do not believe it will make any difference to the availability of gas in an emergency for the reasons mentioned above, as long as cashout prices on the Continent are linked to 1.5x NBP prices. This was a concern of Ofgem’s in its Review of European arrangements in 2005, but we still have not seen any progress in this area.

The gas market in the UK is impacted by both the LNG and European markets. LNG is a global market, which may lead to the convergence of regional markets, depending on the prevailing supply and demand position. For example, when two regional markets are short, with LNG providing the marginal source of supplies, then the prices in these two markets are likely to converge as they compete for LNG cargoes. However, were one market to move to a balanced or long position, then its price would diverge, as LNG would no longer be the marginal supply.

Question 6: Do you have suggestions for variants to these policy packages?

As we have noted above, there are very many potential variants to the policy packages. We strongly believe that the starting point for any discussion of policy measures must be a clear statement of the principles and objectives of any reform, and that policy packages need to be assessed against a set of criteria that are derived from these principles and objectives. We will outline here our initial views on what these principles and objectives might look like.

Paragraph 3.37 of the consultation document summarises several key principles, namely “...to ensure that customers pay no more than they need to for secure and sustainable energy supplies whilst at the same time ensuring investors are able to make adequate returns.” There are constraints to the way in which these principles could be delivered, including the required 80% reduction in greenhouse gas emissions by 2050, and the requirement that 15% of energy supplies must be delivered from renewable sources by 2020. Below we expand on some examples of objectives that might be considered, flowing from these principles:

- Providing a specific pathway for decarbonisation - we welcome the fact that DECC has been exploring possible pathways through its “2050 Roadmap” work. If the Government sets specific targets for how the 80% reduction in greenhouse gas emissions will be delivered, then this could create a significantly more robust environment for investment than exists at present. For example, a firm commitment to decarbonise domestically generated electricity by 2030 would provide investors in low carbon technologies with far greater confidence that a market will be available for their technologies. Such a commitment would not, however, be sufficient in itself to secure efficient investment,

because it does nothing to help assure adequate returns for investors; these would still be highly uncertain.

- Seeking synergies between consumers and investors - there are some obvious win-win opportunities that could be facilitated by certain policy measures. Examples include:
 - Policy options that facilitate an exchange of electricity market price risk exposure between investors and consumers. This can simultaneously reduce revenue uncertainties for investors and reduce the risk of electricity prices rising to unaffordable levels, thereby protecting consumers.
 - Policy options that reduce the risks faced by investors in low carbon technologies would reduce the cost of capital incurred by investors. This can reduce, in absolute terms, the cost of delivering decarbonisation.
- Optimum allocation of risks - the most efficient outcomes will be achieved when risk exposures are aligned as accurately as possible with the parties most able to manage those risks. So for example, plant performance risks should properly be the concern of the plant operator; technology choice and construction risks should be the concern of the investors and plant suppliers; policy risks (including carbon prices) are best managed by the Government. There are some risks that cannot be managed at source, such as long-term fossil fuel prices, but, as noted above, there may be mutual benefit in exchanging them between investors and consumers.
- Having regard to the economics of specific technologies - for example, carbon capture and storage (CCS) technologies have a very different cost structure to most other low carbon technologies, and it is important that any policy measures do not create perverse outcomes, such as incentivising CCS to burn fossil fuels when it would not be economic to do so.
- Deliverability - there is little point in pursuing a policy measure that cannot realistically be implemented in time to deliver its objectives. Therefore, a key consideration in assessing measures will be how readily they might be implemented. This would include consideration of their complexity, the extent of the changes that would be required to the current market arrangements, legal issues, and, crucially, if we are to avoid creating unintended investment disincentives, the impact of the policies on UK energy market incumbents and potential new entrants.

Question 7: What other policy measures do you believe should be considered, and why?

As we have noted in our response to Question 5, there is a very large number of plausible measures, made up of many possible combinations of their “ingredients”. Clearly it is necessary to explore all the ways in which the principles and objectives of reform could be achieved, and, as we have noted, the list of measures outlined in the document is inevitably incomplete. Some of the “other policy measures” introduced by Ofgem in paragraphs 4.109 and 4.110, and listed in Figure 7, introduce important “ingredients” not explored elsewhere in the document and which we believe should be considered.

Question 8: Do you agree with the assessment criteria that we have used to evaluate the possible policy measures?

As a starting point we agree that the assessment criteria suggested by Ofgem appear to be sensible. They accord reasonably well with the principles set out in paragraph 3.37: “to ensure that customers pay no more than they need to for secure and sustainable energy supplies whilst at the same time ensuring that investors are able to make adequate returns.”

It is worth noting that there is no explicit criterion considering returns to investors and hence by implication, the impacts on financeability. It is possible that introducing such a criterion would encourage a focus on the investment environment in the round. We believe that this would be beneficial, since investors would look at the totality of the factors influencing the returns (and risks) to which they would expect to be exposed. Indeed, one possible unintended consequence that could arise from changing market arrangements will be to impact the ability of energy supply companies to attract funding.

Ofgem itself talks of “trade-offs” among the packages that it has proposed; the way in which such trade-offs (i.e. conflicts between the criteria used) would be resolved is not discussed and we believe that this will have to be addressed.

In general, what may become problematic in using these criteria is the lack of a strong enough sense of prioritisation between them in the event of any conflict. Such conflict, when it comes to assessing competing policy measures/packages, is inevitable and we believe that a clearly understood path towards resolving conflicts in any assessment process will be absolutely critical in order to secure general acceptance of the results of the process itself.

In relation to the individual assessment criteria that have been proposed, we have a number of specific comments:

i. Confidence of achieving supply security

We note that, at present, there are no commonly accepted criteria for measuring energy security of supply. “Capacity margin” has been widely used across the UK industry as a proxy for electricity security of supply in respect of generation, but it has remained a relatively imprecise measure. In addition, it is by no means clear that the levels of capacity margin deemed appropriate to protect security of supply in the recent past will still be appropriate as increasing levels of intermittent capacity enter the generation mix.

For gas, levels of days’ storage (or similar measures) have commonly been quoted as an easily understood proxy by which to assess security of supply. Yet there is no common understanding of what the “right” levels should be going forwards.

As a result, we believe that further work should be undertaken on an urgent basis to develop methodologies for assessing, and benchmarks for, security of supply.

ii. Confidence of achieving 2020 carbon targets through domestic reductions

We agree that seeking to achieve carbon targets through domestic actions is an appropriate basis on which to assess policy packages, given the UK’s existing long-term policy ambitions.

However, the emphasis on 2020 targets does give rise to a concern that the longer-term 2050 goal of decarbonisation may not be given enough attention and weight.

Ofgem states that “in setting and agreeing to the 2020 targets, European and UK Governments considered that the 2020 targets were not inconsistent with a long-term commitment to decarbonise the energy sector”. We agree that the 2050 target of an 80% reduction in greenhouse gas emissions (against 1990 levels) must imply significant progress having been made by 2020. However, the energy market framework should be assessed against the likelihood of its ability to drive the investment behaviour needed to meet the long-term goal, rather than what will be, in effect, an interim staging post. Otherwise, there is a very real risk of encouraging investment decisions which may help to meet 2020 objectives but actually hinder progress towards 2050 targets.

Many of the decisions needed to meet the 2020 objective will need to be made in the near future. Yet the objective of market reform should be to implement energy market arrangements that will encourage the right investments over the next 20 years, since almost complete decarbonisation of the electricity generation sector is widely accepted to be necessary by 2030. In any instance where the long-term and short-term goals come into conflict, we believe that the long-term goal must have primacy.

iii. Confidence of achieving 2020 renewables targets

The same issue about the need to consider longer-term targets rather than 2020 objectives would appear to apply to renewables. But, as Ofgem recognises, there are currently only 2020 ambitions for the adoption of renewable energy in generation, driven by the need for the UK as a whole to comply with the EU Renewable Energy Directive.

On this basis we encourage Ofgem to push for greater clarification of the specific objectives that a new market framework is required to deliver. If it is actually the lowering of carbon emissions that is the end goal of policy, then renewables should be dealt with under an energy market framework on the basis of their ability to contribute to domestic carbon emissions reduction.

iv. Risk of prices being greater than necessary

We feel that the words “than necessary” are of great importance in this context.

Firstly, it suggests an implicit acceptance of the likelihood that energy supply will increase in cost in the future, given the need to decarbonise and replace ageing assets. Secondly, it appears to highlight the need for prices to customers to be kept as low as possible, while still seeking to achieve the UK’s other energy goals.

We believe that these two points are so important that they should be made explicit and we reiterate the point that energy bills should be kept as low as possible in the context of seeking to provide energy security and to reduce carbon emissions.

In practice, bills to customers will be kept at their lowest by having effective competition and utilising generation technologies with the lowest costs, taking into account the investments required to maintain secure system operation. This means that requirements for standby generation and for network reinforcement must be factored into the assessment of costs on a technology by technology basis for competing generation types. Consequently effective market arrangements should be capable of recognising these factors and of rewarding investor behaviour accordingly.

v. Risk of dampening of innovation

We note that this criterion is defined in terms of its impact on costs, suggesting that it should already be captured within the previous criterion.

However, we believe that innovation is important for more than reasons of cost alone and on that basis are happy for this to remain separate.

vi/vii. Implementation issues; Legal issues

We welcome the fact that Ofgem has sought to include such practical implementation issues in its assessment criteria.

In particular we would choose to highlight the issue of timing. The window of opportunity to influence investment decisions against a 2020 horizon is relatively brief. Should 2020 objectives be taken as the most important driver behind the reform of existing market arrangements (with which we disagree), then implementation issues will take on even greater importance.

Finally, we note the likelihood that prolonged uncertainty over the extent and nature of market reform arrangements may in itself add to the cost of capital faced by investors. The purpose of this exercise is to try and reduce the uncertainty that market participants currently face by providing a framework of predictable change designed to deliver specific policy objectives.

Question 9: Do you have any comments on our initial assessment of each of the packages?

We have two general points to make in relation to the initial assessments made by Ofgem.

Firstly, in the case of low carbon energy, we believe that pricing has to be equitable, not only in its level, but also in the duration of its effect. If one set of generation technologies enjoys price certainty regarding the value of its low carbon nature to a certain date, but another set does not enjoy the same certainty, then not only is this inherently inequitable but it also means that investors will not be making decisions based on equally weighted factors.

Ofgem's paper includes the idea of renewable energy being purchased via auction, and specifically appears to envisage that this should apply to capacity rather than energy. This seems to lack intuitive justification, since it is difficult to place a value on renewable capacity given its typically intermittent and inflexible nature. The value should lie in low-carbon energy and that value should be assigned by way of an equitable, long-term strong carbon price, applied to generated energy.

Secondly, we would emphasise that none of the packages proposed may necessarily be a "solution". All proposals may still fail to achieve Ofgem's stated aims if other factors constrain investors' willingness and ability to decide upon, and follow, particular courses of action. The most obvious examples of such factors relate to the planning system and the existence of an adequate supply chain that is able to deliver the necessary capability, production and quality. Investors will make investment decisions on a holistic assessment of the investment environment of which such factors will necessarily be a part.

Question 10: Do you agree with our summary of the key benefits and key risks of each policy package?

In light of our responses above, we do not feel it is as yet appropriate to decide on the relative merits of the proposals for reforming market arrangements.

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 in any analysis you may have to support your views.

We believe that a successful set of market reform measures, in the context of providing low-carbon, secure and affordable energy, will necessarily take a holistic approach to market arrangements in the UK. Investors and potential investors will take such an approach when assessing the potential for investing in the UK.

Regarding the gas market, we believe that the UK does not face the same near- to medium-term challenges as for the electricity market. This helps to explain the current industry consensus that non-market-based interventions, for example the introduction of strategic storage, are not necessary and, by distorting the market, could be counter-productive.

We also have some specific comments in relation to the proposals to alter gas cash-out arrangements in Appendix 1.

Question 12: Do you agree with our assessment of the timing for important investment decisions?

We believe that the period around 2012 and 2013, as stated by Ofgem, will indeed cover a series of investment decisions that will be critical to ensuring future secure and sustainable energy supplies. However, we believe that Ofgem is underestimating the extent of investment decisions that will in fact need to be made in advance of that time.

In this regard, we note that Ernst & Young has recently estimated that the value of the investment decisions expected over the period 2010-2012 is approximately £35.5bn–£48.5bn, based on the need to meet the UK's energy goals and to stay on track in meeting its 2020 objectives. Ernst & Young highlights that the key variable within the value range it gives depends on the investment decisions relating to nuclear generation. It also stresses the need for investment decisions to be taken in the period 2010-2012.

EDF Energy has publicly stated its intention of having the UK's first nuclear new-build capacity operational in 2018, with first concrete for the first plant expected to be poured in 2013, subject to the right framework being in place. In order for this to happen, significant investment decisions on that first plant will have to be made at the end of 2010 and in 2011.

As a first step, we believe that it is critical that the Government moves quickly to reinforce its preference for low carbon investment. EDF Energy believes that a clear long term signal on the cost of CO₂ emissions, applying from, say, 2018, can be this first step in providing us with the confidence to continue with our plans to build low carbon capacity. It could be introduced earlier, but initially set low to provide investor confidence, and increase at the end of the decade to reach the required level when new nuclear and fossil fuel with CCS come on line. However, we recognise that action on carbon price does not replace the need for market reform. We continue to support the need for market reform and will work with the Government to develop enduring arrangements that are capable of providing secure low carbon electricity at affordable prices.

The implication, therefore, is that the “window of opportunity... to implement any policy measures that may be necessary to make sure that investment takes place in a timely fashion” described in Chapter 6 of the document is actually shorter than appears to be assumed by Ofgem.

On this basis we would encourage Ofgem and any other parties responsible in the future for the addressing the issue of energy market reform to move forward as swiftly as possible and with as clear a timetable as possible.

Question 13: Do you believe that early actions should be considered?

We believe that the window of opportunity to make the investment decisions needed to meet the UK’s energy goals is relatively short. On this basis we believe that early action should be considered urgently, taking into account the need for due process to be observed.

The introduction of a long-term carbon floor price mechanism falls into this category. The current EU ETS mechanism does not provide a strong enough price signal for investment in low carbon technologies. We believe that long-term carbon price certainty is essential to enabling sustained investment at scale in low carbon generation plant. If the value of, and need for, a carbon price floor is agreed, this should be adopted as soon as possible but implementation need not be instantaneous, as long as a clearly defined timetable for implementation has been outlined in line with when new plant will become operational.

As a priority, it is also necessary to agree the:

- key principles of what we expect market reform to achieve, including the scope of the changes;
- principles on which we wish to base the design of the future market; and
- criteria against which we can assess the effectiveness of proposals.

To this end serious consideration must be given to making more explicit the relative importance of the UK’s energy policy objectives, usually summarised as carbon reduction, security of supply and affordability. The attractiveness of the UK for investment can be enhanced by reducing policy uncertainty; yet at present the ranking of these policy objectives remains somewhat opaque.

Once this groundwork has been undertaken, it may then be appropriate to consider further early actions. Any early action considered must take into account the need to develop a stable, long-term market framework, ideally via an evolutionary approach. We believe that only through long-term clarity on the market framework will the UK be able to attract the long-term financing required, on the scale envisaged by Ofgem, to meet our common energy goals.

“Early action” may not necessarily entail changes actually being implemented in full by, for example, Ofgem’s critical period around 2012 and 2013. Instead it could mean a firm commitment having being given to introduce particular measures by a certain date.

Finally, as an early action, we believe it would be appropriate for Ofgem to support and potentially sponsor industry research into the true level of back-up capacity that may be required in a world of low carbon generation. At present we do not see any industry consensus on what the “right” level of capacity margin should be in such a future or indeed whether capacity margin is the appropriate metric to focus on going forwards.

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?

Ensuring that the UK has low carbon, secure and affordable supplies will depend on reform of the current market arrangements to ensure that they are “fit for purpose” in delivering capital intensive but low marginal cost, low-carbon generation and the requisite supporting infrastructure. Only in this way, we believe, will the substantial decarbonisation of the power sector by the 2030s be achieved on a least cost basis.

However, we recognise that a proper, holistic review of the market and implementing reform proposals may take time. We therefore believe it is necessary to provide early confidence building measures that are consistent with the energy policy objectives. This could be achieved by providing a commitment now to legislate for a long-term framework. This is essential in establishing an appropriate long-term framework for an incentive mechanism or obligation consistent with power sector decarbonisation by 2030.

The legislation must establish the framework at the earliest practicable date, but implementation may be deferred, activated at a future date specified in the legislation. For example, an incentive mechanism or obligation could be linked to a requirement to deliver low-carbon power at a future date, say 2018.

Appendix: Further information on our views on the UK Gas Market

Why is the Gas Market Different from Electricity?

The UK gas market is a mature market that is in potential decline. This can be seen in National Grid Gas' (NGG) most recent Ten Year Statement (published in 2009), which forecasts total UK gas demand to remain static varying between 1,037 TWh to 1,073 TWh during the period 2009 to 2018. This compares to the electricity market, which, whilst also a mature market, is experiencing significant transformation and growth as new generation sources come on line and consumers switch from gas to electricity and renewable sources for their energy requirements. As recognised by Ofgem within Project Discovery, the UK can only meet its environmental targets if gas demand over the period analysed were to decrease. Given that the UK Government has set itself legally binding carbon targets for 2050, this further supports the view that gas demand is in long term decline.

The UK gas market also benefits from an unconstrained system that does not require as significant investment as that required in the electricity system. This again reflects the different fundamentals of the markets, with gas in decline compared to electricity; however, this is also driven by the differences in the historical design of the systems. Traditionally the UK system was designed for the transportation of natural gas from Morecambe Bay (Irish Sea) and later the UK Continental Shelf (North Sea) to the centres of demand – the South East and Midlands. The UK has maintained a position as a transit country for gas which requires a significantly more reinforced capability. This can be noted by the density of pipelines away from major population centres. New sources of gas supplies are coming on line closer to the centres of demand, most notably seen by the increase in supplies being delivered through Bacton and the Isle of Grain – both located in the South East of the country. This compares to an electricity system where generation was more closely located to demand than gas supplies. Today, however, there is a significant increase in generation at the extremes of the system – most notably Scotland, which requires a significant investment in the transmission system to accommodate these new supplies.

Gas also differs from electricity in the nature of the product that is being supplied. Gas can be stored – both in dedicated storage sites and within the system by increasing pressure – to be released at a later time to coincide with demand. This allows a degree of flexibility that enables gas to be balanced on a daily basis and seasonal basis with NGG packing the line going into the winter months. However, electricity cannot be stored as efficiently and so supplies have to match demand in real time. This creates different requirements and roles for the system, its operator, generators and supplies to consumers.

Gas Cash out Arrangements

EDF Energy believes that the current emergency cash out arrangements work, and there is no evidence from the consultation paper published that there is a need to reform these arrangements.

We would also note that one option would also be to keep the market open throughout an emergency and for the value of loss load to feed into the cash out arrangements. We would note firstly that the On the day Commodity Market (OCM) currently remains open throughout an emergency, but NGG's role as residual balancer is suspended from a declaration of a stage 2 emergency (unless it is a Critical Transportation Constraint emergency) as it is now in a command and control position. Therefore prices in this market can increase to attract additional supplies from all available sources including demand-side. Given that National Grid has withdrawn from this market and so it will take no action to set the cash out prices (unlike the current non-emergency arrangements), then the only way for this market to feed

into cash out prices would be if they were based on market participants' actions. However, utilising this market to set cash out prices could open up the opportunity for any market participant to game the market and extract economic rent. This has been an issue raised by industry over several years, which Ofgem appears to have recognised.

The current arrangements for gas have undergone significant reform in recent years, which have all been led by Ofgem. Most recently the arrangements were changed to allow customers who have provided demand side response during an emergency to claim for any additional costs (financial or opportunity) that are in excess of the frozen cash out price. These costs are then smeared across Shippers who were short in the emergency. Effectively therefore Shippers are exposed to these costs, and so appropriately incentivised to take all available actions to help to mitigate the emergency. Ofgem's proposals appear to suggest that emergency cash out prices should reflect the cost of demand side response during an emergency; however, it is not clear how this could be valued until after the event, without the risk of consumers gaming the system by setting artificially high prices. This would require post event scrutiny to ensure that system prices were reflective of "costs"; however, this is effectively the current regime.

EDF Energy
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