Ofgem's Project Discovery – Options for delivering secure and sustainable energy supplies

Response from International Power plc

March 2010

International Power plc (IPR) is a global independent power generation company with interests in over 32,000 MW of generation capacity in over 21 countries. This includes approximately 5000 MW of plant in the GB market where in partnership with Mitsui & Co., it owns and operates the coal fired station at Rugeley, Deeside Power CCGT, Saltend Cogeneration Plant in Hull, First Hydro Pumped Storage Stations at Dinorwig and Ffestiniog in North Wales, Indian Queens Peaking Plant in Cornwall plus a share in Derwent Cogeneration plant. These assets represent a total investment of approximately £1.5bn in the GB market and a 7% market share making IPR one of the country's largest independent power producers.

General Comments

Since the publication of the Project Discovery Consultation we have seen two further relevant papers released: The Conservatives' energy manifesto (including proposals for electricity market reforms) and the Energy Market Assessment (EMA) produced by DECC/Treasury with the Budget 2010. There appears to be consensus among politicians, civil servants, and the regulator, that changes are required to the market arrangements to support energy policy objectives.[1]

The EMA has set out an indicative timetable for review and implementation, with the expectation that DECC would lead this work following an election expected in early May. Presumably this means that Ofgem's Project Discovery process has now been superseded, with the useful elements of this project being available to inform DECC's review.

Notwithstanding this background, in this consultation response we have taken the opportunity to provide some initial views, particularly on the individual reform measures outlined by Ofgem, which may form part of the DECC led review.

[1] Although we note that each of these three reports contains subtly different objectives – consensus and clarity would be welcomed

We note the press coverage in relation to Discovery, and the perception amongst many observers that the report somehow indicated an end to market-based solutions for the GB energy sector (due to the inclusion of the Central Energy Buyer model). We are somewhat reassured by subsequent Ofgem statements on this point and in particular, clarification that this model is not supported.

We strongly believe that the role of markets is as important as ever in delivering efficiency, transparency and diversity. Any policy intervention, affecting market operation, requires careful consideration and full impact assessment. A number of the proposed interventions actually represent subsidies to specific technologies or groups of technologies. Any subsidy will distort the underlying market and consideration should be given as to its the impact on the wider market and asset values. Where subsidies are required to meet policy objectives, we favour a targeted and transparent approach. This will reduce potential distortions and communicate a clear cost of meeting the objective, which will promote effective capital allocation.

We recognize that Ofgem has focused its analysis in the consultation document on key issues relating to investment and security of supply. Affordability aspects are to be covered in a future report. Similarly, at the Ofgem seminar on 16th March, Ofgem quoted the "desired objective" as being "secure and sustainable supplies". We assume here that sustainability is explicitly represented via assumed achievement of the UK's self-imposed carbon budgets, as well as binding EU renewable targets.

We are concerned that Government commitment to these targets places undue stress on the balance between the three traditional energy policy objectives. It has also – unfairly in our view - cast doubt on whether "the market can deliver". The market, coupled with an EU-wide carbon trading scheme, may understandably not fully resolve the UK's unilateral approach to carbon reduction, and cannot blamed for a lack of renewable build that has been due to a variety of non-market constraining factors.

Further, there is little understanding amongst consumers of the costs that they will face in meeting these policy objectives. Ofgem's further work on this aspect is a critical part of the debate. We trust that Ofgem will address whether achievement of binding carbon reduction and renewables targets (presumably at any cost?) is actually in the interests of customers. This work on costs is a significant input to the wider debate on the objectives of market reform, and the relative merits of the available options.

Summary of views

As indicated above ***IPR is in favour of market solutions*** as the basis for delivery of policy objectives. The key interventions to date have been the Renewables Obligation and the EU Emissions Trading Scheme. These have worked relatively well, with the EU ETS in particular interfacing effectively with energy markets. However, as renewables volumes rise, this subsidy can be expected to start to undermine carbon and wholesale price signals for non-renewable generation.

Likewise, further piecemeal interventions (e.g. a nuclear obligation) will reinforce this effect. Whilst initially appealing for policy-makers, it must be recognized that the combined impact of a range of subsidies and ***interventions will necessarily distort the underlying energy market***

This simple truth may not be too concerning if the sole objective is achievement of low carbon targets. However, it can be damaging to security of supplies, and therefore to customers. Specifically, it is recognized that ***conventional plant will have a crucial role to play*** in "backing up" wind generation, and ultimately securing supplies. As their generation volumes are displaced by renewables, and their load factors fall, the economics of continued operations becomes more challenging. If at the same time, energy prices are negatively impacted as a result of multi-layered out-of-market subsidies, this is likely to artificially hasten the closure of such plant, precisely when its capacity is needed.

This highlights the potential for unintended consequences in pursuing specific policies that "pick winners". For market reforms to be effective, they need to ***fully consider the needs of the whole market***. Consideration of subsidies therefore requires rigorous impact assessment, and capacity markets, if introduced, should remunerate all types of generation rather than being targeted at a sub section of the market.

We also view the proposal for a carbon price floor to be particularly damaging. This is a clear subsidy and we are concerned that the level of subsidy required to target specific technologies such as nuclear or CCS plant would lead to a floor price being set at artificially high levels. Therefore any debate over the merits of a floor price must practically examine the level required to achieve the desired outcome, and then the consequential impact on the rest of the market, UK competitiveness, and the consumer.

We provide overleaf specific responses to the prescribed questions in the consultation document.

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

We agree that the current arrangements have historically delivered and continue to deliver security of supply. We also believe that the medium term outlook now looks comfortable, at least to 2020. Indeed Lord Hunt has stated that: "There is considerable building activity. I am aware that 2.5 GW of power generation has recently been commissioned. A further 10GW is under construction and a further 11 GW has planning consent. I am confident that we will have the replacements necessary for those plants that will have to close. To suggest that the lights are at risk of going out in the next decade is completely wrong" [2].

Whilst a range of concerns are highlighted in the report, which raise questions over the ongoing suitability of the current market arrangements, the primary driver for changing the market arrangements seems to be to meet the challenging renewables and carbon reduction targets set by the Government and the EU. There are clear tensions and difficulties in delivering low carbon generation, security of supply and affordable energy. Clarity is required on whether priority is to be given to the carbon targets, security of supply or costs to consumers.

The current under-delivery of low carbon generation can largely be attributed to planning, transmission access and uncertainty over Government policy rather than the current market arrangements. The government has, for example, only relatively recently confirmed support for further nuclear power and introduced changes to the planning arrangements to facilitate new nuclear build.

The 2020 CO_2 targets could largely be met through increased investment in CCGTs to replace the opted out coal, ageing nuclear plant and reduced output from coal plant without SCR. In the much longer term, as CO_2 targets become more challenging 'doing nothing' may indeed not be an option, but we feel that Ofgem is overstating the risks in the period leading up to 2025.

We recognize that the EU's 15% renewables target is particularly challenging from where we are now. That it is challenging is not a failing of the market rather a failure of lack of consistent policy, and the impact of practical constraints on renewable build in the UK. We are not advocating further intervention to meet the 15% target; the new planning initiatives (the National Policy Statements) and reforms to the transmission access arrangements should address these practical constraints.

In summary the current market arrangements remain flexible and robust to a wide range of scenarios. Incremental change where justifiable may be required, but a radical overhaul of the market arrangements is unnecessary in the medium term and could be counter-productive.

[2] Utility Week, 25 March 2010

***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?**

IPR invests worldwide in generation projects. Amongst other things, a clear and stable market framework is desirable to attract scarce capital towards UK investments.

Although not strictly a question of market arrangements, market structure has the potential to act against the interest of consumers. In particular, the increasing levels of vertical integration and "internal balance" of the Big 6 has impacted on wholesale market liquidity, which in turn creates artificial barriers to entry.

Therefore any potential alteration to the market arrangements needs to be carefully considered in terms of any potential further impact on competition in the market. New entrants and independents play a vital role in providing a competitive edge to the wholesale market. They provide valuable additional capital and innovation. It is more important than ever that these companies are not further disadvantaged as a result of market design.

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

Issue 1 – Investment: We agree that there is the need for substantial levels of investment to meet the EU 2020 targets and the higher, self-imposed UK carbon reduction targets – although it is fair to say that looking forward into the longer term there is always a significant investment gap to be filled. Whilst initiatives to assess whether the current market is suitable are necessary they can only add to regulatory uncertainty until changes are finalized and stability provided. Therefore, it is vital that any potential changes are properly and thoroughly considered to avoid unintended consequences.

Issue 2 – Carbon price uncertainty: IPR agrees that uncertainty over future carbon prices provides an impediment to investment in low carbon generation although we note recent announcement to build new nuclear power stations[3]. The price uncertainty is not a market failing, rather a failing on the part of policy makers to set caps that extend to investment timescales.

This uncertainty has led to other initiatives being enhanced that subsidise low carbon and renewable generation. We agree with Ofgem that these undermine both the carbon price and the market mechanism and increase complexity. This means that carbon prices will not alone trigger desired levels of investment in low carbon generation, perpetuating the apparent need for subsidies and market reform.

[3] Horizon Nuclear Power (a JV between RWE and E.on) announced on 30th March 2010 that it will build a new nuclear power station on Anglesey by 2020. In October 2009, a consortium of GdF, SSE and SP secured an option to purchase land from the NDA for the development of a new nuclear power station at Sellafield

In a sense, "we are where we are" but we need to learn these lessons in making proposals for future reform.

More certainty over the long term future downward trajectory of the cap and the duration of the carbon reduction scheme would ideally assist both market price formation and investment decisions in long lived assets. If this were known, organisations could make their own assessment of future carbon prices. Before a subsidy is considered, this would be the preferred mechanism for stimulation of low carbon investment, and one which over time could allow for subsidies to be reduced.

Based on the above, IPR does not support the introduction of a carbon floor price. It will further distort the carbon pricing environment, and impose additional market-wide costs. Should a subsidy to low carbon generation be considered a policy priority, we would favour a more bilateral and transparent approach to providing support to related projects. This would have the advantage of clearly communicating to the market and the consumer the degree of support required for nuclear power and CCS generation.

Issue 3 – Price signals: We do not consider that changing the cashout arrangements is a key issue especially in an environment with more generation unable to respond to any such stronger price signal.

We have seen numerous modifications to either weaken or strengthen the cashout price in electricity with a clear preference from Ofgem towards weakening the signal in order to protect smaller suppliers.

Although we recognize that cashout prices may not be considered to be cost-reflective when the system is under severe stress (through the exclusion of priced action related to demand or voltage control for instance) on balance we think that the current methodology for price formulation is reasonable.

Issue 4 – Increasing dependence on international markets: The UK has responded well to the known future dependency on imported gas by building storage facilities, LNG terminals and gas and electricity interconnectors. Without the low carbon targets and without the subsidies being offered, the UK would choose a route of increasing dependency on imported gas rather than be faced with assumed capital costs for onshore wind of ~£1200/kW, offshore ~£2,800/kW[4] and £2000/kW[5] for nuclear compared to a gas construction cost of ~£600/kW.

Whilst it is important to understand and mitigate these dependency risks, IPR believes that these risks are exaggerated in the Ofgem report. Measures to increase resilience may be more cost-

[4] Energy market Assessment economic of low carbon generation [grammar]

[5] Ofgem's Project Discovery model

effective in providing this mitigation, providing the capacity to benefit from any upside in the event that gas prices trend to low levels over the long term.

Issue 5 – Costs to consumers: The drive to a low carbon economy will inevitably push up prices to consumers and the UK carbon reduction and renewable targets may push up these costs at a higher rate initially than elsewhere in the EU. Government must assess and consult on the cost of delivering the low carbon targets to establish if society is willing to pay to meet the targets. Affordability should be addressed via a coherent government policy, for example maintaining a competitive market, social policy to address fuel poverty and education on reducing consumption. These issues should urgently be considered.

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

Based on current build rates, we agree that renewable investment might not be sufficient to meet the challenging EU 2020 targets. If the market arrangements are altered to make them more sympathetic to renewables, we doubt it would significantly increase the rate of renewable deployment unless the much bigger issues of obtaining planning permission, access to the transmission system and construction constraints are more rapidly resolved. The introduction of National Policy Statements and the proposals for 'Connect and Manage' under Transmission Access Review have now begun to address some of these issues.. The current queue of renewable projects awaiting a connection suggests that sufficient market incentives are already in place and that the current market arrangements are not constraining the development of wind.

Increasing dependence on imported gas is an inevitability given the declining UKCS and this suggests the UK will require more gas storage. The market has delivered growth in gas storage with a new site at Aldbrough, developments at Holford, Stublach and Caythorpe as well LNG terminals at South Hook, Grain and Milford Haven in response to price differentials. If the rationale for further storage is economic then it would appear that the market will invest. We do not support strategic storage as this would undermine the efficient deployment of capital.

CHAPTER: Four

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

From the packages presented, IPR views the most material policy options presented in the Ofgem report as a carbon floor price, a separate market/trading mechanism for renewables and capacity tenders. The other options discussed such as improving price signals, incentives on suppliers/ the SO are less significant and may have only negligible impact on security of supply and sustainability.

Any measure needs to be considered extremely carefully. For instance, policy interventions designed to encourage investment in new low carbon generation, to the levels required to meet the 2020 targets and subsequent UK carbon budgets, may disadvantage incumbent assets.

Furthermore, as Ofgem notes under Package D, additional financial support for low carbon generation could drive down electricity prices undermining investment in conventional generation. With an increasing amount of low carbon inflexible generation on the system whichever package or variant is adopted, there will be a greater need for firm, flexible, backup generation which requires sufficient returns to justify ongoing availability.

Therefore, in implementing new policy measures, the position of incumbents must be recognsied , and the value of firm and flexible plant should be properly rewarded.

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

There are clearly a large number of potential packages, depending on how many of the various measures are introduced and in which combination.

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

Our preferred option is to focus effort at EU level on agreeing caps beyond 2020.

Taking the range of measures set out in the consultation, there is potential merit in exploring capacity markets as a longer term reform option.

In the short/medium term, we think obligations may be required on National Grid, or at least more clarity around its remit in procuring reserve such that longer term contracts can be awarded.
The reasoning is given elsewhere in this response.

CHAPTER: Five

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

Broadly. However we question whether the achievement of the renewable targets should be viewed as a primary objective whatever the cost. Whilst clearly important, we would anticipate carbon reduction targets to take priority.

We also think that there should be an explicit objective in terms of arrangements being adequate for conventional and backup plant, and perhaps one relating to maintenance of competitive markets.

We note that the cost of achieving these policy objectives is not considered. This should be rectified.

Finally, options should be assessed against the requirements of the EU's Third Package, and the requirement for greater harmonization of markets across the region. This may rule out a number of potential proposals.

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

We have provided comments below on the individual proposals rather than the packages themselves as we do not see the packages as 'fixed' combinations and do not view some of the proposals contained within the packages as necessary or appropriate.

Carbon Floor price

IPR does not support the carbon floor price proposal. We believe this subsidy would be highly market distorting, potentially very costly, and also difficult to implement.

We recognize that uncertainty over carbon caps beyond 2020 can affect investment decisions, however, the delay in agreement on these caps does not justify an intervention of this nature.

There is a clear risk that setting a floor price could generate windfalls for low carbon generators. At current fuel cost levels, the gas price will determine the wholesale price and whether support for carbon is needed. If gas prices are sufficiently high, a carbon floor price will be superfluous.

A low gas price environment will result in calls to raise the floor to provide a sufficient level of subsidy. There is a real likelihood that the Government will always being playing catch up in adjusting the level of the floor price in order to meet the low carbon targets. This highlights another drawback of this approach in that changes (or potential changes) to a floor price will create significant uncertainty for market participants and undermine investor confidence.

Ofgem suggests that the floor price could be introduced in 2020 but signalled well in advance. If the floor price is set higher than the prevailing traded price, this will add further cost to coal plant contemplating fitting SCR and may lead to closure of opted in plant or a decision to opt for derogated hours. From a security of supply viewpoint this would be unwelcome.

As highlighted in the HMT/DECC Energy Market Assessment, more certainty over carbon price will not in any case deliver investment in low carbon generation. Other options need to be considered, which are likely to make this proposal redundant

IPR believes if there are going to be further subsidies for low carbon generation then they should be transparent, and designed to minimize the impact on the rest of the market.

Changes to price signals

Having seen numerous BSC modifications approved by Ofgem, designed to dampen the electricity cashout price signal, we are somewhat surprised to see cashout prices return as a security of supply issue within this paper.

Whilst we recognize the issues that Ofgem raises in relation to appropriate pricing of actions taken at times of system stress, we do not believe that any strengthening of the price signals will necessarily drive new investment.

Firstly, a balance needs to be drawn between the pure cost-reflectivity (including the value attached to supply by customers) and the potential impact on smaller generators and suppliers of very penal (ex-post) prices. This is particularly relevant in the gate closure period when market participants have no ability to mitigate their exposure, should a generating unit fail for instance.

Secondly, if prices were strengthened and spikes occurred, experience tells us that this is likely to attract attention from regulators and policy-makers, inviting intervention to dampen or limit prices.

Thirdly, and most importantly, a peaking generator could not rely on the possibility of price spikes (or an assurance that the rules wouldn't be changed to avoid them) to provide an income stream. New peaking plant would not be built on the basis of recovering their costs for short periods of operation. IPR does not consider changes to cashout prices to have significant relevance to future security and sustainability.

Improved ability for the demand side to respond

We note the ongoing developments in this area being developed separately from Project Discovery. Demand clearly has an important and growing role to play in achieving security of supply objectives in operational timescales. Technological developments will drive this change alongside market arrangements. Any demand side capability should be clearly demonstrated and subject to performance criteria to ensure that it is truly delivering.

Supplier Obligation

Requiring suppliers to demonstrate that they had sufficient contracted supply to meet their future energy demand (Ofgem suggests 3 to 5 years) would not sit well with a competitive retail market, and does not look to be an effective approach.

Defining a supplier's obligation is practically difficult. Presumably suppliers would only be required to contract for their known future customer commitments at any point. This may reflect a tapered profile, perhaps going out 3 years. Requiring suppliers to demonstrate that they have contracts or generation capability in place to meet this profile should be relatively

straightforward (can probably almost entirely be met by the generation arms of the large suppliers), and does nothing to incentivize long term new investment.

Furthermore, if longer term obligations were enforced, beyond known customer volumes for individual companies, any obligation would likely result in suppliers building more generation thus increasing the degree of vertical integration. This could be damaging to competition and independent generators.

In any case, IPR believes that suppliers already have an implied obligation to meet their contractual commitments via the current market arrangements. We do not see the need for a further obligation.

Enhanced Obligations on the SO

There is potential for the SO to be given more freedom to contract for back-up and flexible generation in the longer term and for the benefits of this contracting to be assessed over the duration of the contract rather than being determined on a year-by-year value for money basis. A specific obligation would seem excessive.

Obligations on gas fired generators

Whilst this obligation could be applied at sites that have the land space to install storage tanks, it would be at considerable cost for which a compensation mechanism is required. Mandated burning of fuel oil post 2015 is likely to require derogation to the higher NOx emissions standards that come into force in 2016.

Centralized renewables market

The centralized renewables market has been proposed to address the cashout price risk faced by renewable generators. Assuming this is the key objective in relation to this option, then it would seem far simpler to exempt wind generation from the current imbalance cashout mechanism.

Further, we struggle to see how a daily market for wind would help independent wind generators to gain investment support compared to the current method of sale of output for wind unless there was a secondary, longer term market around the daily price. This, however, would increase complexity and transaction costs for these generators.

Renewables tender

A renewables tender would at least provide certainty over the level of subsidy to be paid; given the current high subsidy levels this may only have a small beneficial impact on the deployment rate for renewable generation. We doubt it would make a noticeable difference due to other issues outside of the market arrangements which have already been discussed that are

preventing growth. As recognized by Ofgem, the possibility of a tender mechanism may lead to a hiatus until the new policy is finalized.

Introduction of a capacity tender would of course mean the demise of the Renewables Obligation and we would have major concerns with transitioning away from this scheme. Whatever the merits of tender process, this change would cause major disruption to the renewables market, for minimal benefit.

Capacity tenders

The introduction of capacity tenders would represent a material change to current market arrangements.

The principle of a capacity market has its attractions. Properly devised, it could support security of supply objectives both in relation to long term supply and demand balance, and in terms of meeting short term operational challenges.

However a capacity market could take many forms, and if progressed, the detailed design is critical in effectively achieving policy objectives. Ideally it would encompass all capacity (all technologies as well as new and existing capacity) in order to support the twin security of supply challenges set out above.

Certainly when compared, for example, with the proposal for a carbon floor price (i.e. a subsidy), capacity markets have advantages in their direct effectiveness and transparency.

We can anticipate the attraction (from government's perspective) of issuing targeted capacity auctions for specific technologies or even locations. However, from a market perspective this is likely to deliver poor value to the consumer. Whilst it would improve certainty for investors in new plant covered by such tenders, this approach would increase distortion of the energy market and in general is too 'interventionist' to be compatible with market principles.

Central Energy Buyer

IPR views the idea of a central energy buyer as a significant retrograde step that looks to be incompatible with increasing EU liberalization. We understand that Ofgem does not support this option and it has only been included for the sake of completeness.

We note also that DECC does not support this approach.

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

See answers above.

***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.**

We have provided comments on the individual elements in the answers set out above.

IPR regards A and B in their entirety as unworkable. A separate market for renewables or a renewables tender will make only a small difference to improving the deployment rate for renewables. Package D (or at least elements of if) has merit, depending on detailed design. Package E is rejected.

CHAPTER: Six

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

No. We believe that security of supply risks are manageable until at least 2020 (rather than until 2015). We also note that some of the urgency highlighted in the report is based on the need to achieve the 2020 renewables objective. We see this as a secondary objective.

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

Early action is required to provide clarity on whether priority is to be given to the carbon targets, security of supply or costs to consumers.

Otherwise we do not anticipate that urgent action is necessary. We support the views in the Energy Market Assessment that supplies look secure until at least 2020 within the current market framework, but that there are some risks in the following decade.

IPR believes that government, Ofgem and the industry should take time to develop the right solutions to best incentivize new investment and manage new operational risks without distorting the traded market, or disadvantaging existing plant.

***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?**

Very much on a case by case basis. We believe some of the issues to be unworkable, for example supplier obligations in a competitive retail market.