Annex A

Call for Evidence – Summary of Response

The Call for Evidence closed on the 28th June 2012, and elicited around 70 responses. These came from a broad spectrum of stakeholders, including generators, representative bodies, trade associations, suppliers, NGOs, technology providers and gas producers. The following provides a summary of the key arguments raised in the responses to the 6 questions asked in the Call for Evidence and detailed below:

i. What are the main strengths and weaknesses of gas generation in helping deliver a secure, affordable route to decarbonisation through to 2020 and then by 2050?

ii. What role can gas fired generation play in the future and what level of gas generation capacity is desirable?

iii. What are the key factors driving the economics of investing in new gas-fired power generation and how are these factors likely to change?

iv. What barriers do investors face in building new gas generation plants in the UK? What are the key regulatory uncertainties that may prevent debt and equity investors making a final investment decision in gas generation and supply infrastructure?

v. Are there any policy issues that need to be addressed beyond the Government's proposals for the capacity mechanism and EPS?

vi. Given a continuing role for gas and the potential for increased volatility in gas demand, to what extent is gas supply and related infrastructure a barrier to investment in gas fired generation? What impact will unconventional gas have on the case for investing in gas generation and supporting infrastructure?

General

1.1. The majority of respondents considered that gas generation is, and will continue to be, of key importance in the electricity market. Respondents placed particular emphasis on the need for gas to balance increasing levels of intermittent and inflexible generation on the system.

1.2. Some took the view that gas can play a role in early decarbonisation, given it produces lower emissions than coal. Many, however, did express the view that, in the medium to long term, a significant contribution of electricity from unabated gas would make it more difficult to meet climate change targets.

1.3. Some respondents stressed that over-reliance on gas could leave the UK more exposed to price volatility and global gas prices, and argued strongly against any growth in gas

capacity. Most respondents at least highlighted that price volatility needs to be addressed, even if they supported an increase in gas generation on the system.

Strengths and weaknesses of gas generation

1.4. There was general consensus on the strengths and weaknesses of gas generation. Respondents considered strengths as including:

- a proven, well-established technology;
- low capital costs of any generation;
- low risk and trusted by investors;
- a flexible source of generation, well-suited to helping balance a system increasingly serviced by inflexible and intermittent sources;
- around half the carbon emissions of coal, and significantly less emissions of localised pollutants (SOx, NOx, etc);
- short construction time, and a technology that has responded relatively quickly to changes in conditions, such as greater demand;
- flexibility in the location of plant, and notably that it can often be built on sites with existing infrastructure (e.g. old coal/oil station sites);
- important role in providing ancillary services; benefits from a well-functioning and liquid gas supply market; and,
- ability to retrofit Carbon Capture & Storage (CCS) in the longer term.

1.5. Respondents considered weaknesses as including:

- unabated, it has higher emissions than nuclear and renewables;
- cost of gas has increased wholesale electricity prices significantly in recent years;
- greater reliance on gas will reduce diversity of supply; potential short-term price volatility;
- over-reliance on gas will make it difficult to decarbonise by 2030 and, in the longer term, may affect our ability to meet 2050 targets;
- and, a lack of proven flexibility where CCS is attached.

Key factors driving economics

1.6. Virtually all respondents noted that the current economics of gas plant, measured by clean spark spreads,[1] are insufficient to drive investment in plant now, particularly as there are very high capacity margins. However, it was considered that, with capacity margins expected to tighten over the next few years, this should improve.

1.7. Respondents also considered the following key factors as among those driving the economics of gas generation:

- spreads and predicted revenue over the life of the project, including the impact of more intermittent generation on load factors;
- forecast capital and operation and maintenance costs;

[1] A measure frequently used to assess the profitability of gas plant is the theoretical gross margin of gas plant, calculated as the difference between the price achieved from selling a unit of electricity and the cost of the gas fuel used to produce that electricity plus the cost of the carbon emitted during the process.

- political and regulatory risk;
- cost of gas compared to coal; demand outlooks;
- wholesale prices, both gas and electricity; and,
- charges.

1.8. A number of respondents also raised the particular issue of liquidity and the view of forward prices in supporting investment and finance prospects for independent generators.

Barriers to investment

1.9. Respondents identified a number of different barriers to investment, although not all respondents felt there actually were significant barriers. The most widespread response to this question was on the currently low clean spark spreads and the regulatory uncertainty. Respondents, generally, called for more clarity on the details of the Capacity Market as soon as possible, with most supporting the proposal in theory.

1.10. A number of responses to the Call for Evidence stated that uncertainty around the level of future spreads is making such investment decisions more difficult for developers. Further, responses suggested that regulatory uncertainty is making it more difficult for developers to anticipate the future power market conditions under which gas plant will operate. In addition, many investors suggested that the pace and extent of the roll out of low-carbon generation is difficult to predict, and thus the extent to which gas generation will operate in a low-carbon electricity market is difficult to gauge.

1.11. A number of other factors that act to constrain investment in gas generation assets have also been identified by developers and financiers, including specific issues for independent generators

1.12. Other barriers highlighted included:

- regulatory and policy uncertainty more generally (including over the Emissions Performance Standard (EPS) and how it may be adjusted in the future);
- constraints on credit and access to financing;
- planning procedures;
- revenue uncertainty in the longer-term with more inflexible and intermittent generation, which has been exacerbated by recent experiences in other EU countries, for example, the impact of renewable energy on gas plant load factors; transmission charging; and,
- mixed messages from Government regarding the importance of gas in the energy mix.

Policy issues that need to be addressed

1.13. A large number of respondents said there was no need for specific additional policies for gas generation, but that the Strategy should focus on bringing together the existing and proposed policies and providing clarity on the Government's view on the role for gas. In particular, respondents called for more clarity on the Capacity Market.

1.14. Some respondents identified existing policies that should be improved. Examples included:

- planning, where concerns exist about the current flexibility and timescales of the new planning process;
- the Carbon Capture Readiness requirement, where views range from expressing a need to strengthen CCR requirements (particularly in relation to location) to the need to relax requirements (as they currently add a barrier to development); and,
- the need for certainty over future CCS requirements.

1.15. Some responses also stressed the need to improve specific technology policies. In particular, these respondents highlighted CCS, Combined Heat and Power (CHP) and anaerobic digestion,[2] with the main focus of ensuring that appropriate and strong frameworks are in place to incentivise them.

1.16. Finally, there was a call to improve market liquidity in order to support financing and development of independent gas generation capacity, although this view was not held by all respondents.

1.17. There was a general view that the UK is well placed to make use of global supplies with a well-functioning market, interconnection and well-developed Liquefied Natural Gas (LNG) import facilities. Many respondents, however, raised concerns around future price volatility and stressed the need to ensure that the infrastructure and market can protect against this. In particular, respondents discussed storage, and noted that the lack of market incentives to develop storage capacity was an important issue.

1.18. A number of responses stressed the need to ensure that infrastructure can cope with increasing variability of gas demand, including in the gas network and through short-range gas storage. There has also been a suggestion that this should be combined with greater LNG storage.

1.19. There was a broad consensus that the development of unconventional gas (both in the UK and abroad) would put downward pressure on gas prices, although this could be counteracted to a degree by upward pressure on prices from increasing demand, particularly in Asia. Most responses considered, that there is significant uncertainty on the timing and possible extent of unconventional gas production outside of the United States, and what effect it would have on the market. As such, unconventional gas was not seen by many as a consideration in current investment cases for gas-fired capacity.

[2] A natural process in which micro-organisms break down the organic matter, in the absence of oxygen, to produce biogas (mainly a mixture of around 60% methane and 40% carbon dioxide) and digestate (a nitrogen rich fertiliser).