Security of Supply

Background

• Security and quality of supply is critical to the functioning of a modern industrialised country. In addition to this the end users of energy have become accustomed to very secure high quality energy supplies at relatively low cost.

• In this context Security-of-Supply (SOS) requires secure fuel supplies, adequate transmission, a distribution infrastructure, as well as sufficient reliable generating plant.

• The required level of total generation capacity in an electricity supply system in order to maintain SoS is not a precise figure but is significantly in excess of peak demand (about 20% is appropriate according to National Grid Transco).

• Such additional generating capacity is continually required to cover for understated demand forecasts and for generating plant being unavailable due to unexpected plant breakdown, routine maintenance and repair shutdowns, delay in commissioning of new units or adverse weather conditions.

• This 'plant margin' (over and above winter peak demand) is necessary, therefore, for the security of electricity supply and does not represent surplus or excess generation capacity as is often perceived.

What is it? How is it derived?

• As UK (and European) demand for gas increases and output from the North Sea declines the UK will rapidly switch from near energy self sufficiency to a major energy importer in a relatively short space of time. The increased reliance on gas from relatively politically unstable regions will increase the risk of supply interruptions and gas price volatility.

• In the privatised electricity supply industry there is no set standard for the planning margin and the need for new plant (and the lifetime of existing plant) is determined entirely by market forces.

• Whilst the market will undoubtedly give some signals of the requirement for new capacity these may need to be based on significant, prolonged or repeated disruptions before the signal is strong enough for a risk averse sector to commit to new build. The temptation for regulatory intervention during periods of high prices and disruptions will always be present and must be high.

• Constraints on the transmission system infrastructure for both gas and electricity impose additional regional limitations that will need to be resolved.

• Renewable generation (largely intermittent wind) will continue to displace generation output from conventional stations but will not displace significant amounts of capacity. Therefore sufficient controllable generation capacity needs to be available – operating at lower load factors than previously - to cover for periods of little or no wind. This capacity still needs to be commercially viable and comply with environmental restrictions on it's instantaneous level of generation such as IPPC requirements. A higher system margin will be required as intermittency increases.

• Nuclear plants provide large quantities of baseload generation. Nuclear generation may be considered 'indigenous', and therefore secure, because uranium is plentiful and sourced from stable regions.

• If the market reflects the value of security in terms of the 'cost' of disruptions as a market externality then the market signal will be sufficient to incentivise conventional generation for SoS purposes and enable low load factor plant to become commercially viable.

• Policies aimed at reducing pollution will add to the cost of generation from fossil fuels but also restrict the available generation from existing capacity on commercial or regulatory grounds unless investment is made in abatement technology. Such constraints on coal generation in particular will require additional gas generation to take up the slack, with associated gas import implications.

British Energy's position

• British Energy believes that large quantities of indigenous baseload electricity generation are necessary to provide long-term security-of-supply in the UK.

• We believe that the market as it currently stands does not value security of supply and therefore will not stimulate new build when required.

• It is therefore necessary that a market-based mechanism be introduced that values the security of supply of baseload indigenous generation.