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Europe's Power and Gas: Security of Supply

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Leigh A. Bolton
Managing Director, Holmwood Consulting Limited
MBA (Distn), BSc (Hons), EurIng, CEng, FBQI, MIMMM
Mobile: +44 (0)7899 662185
Email: leigh.bolton@holmwood-consulting.com

Continuing this series of personal thoughts on the European energy scene, perhaps now is the time to critically consider the thorny issue of what is known as "security of supply". Over the last few years we have all seen considerable media comment on this subject and in 2006 this perhaps reached a crescendo. So far in 2007 the energy headlines have been distracted on to other subjects, perhaps as a result of the somewhat milder winter Europe has experienced, but SoS will inevitably return.

So, what do we really mean by "security of supply" as it seems to be a term that "morphs" to cover any particular energy problem of the moment. In essence, it refers to the fact that each one of us expects (or perhaps in our European society demands) that every time we turn on a light switch or a gas tap there is instant and affordable energy available. This simplistic expectation, however, hides a far more complex situation that goes far beyond simple energy terms and moves into geopolitics – indeed it is increasingly recognised that it is difficult in our modern world not to equate these.

For European electrical power, we still mainly exist in a realm of country based power generation supplying energy to national customers. We might have new company names on the bills and some cross-border trading but the practical engineering and operation of power systems dictate that this is how the industry operates and will continue to do so. While the industry structure has been irrevocably changed by the implementation of the EU Directive, not a lot has fundamentally changed for the consumer. Under this calm "swan-like" appearance there is however massive and increasing pressure just to keep the lights on.

Major questions are focussing the industry such as how do we generate the power in future years, what is the reality of renewable energy, are we investing enough in new infrastructure, is the emissions trading scheme just 'moving the deckchairs on the titanic" and putting the customer price up? One of the key considerations is perhaps the explosive growth of the (relatively) environmentally friendly use of natural gas as the prime fuel for electricity production.

This short-term approach critically avoids the hard decisions for the future – what do we have in our technology "bag" apart from nuclear for the longer term - and ignores the fact that it takes potentially 10 years to build any new nuclear power station. Also, who is willing to seriously invest in commercial scale new clean-coal technology development – with apologies to those brave companies who are? And, from an Energy Policy perspective, can there be any cohesive move forward in a Europe that is now "market driven" (that is market price and investment risk controlled) and "environment driven", but increasingly energy fragmented as a result of liberalisation. So, what ensures our security of supply in this scenario? I would argue that this might necessitate looking at the future timeline for power generation and deciding now (or in some cases several years ago as the decision time is past) on investment and build programmes.

On the premise that our short-term solution for bulk power generation is the burning of natural gas, security of supply means something else. For natural gas, this term has two or possibly three components – security of source (do we trust where it is coming from), diversity of supply routes (we don't want all our eggs in one basket, particularly if this is a transit pipeline from Russia) and controversially perhaps security of demand.

Security of source is becoming a major future problem as new gas fields are nearly always somewhere we don't want them – either politically or geographically. It is always useful to remember that the bulk of global natural gas reserves are in Qatar, Iran and Russia with West Africa and the Arctic becoming the new playgrounds for exploration and gas commercialisation projects. Geopolitics with a very big "G" therefore becomes a major issue – Iran being a case in point.

Diversity of supply routes has been one of the key drivers for the development of LNG (liquefied natural gas) in the Atlantic Basin in that it avoids transit pipelines and can offer flexibility of both source and destination. This has resulted in nearly every European country with a coastline building one or several import terminals, and the US East Coast and Gulf of Mexico attempting to do the same on the other side of the Atlantic. What is very important to remember is that having an import terminal in no way guarantees that there is going to be LNG to fill it! Import capacity just gives the facility to import but the gas molecule will in most cases go to the highest priced (liberalised) gas market – either Europe or the USA.

A number of us working in the LNG industry are also becoming concerned about the future supply side of such LNG trades. The rapidly rising costs of engineering contractors and steel acting together with the decreasing quantity of skilled workers (due to the explosion in building) are drastically compromising the economics of many LNG up-stream projects. We are seeing increasing numbers of these deferred passed their projected start-up dates. This is moving us into a very tight LNG market for around the next 5 years which will mean that not everyone that wants LNG cargoes will be able to get them.

Lastly, security of demand may be seen as a curious concept but for a natural gas producer whether supplied by pipeline or LNG route it is critical that they have a guaranteed commercial return for the massive up-stream investments necessary. Traditionally, this was done via long-term contracts with dedicated customers but in the new European liberalised gas world this is no longer possible.

I believe that 2007 will be a year of change with many of the above issues becoming more and more imperative. Unfortunately, I strongly doubt much will visibly change on the European stage as we are again seeing national interests driving future energy thinking – a dangerous mix of energy and local politics which will increasingly effect all of our lives. The primary question for 2007 is perhaps then – is Europe collectively capable of making a decision to do something positive and not just form committees and talk!