

Climate Change, a Global Problem, is a Global Solution Possible?

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Climate change is gaining greater public and political attention in the developed world. In the UK and Europe governments are attempting to promote so-called green or renewable energy and to encourage, by non-obligatory means, economy in the use of energy. Energy or emissions taxation are seen as an acceptable source of governmental revenue. The European carbon trading scheme is in place and operating for the industrial organisations that have carbon limits placed on them. Unfortunately, as expected, the value of carbon emission under this scheme is low.

The approach to atmospheric carbon reduction is fragmented. Within the EU the obligatory reductions are those encompassed within the EU Carbon Trading Scheme plus some local schemes such as the renewable obligations in the UK. Of course carbon trading in itself will not bring about a reduction in carbon emissions; the reduction comes from lower carbon emission limits set by governments. Trading enables the reductions to be achieved with some economic efficiency. However, whilst major sectors of the global economy are excused from carbon limits, economic efficiency is not very significant. Even at a country level the requirement to reduce carbon is very selective. Politically sensitive sectors are excluded – transport fuels and domestic heating in the UK for example.

In reality the solution to emissions is in the hands of politicians who must understand that in order to control the level of atmospheric carbon key criteria must be satisfied. These are:

1. Every tonne of carbon emitted must have a permit.
2. Governments must define publicly the desired level of atmospheric carbon based on the best scientific research.
3. Finally an allowable level of carbon emissions must be set – at a level that will support long-term investment in atmospheric carbon reduction through all means:
 - Economising measures,
 - Carbon sequestration and
 - Cultivation of carbon absorbing vegetation.

These steps require political decisions, but there is little evidence that governments will act either individually or collectively in grasping the principles within the three requirements above whilst the changes required involve measures that are politically very unattractive.

Climate change is a global problem that requires global solutions. Serious scientific authorities suggest that the timescale required to embark on a global solution is very pressing. The urgent actions required imply major world-

scale investment in the three areas mentioned above: cultivation of carbon absorbing crops, sequestration of carbon dioxide in, for example, depleted oil, gas and other geological structures and of course in the more efficient use of energy. The optimal mix of cultivation, sequestration and efficiency will vary from region to region and between applications, international carbon trading will ensure investments are economically efficient; this is an essential part of the solution. Without the rigour of the three steps above plus trading, local suboptimal schemes will be developed that will invariably waste money and probably increase emissions.

The case of the Dutch subsidising green electricity in their country demonstrates this. The local Dutch subsidy was such that traders bought from the rest of Europe as much electricity with green certificates as possible to sell into Holland to benefit from their subsidy. The majority of the green electricity purchased came from Germany, the country with most windmills. The effect was for the Dutch to shut down some gas-fired CCGT capacity (about 50 percent efficiency and low transmission loss) and for the Germans to start up old lignite power stations (30 percent efficiency and high transmission loss to Holland) to make good their loss of supplies. However well intended they may be, local subsidies will inevitably produce perverse results.

It is unlikely, within the current thinking, that global action on the scale and within the time required will occur. Politics will yield concerted and coordinated global action only when the process of climate change is well established, obvious and irreversible. The sheer industrial, financial and global scale of the potential solutions demands measures far beyond turning off television sets at night or building windmills in the UK. Rather than gaining a comfortable feeling from local suboptimal measures, UK and EU politicians should use their influence and energy to push internationally the key element required to arrive at a global solution to a global problem.

Only when all carbon emitted has to have a permit, is traded internationally and has sufficient value to encourage long-term investment will a global carbon recovery start. Under these conditions it is possible that countries sequestering carbon or cultivating carbon absorbing crops could become the equivalent of the current oil rich nations of today. This must yield a physical equilibrium between the quantity of carbon produced, that is oil, gas and coal, and the quantity of carbon absorbed globally. This should lead to an economic equilibrium between the price of carbon and the price of oil, gas and coal.

The political reluctance to make unpopular moves and

the sheer industrial scale of solutions inhibits real action. What then can be done to start a serious programme of reduction in global atmospheric carbon quickly? The international oil industry has the necessary skills and requirements:

- Financial strength,
- International presence,
- Major projects are the norm,
- Geological expertise,
- Spare oil and gas infrastructure as fields deplete
- Trading expertise,
- Dealing with political risk.

The low value of carbon and the political uncertainty has quite understandably resulted in the international oil and gas industry having no interest in using its strengths to reduce atmospheric carbon. However, if the industry was obliged to purchase carbon permits for a proportion of the hydrocarbons it produced, this most important business sector would be brought into the carbon reduction market. It would be neither reasonable nor practical to make such a radical change to the industry in one step. The proportion

of their production for which oil and gas producers would be required to have carbon permits would start at a low level, say five years notice of 5 percent, then be increased on an annual basis. The attraction of this model is that it allows the political expediency of sheltering some sectors to continue, but brings to the problem of atmospheric carbon the only major industry with the necessary technical, financial, operational and organisational wherewithal to implement a solution.

Without doubt such a change requires international agreements and controls. In realising this, it is essential that politicians develop a shared business model that will work within acceptable time limits and on the industrial scale required. It is certain that in developing and applying this model, the UK can through its international political influence have a far greater impact on this global problem than it can from the effects of eye-catching local measures. Involving the oil and gas industry in this solution should be politically very attractive. It will start a solution but the path forward must be clear and free from political horse-trading for confidence to help sustain long-term investment. The development should be attractive to the oil industry, for it gives it a future beyond petroleum.

The Oil Price Regime

Bassam Fattouh shows its challenges to OPEC

Many observers interpreted OPEC's decision in October 2006 to cut production by 1.2 million barrels per day (b/d) and the Organization's latest announcement of a production cut of 500,000 b/d to be implemented in February 2007 as signals that there is a new oil price floor that it would like to defend. The *Financial Times* interpreted OPEC cuts as a clear indication of a 'determination to defend \$60 as its new minimum international price'.

Although OPEC's president has announced that a price below \$60 'is very low and it is not good for investors' and that 'something needs to be done to steady the price' and although price hawks Iran and Venezuela indicated more than once that OPEC would no longer tolerate prices below \$60 a barrel, it is premature to jump to the conclusion that the Organization has adopted a new oil

price floor as a matter of policy or any other price floor for that matter. It is also premature to assume that OPEC's latest decision in December is about protecting this price floor. The Saudi Oil Minister Ali Naimi declared during the OPEC conference in December 2006 that the price, whether above or below \$60, did not figure in their latest decision. He argued that what the Organization is looking for is to re-balance the market claiming that 'there is a disequilibrium between supply and demand' and that OPEC is 'trying to get the market to the normal equilibrium and the price will take care of itself'. Many newspapers quoted Ali Naimi as saying that 100 million barrels of crude oil had to be trimmed from world stocks to balance supply and demand.

OPEC officials have been conveying recently their strong concerns about the high build-up of inventories in the USA and other OECD countries. By end of 2006, crude oil inventories in the USA stood at 321 million barrels which is 25 million barrels

over the five-year average. OPEC is concerned that the release of large stocks of crude oil can flood the market with the effect of driving oil prices downwards to unacceptable levels. Furthermore, high levels of inventories are usually interpreted by oil analysts and traders as a sign of oversupply in the crude oil market.

OPEC's views about rising commercial inventories were made explicit in 2004 when Ali Naimi argued that 'a stock build always concerns us' and that 'whenever the stock level is high the price is low and vice versa'. He then raised the difficult question: 'do you wait until the build-up in inventory [occurs] and have a precipitous price fall or do you take a pre-emptive, proactive course of action?' The latest OPEC decision can be best understood within this complex dilemma.

The above raises the following questions: why have total commercial inventories risen so fast in recent years? Is there anything that OPEC can do to slow the process of