DimWatt's Response to the Electricity Market Reform | 2011

Sir/madam,

Covering letter

We have received and studied the documents made available by DECC at http://www.decc.gov.uk/en/content/cms/consultations/emr/emr.aspx .

We regret to inform you that while we strongly support the need for electricity market reform, we are disturbed by the evidence of optimistic "group-think" in the preparation of the documents, so that, were we to comply with your request to follow the logic of the questionnaire, we would be forced into accepting the assumptions that underlie its preparation.

A practical case in point was our discovery that since 2008 the "updated" (fossil) energy price projections (UEP) have not, in fact, been updated at all. We later discovered that the fossil energy price assumptions of the Treasury, the Office for Budget Responsibility and the Bank of England are all wildly optimistic, bearing little resemblance to the dangerous and fast changing world in which the UK must compete. We are grateful and pleased that our intervention in this matter has prompted a review of the assumptions in the UEP. We hope that the DECC will ensure that all branches of Government will use consistent and realistic energy price assumptions in modeling economic policies.

We therefore submit our response in a manner that does not fit "inside the box" provided. We do not expect our brief analysis and recommendations to be popular nor acceptable in the short term. But we do hope this critique will be helpful to the Coalition as the weaknesses of current policy become more evident and the need to become more flexible and realistic in the few years left before the next election become more evident.

Yours faithfully,

[redacted]

1. DimWatt

DimWatt represents a group of businessmen, economists, power engineers, scholars and energy-literate laymen whose primary concern is that the country's electricity system is critically endangered by the policies currently enunciated by the Coalition's Ministers and published at DECC. Horrified by the drift, chatter and U-turns in energy policy over the last 14 years, DimWatt was formed during the last few months of the Labour Government to oppose tooth and nail the impossible position it had created for energy security by passing the Climate Change Act and committing the UK to the EU's 20-20-20 targets.

Our platform finds general and specific expression at www.dimwatt.eu. While we remain open to the possibility that rising CO_2 emissions from over-population and a global rise in living standards may eventually result in some global warming, we believe the main crisis that humanity (as well as the UK) faces is that we are on the edge of a fossil fuel supply (and price) crisis. In short, an energy supply crisis.

We are more concerned that the price shocks caused by physically limited supply will cause a rapid slow-down in economic growth and result in a significant reduction in the use, therefore the emissions, of CO_2, **irrespective of anything that is connected with the IPCC and the Kyoto process.** The lack of commercially available, affordable and deployable "green" technologies, especially on the supply side makes the fossil fuel supply crisis especially worrying.

We therefore urge the Coalition to reprioritize its aims and focus on delivering secure supplies of affordable energy, specifically for the UK.

DimWatt has no commercial axe to grind and derives no profit from any of its activities. This advice is offered to DECC and the Coalition for the betterment of public and commercial life in the UK.

2. The Need for Electricity Market Reform (EMR)

We agree with the Coalition that there is a pressing need for electricity market reform. We deplore the indecision, confusion and pusillanimity of the previous Government that has led to the decay of the UK's coal-fired and nuclear-powered capacity, leaving the UK critically over-dependent on imported gas for the reliability of future electricity and heating supply.

We hope that shale gas might reduce the UK's dependence on imported gas and urge the Coalition to encourage the exploration and development of this still, until proven, hypothetical resource. Extending the life of oil and gas production in the UK and its continental shelf should also be a high priority for the Coalition.

It is essential that the EMR is devised and executed in a manner that encourages the construction of a reliable and above all an affordable electricity supply that is essential to the well-being of private citizens and the future of manufacturing and commerce in the UK.

3. The (urgent) Need to Review the Climate Change Act and the Coalition's Commitment to the EU's 20-20-20 targets

We are convinced that the Coalition's energy policies and options are needlessly and foolishly limited by its impractical and unachievable commitment to the Climate Change Act and the EU's 20-20-20 targets.

Most alarming to us is that the Coalition appears to be optimistic that a reliable, secure and affordable electricity infrastructure can be delivered within the constraints of both.

We believe that such optimism is entirely misplaced, on the following grounds.

- We note that the UK Government is lauded (and lauds itself) for being the only leading member of the OECD to bring into law mid and long-term specific targets for CO_2 emissions. We deplore the way the UK is now in a straitjacket as regards all energy planning.
- We note that it is also committed to the EU's 20-20-20 targets. These require the UK to achieve impossibly large and financially ruinous amounts of wind power which, even if they can be achieved, will not deliver a secure and affordable energy infrastructure
- It is a simple fact that the UK's contribution to the growth of Global greenhouse gas emissions is negligible and falling in both actual and relative terms. It is also a simple fact that the UK has no moral obligation to disadvantage its economy and citizens to the advantage of the UK's major industrial competitors (China, USA, India) who quite clearly have not the slightest intention to enact similar legislation. We note Japan's disquiet over the extension of the Kyoto Process.
- The rising price and falling availability of fungible oil and coal, will soon encompass internationally traded gas, destroying demand, with, we fear, catastrophic economic effect. This will have the practical effect of reducing fossil-fuel-caused emissions, an effect that does not appear in any of the assumptions of the IPCC.
- In a world with fast increasing energy prices, carbon taxes and/or a floor carbon price will needlessly add to the cost disadvantage of UK citizens and industry without necessarily incentivizing investment into "low carbon" options. In fact, any form of carbon taxation is more than likely to result in an investment flight from the UK to jurisdictions where there is no risk of such taxation. The UK is appallingly badly situated to attract investors whose business is energy intensive and even risks losing essential heavy industries that are "hanging on" in the UK against the odds.
- The "low carbon" basket of technologies is bereft of any truly serious content on the supply-side. Apart from nuclear energy and hydro-power, there is not a single, commercially available, "low carbon" technology that can deliver dispatchable power to

balance the huge growth foreseen by the Coalition for on-shore and offshore wind power. If we are wrong about this assertion, we look forward to your correction.

- It is simply impossible to increase the UK's wind power capacity from roughly 5 GW today to 40 GW of wind power by 2020 as National Grid appears to be planning for (http://www.nationalgrid.com/NR/rdonlyres/CBB087D7-94E4-4CC0-A5DA-3ED795CF4D40/45414/Wind_Power_Forecasting.pdf). There are roughly 3000 days left until 2020, of which there can be no better than 1500 working days offshore. To achieve the Coalition's target calls for 19 more GW of offshore capacity or 5,700 (number) 3 MW (say) offshore turbines - or an average of two offshore turbines to be installed **every** day from now until the end of 2020.
- Even if this were possible, it would be deeply undesirable as no matter how much wind capacity is built, it will supply negligible secure capacity and needs to be matched kW for kW by firm, dispatchable, capacity to balance supply and demand.
- At a slight tangent to the foregoing, we are bewildered by the significant difference in the price of on-shore and offshore wind power in the UK compared with, for example, Denmark and believe that the terms of trade for wind turbine owners in UK favour the suppliers of wind energy to the huge disadvantage of consumers who pay for it all.
- The Coalition suffers from similar, unwarranted optimism over carbon capture and storage (CCS). We fear that the Coalition is only listening to and being influenced by those who will profit from delivering tax-payer funded CCS processes in any part of the supply chain. Coal costs have risen from $30/t in 2000 to over $130/t today. Imported coal is widely expected to cost more than $200/t by 2015. Coal energy is simply too expensive to be wasted in the CCS process. China, which transparently has no serious intention to apply CCS to any of the 70 GW coal stations it builds annually, entered the shipborne coal market for the first time last year, importing 130 million tons from a total, global, shipborne coal market of approximately 700 million tons. It is impossible to be certain but it seems likely that China can no longer supply growing coal demand from its own resources. Because its annual increase in demand remains in the range 150 - 200 million tons per year, a coal supply crisis for coal importers like the UK (and Germany) is imminent.
- The very idea of adding carbon capture equipment to newly built, gas-fired CCGTs is so crass (and impossibly expensive) that we will not dwell on this further for the purpose of this submission.
- All CCS proposals presently in the public view propose that the captured CO_2 shall be sequestrated in saline aquifers or exhausted gas reservoirs. In fact, super-critical CO_2 is a first class, well proven solvent for hydrocarbons, widely used in the USA for washing residual oil from otherwise mature oil fields. US CO_2-incremental oil production has been used by US companies since the early 1970s and now accounts for almost 300,000 barrels per day of oil that otherwise cannot be lifted by other means. No public subsidies are involved at all and the US gains tax-revenue from this process as well as reducing its dependence on foreign oil. We would be pleased to assist DECC to develop a more balanced view of CO_2 storage.

- It is widely known that the £100 - £200 billion often referred to as "necessary" for the renewal of the UK's electricity infrastructure (by 2020?) is far in excess of the total balance sheets of the "big six" electricity suppliers. It should be noted that all the major foreign investors in the UK power system are "over-levered" and are successfully reducing their debts by selling assets, including their UK assets. Recent examples of this have been the sales of their DNOs by EdF and E.On. Any and all investment funds for new UK infrastructure by the "big six" must be predicated on the assumption that UK Inc can offer internationally competitive security and returns to attract such investment. It appears that the writers of the Consultation Documents and the Coalition's Ministers simply do not understand this constraint. It is also well accepted that the UK state and regional bodies do not have any money at all to invest in public infrastructure.

We therefore urge the Coalition to rescind the Climate Change Act and renegotiate and repeal the 20-20-20 target with its EU partners.

4. What should be done?

1. HMG should seek an early EU derogation for the closure of the 8 GW of (admittedly) old, inefficient and polluting, FGD-non-compliant but well-functioning, CEGB era, coal-fired plant and the 3 GW of hardly used oil-fired plant. We recognise that these need to be replaced of course but they can be nursed along for a few more years while a more rational and affordable plan for new more reliable and cleaner capacity can emerge.
2. Our negative views over additional gas capacity will be modified if, by 2013 - 2014, there is real evidence of a shale gas bonanza at an acceptable financial and environmental cost. But until these shale gas resources have been quantified and priced, the UK should not become over-reliant on natural gas that must be imported at prices that will, sooner rather than later, revert to those of oil, as history clearly demonstrates
3. HMG must prevail upon EdF and its partner, Centrica, to extend the lives of the existing nuclear power capacity by all possible means, without endangering public safety.
4. As we write, there are nuclear plants in Japan which appear to have been built with faulty emergency shut-down and emergency cooling systems. Given the obvious lack of dispatchable supply-side renewables and the rising price of oil, coal and natural gas, it is essential that the UK draws lessons from this event and ensures that nuclear safety must be improved, not that the UK must not build large amounts of new nuclear capacity.
5. It is essential to discover how it is that China is able to build new Westinghouse AP-1000s for $1500 - $2000/kW in 48 months and the UK pursues with Chinese and South Korea specialists and other reliable suppliers of nuclear capacity, ways and means of financing and building new nuclear capacity on a much faster time-scale than presently envisaged. On that subject, it should be obvious by now that AREVA cannot deliver any new nuclear power stations on time and within much higher budgets with its present designs.

6. Instead of treating "nuclear waste" as waste, it is incumbent upon the UK, an early pioneer of nuclear engineering, to catch up with China and France in finding ways of extending the use of nuclear fuel in ways that makes the UK more independent of uranium.
7. It is clear that the Quango OFGEM is badly led and technically out-of-its depth. Its frantic activity should not be mistaken for evidence of useful activity. It served the previous Government and the UK's consumers badly by leaving until much too late its "discovery" in 2009 that NETA/BETTA was no longer "fit for purpose". In fact, the supply-side electricity crisis that the UK now faces was foreseeable as far back as 2005 when EMR may have been more timely. We suppose that it is right that the UK consumer should be protected from excessive price rises in the transmission and distribution sectors where there are "natural" monopolies. However OFGEM's advice to its political masters over the need for reforming the trading system in ways that would encourage new, non-gas-based generation has been unforgivable. It needs root and branch reform and new, professional leadership.
8. We call for National Grid, a regulated monopoly to be divested of its activities in natural gas. Its gas business, including the ownership of gas-importing terminals, makes it an unsuitable partner to advise the Coalition impartially in the development of National energy policy. This will be especially true if the Coalition, despite our advice and warning, persists in pursuing its ambitious targets for highly intermittent wind power.
9. We request the Coalition to study very carefully how feed-in tariffs (FITs) have distorted the energy policies of Germany and Spain (especially) and examine closely how cost effective FITs have been in reducing dependence on fossil fuels. If it comes to the same conclusion over FITs (solar in particular) as DimWatt, to reduce and eventually abandon its support for renewable energies that are clearly benefiting rich consumers at the cost of poorer consumers, without sensibly and cost effectively reducing the consumption of fossil fuel in the UK.