

EU Energy Policy 2030: Friend Or Foe To Energy Investment?

POLICY CHALLENGES

Low-Carbon versus High-Carbon Scenarios

“In “Unburnable Carbon – Are the World’s Financial Markets Carrying A Carbon Bubble?”, published in July 2011 by Carbon Tracker, author James Leaton writes in the Executive Summary:

“Research by the Potsdam Institute calculates that to reduce the chance of exceeding 2°C warming to 20%, the global carbon budget for 2000-2050 is 886 GtCO₂. Minus emissions from the first decade of this century, this leaves a budget of 565 GtCO₂ for the remaining 40 years to 2050. The total carbon potential of the Earth’s known fossil fuel reserves comes to 2795 GtCO₂. 65% of this is from coal, with oil providing 22% and gas 13%. This means that governments and global markets are currently treating as assets, reserves equivalent to nearly 5 times the carbon budget for the next 40 years. The investment consequences of using only 20% of these reserves have not yet been assessed.”

In other words, if the world will actually restrict the use of fossil fuels to limit global warming to approximately 2 degrees Centigrade, only a fraction of reserves currently on companies’ balance sheets can actually be used. But all those reserves are valued confidently at today’s prices, for the total amount technically recoverable. We accept uncertainty about technical recovery in the accounts, but not uncertainty about the economic ability to recover. Now people can, and do, argue about the likelihood of political will to implement regulations or other measures that will restrict greenhouse gas emissions consistent with the recommendations of climate scientists. Depending on your political persuasion and your level of scepticism or confidence in complex and emerging science, you may disregard this factor as a triviality, or you may put it front and centre in your analysis of a company’s value.

But in neither of those cases do the accounts give you much insight about the uncertainty everyone knows is there. Confidence Accounting proposes that the accounts show ranges of values, with a clear and concise explanation of the assumptions used to generate the expected value. This could be a full-blown distribution range, a bit like the Bank of England’s inflation ‘fan’ charts. It could also be some simple downside and upside ranges at, say, the 5% and 95% confidence ranges as assessed by management. Ranges could be expressed using something graphical in-between, think candlestick diagrams.” – extract from Jan-Peter Onstwedder and Michael Mainelli, “Buried Treasure” (confidence accounting and natural resource companies), The CA, ICAS – Institute of Chartered Accountants of Scotland (December 2012), pages 84-85 - <http://www.zyen.com/PDF/CA%20p44-45%20pdf.pdf>

Learning Curves, Solar and Grid versus Local

Learning curves are forceful predictive tools. In 2007, the London Accord, working with the Santa Fe Institute, produced an interesting piece, “Dynamics of Technology Development in the Energy Sector”, <http://www.zyen.com/PDF/CA%20p44-45%20pdf.pdf>. This work questioned a number of policy directions given the likely trajectory of solar costs. Other London Accord work in the 2007 publication also questioned the focus on



carbon capture and sequestration - <http://www.longfinance.net/programmes/london-accord.html?id=59>.

There is a bit of a latitude clock, i.e. Spain, Italy, and Greece can produce solar as cheaply as fossil fuels now, and the learning curve provides a good estimate of how much improvement can be expected by degrees of latitude with years of improvement. Bloomberg New Energy Finance and others seem to believe solar may undercut traditional fossil fuels just after 2020 in the UK. An EU Energy Policy for 2030 needs to look at the likely trajectory of solar prices to avoid being ‘fossil fools’ on price and security grounds.

The basic policy arguments might be:

Economic:

- ◆ low energy costs correlate with growth and economic success;
- ◆ energy security leans towards in-country production and a portfolio mix;
- ◆ greater policy stability on fossil fuels favours fossil fuel investment;
- ◆ low carbon may be desirable, but difficult to sell;
- ◆ Europe risks being in a low-energy, carbon-based world in 2020.

Technological:

- ◆ solar learning curve compelling;
- ◆ much renewable generation can be done locally without need for grid access, and will get better, but unlikely to be sufficient;
- ◆ solar, and wind, would benefit from working storage technology;
- ◆ the purpose of the ‘grid’ is increasingly called into question – is it for distribution (historic reason), or energy trading and emergency supply.

Policy question:

- ◆ should Europe focus on large storage projects, comparable to the US National Strategic Oil Reserve, that might put a base price on daytime renewable and perhaps encourage exports of sunshine from south to north?

Policy Performance Bonds – Carbon and Renewables

“Se vogliamo che tutto rimanga come è, bisogna che tutto cambi.” – “If you want things to stay as they are, things will have to change”. Giuseppe Tomasi di Lampedusa [1896-1957], *Il Gattopardo*, Feltrinelli (1959).

The [Long Finance](#) and [London Accord](#) community (over 50 financial institutions, thousands of people in finance and over 350 reports since starting at Gresham College in 2005) has developed a simple, almost subversive, proposal for on climate change finance – policy performance bonds. We have written up one variant in some detail a few times - index-linked carbon bonds. An index-linked carbon bond is a government issued bond where interest payments are linked levels to a carbon target - levels of feed-in tariffs for renewable energy, % of renewable generation, emission certificate prices or actual greenhouse gas emissions of the issuing country. An investor in an index linked carbon bond receives an excess return if the issuing country’s targets are not met, e.g. an extra percentage point of interest for each €1 that CO2 emission certificate prices are below target.

Investors can hedge projects or technologies that pay off in a low-carbon future because, if the low-carbon future fails to arrive, the issuing government winds up paying investors higher interest rates on government debt. Index-linked carbon bonds eliminate the one risk that differentiates clean tech projects from other energy projects, the uncertainty of



government policy actually being directed at a low carbon future. If governments tell the truth, they get cheap money. If governments are not committed, they pay.

IMF estimates are for trillions of issued debt each year over the next few years, so scale is limited only by government deficits, not a big limitation these days. Any government (supra-national, national, state, province) could issue index linked carbon bonds without the need for a global initiative. Documentation would be simple. Most existing government treasury mandates already allow for these types of instrument.

With so much planned debt issuance, governments will need ways to distinguish themselves in a crowded bond market. Just as governments fought to issue inflation linked bonds when their inflationary risk dominated, they can now issue carbon bonds when government inaction risk dominates. By issuing carbon bonds linked to independent, auditable indices, these 'bond cuffs' would directly address the primary concern of private sector investors, lack of confidence in governments' commitments to preventing climate change. And no, the funds raised would not be hypothecated to green projects, just as inflation-linked bonds are not hypothecated to anti-inflation measures.

<http://www.longfinance.net/lf-research.html?layout=edit&id=778>