# In Defence of Renewable 'Subsidies'

Trident Economics

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Recent press coverage noted that the latest contracts for differences handed out by the UK Government to renewable projects may be the first to be truly subsidy free, in fact the contract prices could be lower than the future value of electricity sales by the projects and the contracts could actually see payments from the project owners to the UK Government. On this basis, Scottishpower suggested that additional volumes of renewable power could be contracted for in future auction rounds.

A focus on renewable costs versus market prices is not a new approach to assessing the viability of these projects. The scale of top-up payments to renewable generators on top of electricity prices has previously been used by the UK Government to ration contracts available for low carbon generation under the Levy Control Framework. It therefore seems to make sense to question whether this measure of the cost of low carbon power is appropriate.

## Internalising the Carbon Externality (- ish)

Future electricity prices are heavily influenced by future fuel prices, particularly natural gas prices in the case of the UK, and anticipated carbon prices. Since 2005 UK power generators have faced a carbon cost for each tonne of CO2 emitted by them through their inclusion in the European Union Emissions Trading Scheme (EU ETS). Charging power generators for CO2 emissions is intended to 'internalise the carbon emission externality', i.e. to confront power generators with the societal cost of CO2 emissions, thus providing an incentive for less CO2 intensive forms of power generation.

In 2011 the UK Government introduced a carbon price support scheme, intended to guarantee a trajectory of minimum carbon prices for GB power generation that would rise to £30 per tonne of CO2 by 2020 and continue to rise to £70 per tonne in 2030 (both in 2009 prices). This trajectory was judged to transition the UK to the global carbon prices estimated to be needed to limit climate change. The scheme works by the UK Government setting an additional tax on CO2 emissions from UK power generation on top of the costs of EU ETS allowances. However, the UK has not kept to the minimum carbon price trajectory that was promised to low carbon investors, who would benefit from higher carbon prices as these are passed into wholesale electricity prices by fossil-fuelled generators. Faced with rising energy costs for UK consumers, and a growing divergence between the carbon costs for UK and continental generators, the UK Government capped the level of carbon price support.

Based on the latest statements by the UK Government, the actual carbon price paid by UK fossil-fuelled power generators in future will be the sum of a floor price set in auctions of UK carbon emission allowances and a capped carbon price support amount. It is not clear that these price signals either together or separately have any clear link to short-term or long-term emission reduction aspirations.

## What's that got to do with Subsidies ?

To achieve the optimal mix of power generation technologies as the UK seeks to reduce CO2 emissions, an appropriate carbon cost will need to be factored into cost comparisons between low carbon power generation options and fossil-fuelled power plant. If market power prices do not reflect such a carbon cost, then whether or not they require a subsidy in addition to market power prices is not the right economic test for the attractiveness of low carbon projects.

If it is impossible in practice to impose carbon costs on UK power generation that are consistent with emission reduction aspirations, then 'subsidies' will be required in parallel to carbon pricing to meet policy goals. In cost benefit analysis terms these would not actually be subsidies, the payments to low carbon power would in fact be correcting for imperfect carbon pricing which is effectively a subsidy for fossil fuels.

## Changing the Conversation

As renewables become cheaper it will be possible to add capacity to the power system without subsidies, but not enough capacity. Recent analysis by Aurora Energy Research on behalf of the National Infrastructure Commission found that subsidies will continue to be required for decades to meet carbon emission targets (only becoming unnecessary when carbon prices became extremely high, e.g. £500 per tonne versus the current aggregate carbon cost for UK power generators of £33 per tonne). If the power sector continues to engage in discussions regarding subsidy-free renewables, there is a risk that this will enable politicians to avoid confronting the real issues involved in transforming our energy system.