

**“How do we innovate our way to a low carbon economy?”****Some thoughts by Energywatch’s Allan Asher****April 2007**

In this “insight”, I will explore four themes relevant to the issue of innovation in low carbon technology, focussing on activities by energy suppliers. Following the Stern Review’s wake-up call,, this note concludes that the energy supply sector is not doing enough.<sup>1</sup>

**Competition and diversity should stimulate innovation**

Competition should in theory incentivise suppliers to offer the best prices and services that they can to customers. But with supply being a traditionally low-margin business that is restricted by Britain’s artificially constructed transfer prices adopted by the “Big Six” suppliers, increased profits are best achieved by boosting sales. Moreover, in a sector with low expected growth, increasing sales implies increasing energy usage and thus more carbon. This is of course inconsistent with the move to reduce greenhouse gas emissions.

Competition should also encourage companies to innovate by adopting new technology and increasing their range of customer offerings. But as we note below, there have been few signs of this meaning that the UK is lagging in terms of best practice. The Big Six suppliers are very quick to publicly criticise government and the regulator for creating investment uncertainty yet behind the scenes they argue for new or increased incentives for nuclear, renewables, clean coal and energy efficiency technologies. They have also monopolised grants for pilot schemes for new meters and micro-generation. Furthermore, despite the huge windfalls they have enjoyed from inflated carbon prices, they are still reluctant to invest their own money in new generation developments and insist on further incentives before they will take any action.

The barriers to innovation arising from current industry practice should not be underestimated. The widespread use of estimating bills means consumers are unable to control their energy use and cannot take action to manage their carbon emissions. Tiered tariffs with unit rates rising as consumption increases would be one useful innovation but the established suppliers are not interested. Last year saw the large suppliers fail to establish a micro-generation export agreement to boost take-up of this technology. They have also failed to publish new guidelines for green tariffs, and some suppliers are even promoting measures that they have actually not introduced but at the same time are levying additional charges for them.

The new Neta market was designed to increase demand-side participation but instead has created generous incentives for flexible generation and its complexity has deterred any meaningful participation by large consumers. Ofgem cites the experience of winter 2005-06 as evidence of efficient market response, but the reality is 100,000 job losses at a time of global economic growth. There is a huge difference between demand reduction and demand destruction.

**Small can be beautiful**

Against this background it should come as no surprise that virtually all innovations – green supply contracts, energy services agreements and smart metering – have been driven by smaller players. The larger incumbents have followed at a very safe distance and erected wider market barriers to squeeze out their smaller competitors and as a result the innovation they bring with them.

With the collapse of wholesale prices, we should be seeing a host of new entrants into the energy supply market-place. But access to wholesale supplies remains under the control of the incumbents, who either

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<sup>1</sup> These remarks formed the basis of an oral contribution by Allan Asher at the recent Carbon Trust debate on the subject.

own or dominate access to the vast majority of production capacity. Credit requirements continue to deter entry and the entry processes themselves are expensive and complex, especially for electricity. A supply licence review has reduced compliance requirements but mainly to the benefit of those already in the market.

Our regulator appears unconcerned about the barriers to new entry while our government seems to believe that six large players will deliver its low carbon agenda if left to their own devices. In fact, diversity of supply and thought require a commensurate diversity of participants.

### **Existing incentives are not properly targeted**

The incumbents have also lobbied policy makers to convince them that energy efficiency improvements can only result from market intervention and the creation of new incentives for the suppliers. But great care should be taken to learn from the mistakes of the past before new costs are created for customers.

The energy efficiency commitment (Eec) is well-established and has delivered important benefits for consumers, especially the incentive to install cavity wall insulation which has helped alleviate some of the problems faced by the extra one million plus customers who have fallen into fuel poverty since 2004. But this has arisen out of a centrally-negotiated process between government and the major players, meaning that progress is slow and does not encourage innovation. So, investment remains solely focused on low-cost, proven technologies and measures.

Eligibility needs to be broadened to the production side so that it embraces micro-generation and energy storage devices. Qualifying credits need to be adjusted so that there are stronger incentives for marginal and new technologies and applications such as advanced meters. Most critically, the Eec needs to be restructured into a carbon rather than an energy-based obligation from 2008. Measures for priority customers who under the current rules must account for 50% of the targeted savings need to be separated out and administered through social support schemes to avoid conflicting incentives.

Consumers are of course already paying for the Eec – some £10/fuel/year under the first phase and as much as twice that for the second phase. Our policy makers need to ensure that the arrangements for this *de facto* subsidy ensure money is being spent sensibly and that new applications are commercialised so that, over time, the net cost to consumers can be reduced.

Appropriately structured energy efficiency incentives also need to be applied more widely and not just to suppliers. Despite an obligation on Ofgem to promote sustainability, the recent generation of monopoly price controls do not address the perverse incentive to grow the asset base. Mechanisms such as Registered Power Zones and the Innovation Funding Initiative are remarkable only for their complexity, and have produced limited take-up. Good practice in network regulation that incentivises capital expenditure deferral and stimulates efficient local generation remains absent in the UK regulatory system; this is not good enough.

The renewables obligation (RO) is the other primary mechanism that impacts energy suppliers. At best it can be described as a noble experiment with results so far showing unambiguously that the consumer is getting a very poor return on the £750mn cost it currently bears. Energywatch is encouraged that the government recognises the RO's defects. But we are far from convinced that the proposals brought forward last July for banding and automatic target extension are the right way forward. A more direct and focussed pull-through mechanism as an alternative to the RO is urgently required to target needy technologies. The challenge is to bring marginal technologies to commerciality as soon as possible, not to perpetuate wind-fall gains on established technologies.

### **Micro-generation policy is in chaos**

Recently the Institute of Public Policy Research argued that a levy of 17p/month on electricity bills could raise £100mn to help domestic consumers install micro-wind turbines and solar panels. <sup>2</sup>The institute said on 20 March that its research, shows that less than 0.5% of UK households (100,000) have any type of onsite renewable generation, mainly because it is too expensive. It said the chancellor should increase the

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<sup>2</sup> [www.ippr.org.uk/pressreleases/?id=2613](http://www.ippr.org.uk/pressreleases/?id=2613)

budget for the household stream of the low carbon buildings programme and has estimated that £100mn of grant support would be required (compared to £6.5mn prior to the budget) over the next two years to double demand and reduce payback periods to ten years. The institute also recommended that electricity exports are purchased at the same rate as that supplied, and all homes should be given an energy audit by 2012 with support for increased energy efficiency.

These proposals are very sensible and in our view represent an appropriate response to address the bottleneck in an important policy area where the industry is failing to deliver. But rather than create a new cost for consumers we would wish to see existing mechanisms amended to achieve this outcome. Given my comments on the need to reform Eec and the RO and also the dearth of properly-directed incentives on distributors, there are many options available.

### **Need for increased intellectual leadership**

If all the various direct charges, measures and incentives imposed on consumers since 2000 to help support the government's environmental policies were added together, they could contribute as much as £10/MWh to the delivered cost of electricity.<sup>3</sup> But in fact seven years on there is little evidence that consumers have benefited either through innovative practice by their suppliers or through real carbon abatement.

As a consequence of the factors we have highlighted in this paper there has been a negligible take-up of smart metering, a comatose demand-side, "green" supply contracts which are not what they seem and minimal use by supply companies of the very significant cashflows they generated in real emissions reduction technologies rather than energy producing assets. Despite talk from government about changing supplier incentives, it is clear that if this does occur it will be on the incumbents' terms and, more than likely not to the consumer's benefit.

The Carbon Trust has shown intellectual leadership in the area, which is both right and proper. Its reports on reforming the RO<sup>4</sup> and lessons from the emissions trading scheme<sup>5</sup> last year were timely initiatives with important messages for policy makers. The Trust has shown that mechanisms can be improved that would give a beneficial impact in terms of both carbon abatement and lower prices to customers.

We would like to see the trust broaden its outlook to embrace other areas that impinge on the energy supply sector, and consider the points outlined in these remarks, which should act as a stimulant to its thinking and, ultimately, we hope, action.

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<sup>3</sup> This includes costs of the climate change levy, the RO, and the Eec, as well as higher network charges to help "rewire Britain".

<sup>4</sup> [www.carbontrust.co.uk/about/presscentre/2006/070606\\_renewables\\_policy\\_framework.htm](http://www.carbontrust.co.uk/about/presscentre/2006/070606_renewables_policy_framework.htm).

<sup>5</sup> [www.carbontrust.co.uk/about/presscentre/2006/062106\\_eu\\_ets.htm](http://www.carbontrust.co.uk/about/presscentre/2006/062106_eu_ets.htm)