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Applying belt and braces to EU energy policy

By David Buchan

It was a triumph for the market economists over the regulatory lawyers inside the European Commission when, around the year 2000, the European Union executive was converted to emissions trading as the main instrument for controlling carbon dioxide. At the time, the concept of tradable permits was alien to many in Europe, a transplant from America where economists had developed it as a flexible and cost-effective form of pollution control for sulphur and nitrogen oxides. By 2005, it had become the keystone of Europe's climate change policy. It still is. But some of those economists who set up the Emissions Trading Scheme now worry that the Commission is fatally undermining the scheme with flanking regulations that will suck demand for carbon out of the system and depress the carbon price to the point of making it irrelevant in promoting low carbon investment.

One of these market-minded officials, Peter Vis, a creator of the ETS who is now Climate Commissioner Connie Hedegaard's chief of staff, went public last month with his concerns about the impact of a new draft energy efficiency regulation on the ETS. "We have got two policy approaches knocking up against each other and that isn't helpful", he told a conference in Brussels. On June 29 the full Commission finalised its draft energy efficiency directive, but without resolving the essential tension between the ETS on the one hand, and energy saving and renewable regulations on the other. The Commission just said it would monitor the efficiency directive's impact on the ETS.

This essential tension is inherent in the 2009 Energy and Climate Package. This has three targets - achieving by 2020 a 20 % reduction in emissions (from 1990 levels), a



20% renewable share of total energy and a 20% cut in energy consumption (compared to a projection of business-as-usual energy use in 2020). The first two targets are supposed to be legally binding, while the energy saving one is voluntary, and that is the way EU governments generally want it to stay. However, because this target is voluntary – surprise, surprise – it is not being met. The 27 EU member states are only on course to reduce their energy use by around 13 % below the estimated business-as-usual level of consumption by 2020.

So there is now an attempt to achieve the 20% energy saving, not with binding national targets (at least not at this stage) but with certain binding measures that could have the same effect. One of these proposed measures in the energy efficiency directive would require energy distributors to reduce their energy sales, by volume, by 1.5% every year. Remember that energy supply companies are already covered by the ETS. Another measure would require governments to improve the energy efficiency of 3% of their public sector buildings every year. Note, too, that while emissions from the building sector are not covered directly by the ETS, but by separate ceilings, reducing energy use in buildings will reduce energy supplies companies' demand for ETS carbon permits.

These two measures, plus some technical improvements in combined heat/cooling and power, should ensure the EU hits its 20% energy saving goal. But, taken together with fulfilment of the renewable target, the new energy efficiency directive would lead the EU to over-fulfilling its emission reduction target. One current calculation is that a 20% renewable share of total energy + a 20% energy saving = a 25% reduction in emissions. [1] This ought to be unqualified good news, were it not for the depressing effect of such energy savings and emission reduction on the ETS carbon price.

One of the models often used by the European Commission could not cope with the interaction between a regulation-induced efficiency saving and the ETS price. Built to work on the assumption that energy efficiencies only arise from energy price increases, the E3ME model had a mandated 20% efficiency savings pushing the ETS price, implausibly, zero. The other model, the PRIMES model, estimated that the 20% efficiency target would depress the ETS price of 2020 from Euros 16.5 per tonne of CO₂ to Euros 14.2 per tonne of CO₂. This mildly depressing effect is credible, though the PRIMES projection made certain assumptions that softened the impact such as assuming higher cuts in greenhouse gases in non-ETS sectors (buildings, for instance) and carbon-emitting companies saving allowances acquired before 2020 for use after 2020. So far, announcement of the energy efficiency proposal has had little impact on the ETS price. Despite the financial and sovereign debt crises, the ETS price has recently been buoyed up by the demand increase for fossil fuels presumed to be coming from Japan's nuclear accidents and Germany's early exit from nuclear power.

Exactly the same issue of market mechanism-versus-regulation was raised a couple of years ago when the renewable target was set. This, it was feared, would undermine the ETS by lowering the demand for carbon and therefore the price of allowances. The Commission ran several projections, one of which showed that, everything else being equal, meeting the twin 20 % emission and renewable goals simultaneously would produce in 2020 a carbon price of Euros 39 a tonne of CO₂, compared to Euros 49 a tonne if the greenhouse gas target alone were allowed to drive renewables and all



other forms of low carbon energy. In real life, everything else is never equal. It is very likely that the financial credit crisis of 2008-9, suppressing demand for carbon, had more of a dampening effect on the carbon price than progress towards renewable targets.

Nevertheless, there are some questions raised by having the market mechanism of the ETS and the regulatory approach of the EU's renewables and energy efficiency directives 'knocking up against each other'. One is that, by lowering the price of carbon, the regulatory approach favours the dirtier forms of fossil fuels. For this puts operators of coal power plants at less of a disadvantage relative to operators of the cleanest form of fossil fuel - combined cycle gas turbine plants. This point was made in the paper by Christoph Bohringer and Knut Rosendahl in their catchily-titled 2009 paper 'Green Serves the Dirtiest' [2]. To the extent that lower carbon prices encourage the building of new, dirtier forms of fossil fuel plant, then this type of generation could be locked in for several decades, which would be unfortunate. We could be seeing this happen in Germany, where there is little resistance from the market (as distinct from local environmental groups) to new coal investment.

But in the view of Cédric Philibert of the International Energy Agency [3], the 'green serving the dirtiest' paradox is over-stated. He makes the point that while coal's disadvantage relative to gas may be reduced under a lower carbon price, it still has to pay a price for generating. In a 2011 paper focussing on renewable energy policy interactions with climate policy, he concludes that it is 'unlikely that the rather minor advantage given to more Co₂-intensive generation described by Bohringer and Rosendahl would enhance the lock-in of these fossil fuel technologies. By contrast, renewable energy policy instruments will unlock the potential of renewables'.

It is more expensive to promote renewables through specific subsidies or quotas than through a carbon trading system. And there is a danger of a public backlash at the cost. On the other hand, specific support does produce results. As far as one can judge the EU-27 are on course to hit their individual national renewable targets that, together, should produce an EU-wide average of a 20% renewable share of Europe's total energy by 2020. Early deployment of renewables should lead to cost reductions (and is doing so in the case of solar PV), which in turn should lead to a mass roll-out of renewables, leading to further cost improvements.

The argument for specific policies for energy efficiency – with benefits outweighing the downside risk to the ETS price – is stronger than that for renewables. Every 'negawatt' of energy saved contributes to energy security through reduced imports, to a better environment through a reduction in local pollutants as well as global greenhouse gases, to more employment through jobs in house insulation, and to prosperity through cheaper energy bills.

Why, however, aggravate the tension between energy market mechanisms and regulations by focussing part of the energy efficiency directive on the energy supply sector already directly covered by the ETS? The Commission's answer to this is that Europe was making little headway under previous legislation. The 2006 Energy Savings Directive was only designed to produce a 9% saving by 2016, a rate of progress that would only have achieved a 13% saving by 2020. This Energy Savings



Directive focuses only on end-use efficiency, deliberately avoiding overlap with the ETS. So to get more savings, it was felt essential to tread on the preserve of the ETS and tackle inefficiency in the supply of energy, not just its use.

The simple answer would be to lower the overall cap on carbon allowances in the ETS in line with the regulation-induced drop in demand for carbon, and so maintain the ETS price. But the simple answer is not, unfortunately, the practical political answer. Before the Copenhagen summit of December 2009 the EU was talking of raising its emission reduction goal from 20% to 30 % if other major emitting countries matched its climate mitigation efforts. After Copenhagen – when it became clear the EU could expect no such matching effort from others – came calls for the EU to move anyway to a unilateral 30% emission cut, if only to take up the slack in carbon demand resulting from Europe's recent recession.

But, despite the fact that the recession has reduced the relative cost of an increased emission reduction, the EU institutions appear hopelessly split on the issue. In the Commission, climate commissioner Hedegaard favours a unilateral move to 30%, but energy commissioner Gunther Oettinger appears set against it, reflecting competitive concerns in his own country of Germany. In the Council of Ministers, the UK and a few west European governments favour 30%, but Poland, current holder of the EU presidency, and several other central European governments are against. More surprisingly, the European Parliament has also now split on the issue. On July 5, MEPs failed to pass even a watered down resolution, calling on the EU to move to a 30% reduction if other countries showed equivalent effort.

But if Europe keeps its ambition low, it cannot expect to keep the ETS price high. So some member states are taking their own measures - for instance, the UK decision to impose a Co2 tax at £16 a tonne in 2013 rising to £30 by 2020. Putting such floor under the price of carbon in the UK may be a way of trying to preserve the market mechanism of emissions trading – but no longer at a European level.

[1] Remember that the targets have different baselines. The baseline for the 20% energy efficiency objective is 2007, not 1990 which is the baseline for the 20% emission reduction goal. Ensuring energy use in 2020 is 20% less than the level it might otherwise have risen to from 2007 is not as drastic a saving as Europe using 20% less energy than it did in 1990.

[2] C. Bohringer and K. Rosendahl (2009), 'Green Serves the Dirtiest; On the Interaction between Black and Green Quotas', Discussion Paper no. 581, Statistics Norway.

[3] C. Philibert (2011), 'Renewable energy policy and climate policy interactions', in Climate and Electricity Annual 2011, International Energy Agency.