

"POLICIES FOR REDUCING PERSONAL CARBON"

Seminar, 16th May; Meeting Notes

On Friday 14th May, 4CMR hosted the half-day seminar "Policies for Reducing Personal Carbon". The speakers and panellists included Terry Barker, Phillip Sargent of the Cambridge Energy Forum, Richard Starkey of the Tyndall Centre, University of Manchester, Doug Crawford-Brown of the University of Manchester at Chapel Hill. It was an excellent afternoon. After some introductory remarks from Philip Sargent of the Cambridge Energy Forum, Terry Barker opened proceedings with an overview of Carbon Taxes and Emissions Trading.

TERRY BARKER outlined three criteria for assess policy solutions: Effectiveness, Efficiency and Equity. The 'polluter pay principle' is that the generator should pay the cost of the pollution. Terry gave an overview of the taxes versus payments: the response of taxes to the economy is uncertain, but the instruments themselves are well known. With quotas the outcome is more certain, but they are untested, at least at the personal level.

RICHARD STARKEY's talk was on Personal Carbon Trading schemes. Richard provided an outline of one such scheme DOMESTIC TRADEABLE QUOTAS (DTQs), proposed by David Flemming in 1996. In this scheme, rights to burn energy are allocated to end-purchasers of fuel and electricity. A cap (carbon budget) would be set several years in advance, giving a long-term signal to society. Carbon budget would be divided between adult individuals and organisations. 40% of carbon units would be given to individuals on a free per capita basis. The remaining 60% would be auctioned to organisations on a national carbon market. Carbon units would be surrendered whenever fuel or electricity was purchased directly. The quantity surrendered would cover the carbon content of the purchase, and the transaction would take place with a carbon card (similar to, or integrated with, existing credit or debit). Market makers, for example banks or post offices would intermediate between those individuals who have more units than needed and those that have too little.

DTQs are liked by some because they give a fair allocation of emissions rights and give adults a tangible stake in the atmosphere. Tyndall has assessed personal carbon trading on the grounds of feasibility and appropriateness. Defra has also performed a feasibility study on DTQs.

Defra' study found that DTQs were feasible: "The majority of functions could be

fulfilled by modifying and/or adding capacity to existing systems". Appropriateness was assessed on the grounds of fairness and efficiency. Fairness, was not as simple as giving everyone the same quota. Under equality of welfare, however, groups in society who require more energy (e.g. those who live in cold regions or old houses) should be allocated more emissions rights. However an equal per capita share would be cheaper to implement. Thus, alternatives such as upstream trading or a carbon tax with lump-sum recycling might be worth considering.

The costs for a DTQ scheme were estimated in the study at £0.7-2billion of set-up costs and £1-2billion per year annual running costs. This compares to a upstream carbon trading (where it is the revenues from the sale of emissions permits, rather than the permits themselves), which has much lower set-up costs of £50-100million and annual running costs of £50million.

Since DTQs cost a lot more than simpler systems, it is important to determine whether there are additional benefits for the extra cost. Such potential benefits include making individuals stakeholders, engendering a sense of community and a sense of responsibility; increasing carbon visibility, consciousness and literacy; and empowering individuals. An increased carbon consciousness might lead to a greater search for easier emissions reductions and therefore cheaper reduction in emissions.

Overall, Defra found that these additional benefits were insufficient to justify the additional cost. The visibility of residential carbon would be increased by the use of smart meters. Those arguing in favour of DTQs might counter that the costs are less than suggested and benefits greater; and that DTQs might be an appropriate response to 'peak oil'.

ADRIAN WRIGLEY then introduced the idea of "Systemic Fiscal Reform" and its effects on carbon pollution. He introduced an important concept, that of 'Deadweight Costs': economic losses associated with bureaucracy, enforcement, avoidance behaviour and frustrated activity. The deadweight costs of taxes are modelled as a constant term associated with administration, and a quadratic term associated with avoidance, enforcement and frustrated activity. The UK tax system is astonishingly complex; perhaps the second most complex in the world after the US system. Estimates of the costs of deadweight costs are rare (MacLeod review in New Zealand).

Dr Wrigley outlined three general types of tax: Transactions (including labour, consumer sales and asset transfers), Resource (including mineral extraction and environmental) and Economic Land (Land, Radio Spectrum). The overall UK tax take, of about £500bn, is more than 95% transaction taxes. This has a large effect on the marginal prices of labour, particularly for unskilled labour at the boundary between unemployment and employment and for highly skilled labour. Some goods e.g. aviation fuel, land, are not taxed at all.

A systemic solution to these problems is to abolish high deadweight costs and increase low deadweight alternatives. Such a program might include the elimination

of sales, labour and company tax, subsidies and means-tested benefits. Fuel taxes would be expanded and reformed and a tax on land site value would be introduced. A tax of £500/tonne of CO₂ at current consumption and a 100% land value tax, would each take approximately half the current tax take.

Dr Wrigley concluded by arguing that carbon abatement research needed to widen to include large-scale structural/systematic issues. High fuel use is partly a consequence of unrelated systemic effects of the tax system. Systemic fiscal reform is the safest policy to cut dramatically carbon pollution and improve economic well-being. The net economic cost of such a reform would be negative from year 1.

PROF DOUGLAS CRAWFORD-BROWN's presentation summarised his experience in the US and UK in reducing personal carbon footprints.

People have needs, those needs require energy; and in burning energy, CO₂ is released. However, at least a 60-80% reduction in global emissions is required to prevent catastrophic climate change. Both causes and solutions exist at different levels: Nations, Municipalities, Energy Sectors, Institutions and Individuals. Each of these are actors on stage, but they also create the stage on which others can act.

Transportation, Business/Industry and Residential each contribute about one third to the CO₂ emissions. We are each a carbon manager. Doug's own personal footprint dropped by a half when he moved to the UK.

Doug noted that efficiency reductions might not lead to reductions in total energy consumed. For example, improvements in building efficiency might be swamped by increases in the size of buildings. The energy sources used to power your home or institution matter - but buying 'green electricity' may not increase the total amount supplied. There are other options to staying comfortable in the home - putting on a sweater or allowing a larger gradient between the cooler and warmer parts of the home. Daily decision matter, particularly in transportation: whether to take bicycle, bus, or car. Of course, the amount driven matters more than the car that one drives.

Prof Crawford Brown concluded by quoting two major historical thinkers. "Hell is filled with good intentions and desires," said Medieval theologian St Bernard. He concluding going even further back, to Plato's Republic noting that we must consider not only human reason but also human passions and will.

QUESTIONS AND PANEL DISCUSSION

The first question asked whether there will have to be pain. In response, Dr Wrigley suggested that there is a lot of pain already inherent in the high deadweight costs of taxation. Dr Barker suggested that happiness comes from various social needs and the relationship with utility is dubious. If we are to focus on happiness, can imagine shifts in lifestyle. But this is gets mixed up with religion. The money system already exists and quite well known. If we were all expected to do a carbon budget, it might take us lots of time. Richard Starkey suggested that the only game in town is extending the emissions trading scheme. However controlling emissions downstream might not give any extra benefits: perhaps an upstream system might be better.

Mark Haslett asked whose behaviour do you want to change? Thought process is pushed back to individual. How does the system do you affect decisions made at each of 5 different levels (including super-nationally decision making). Prof Crawford Brown suggested that you need the policy decision making at the points where it can make a big impact. His research had suggested that there are three kinds of people roughly one third will do something because its green; one third didn't care; and one third will **not** do the thing because it's green! Adrian Wrigley suggested that we should leave it to the free market to find the distortions.

Others suggested that a free market can be considered in many different ways. If you put a price on carbon emissions, the only question is 'who gets the money'. If the size of emissions it is who gets the cake.

Julian asked whether we can we get a sense of perspective of the actual cost. Do we have a better idea of the cost of a tonne of carbon? One listener asked: what's all the fuss about? Stern adds 2p to a unit of electricity. Dr Barker suggested that the cost of climate change are immeasurable. The reasons I am saying this is the asymmetric risk from climate change. Adrian Wrigley commented that the question might be irrelevant. We don't need to have to have a Pigouvian Tax: we need to have a tax that is at least big enough. One listener commented that America seems to think that there is a social cost of carbon of \$3/CO₂e. Dr Barker suggested a more realistic value was \$100/tCO₂e equivalent by 2020 rising smoothly. Prof Crawford Brown emphasized the insurance aspects of carbon reduction: "It's not like buying the car; it's like buying the insurance on the car".

The next questioner asked: how do you define social equity for a carbon trading scheme? How do you preserve the quality of life for those with low emissions? Richard Starkey asked the audience to imagine a simple world where emissions are directly proportional to income. Under PCT or Revenue Recycling, then there will be

a surplus for those on low incomes. In that stylised world, the world is progressive. However, the real world is not as simple. If you implemented a carbon tax tomorrow, you would make some poor people worse off. In conclusion one policy measure doesn't solve all your problems. Policy needs to be implemented in tandem to address other problems such as fuel poverty. However, Adrian Wrigley argued against flexible tax rates which would contribute highly to deadweight costs. Another audience member suggested that the wealthy have access to best technology. If you are going to change tax; you need tangible figures. Doug Crawford Brown suggested that we need to stop talking about efficiency. An audience member commented that when fiscal measures are considered, the 'man in the street' is sceptical of the motivation of fiscal and related measures. A further comment was that regulation might be needed in addition to Policy. Another audience member suggested that both clarity and detail was needed in the communication of . Need to back up simple messages with detail.

The last comment related to the slide on Plato. Desires, wishes, needs, rational side...fine. But how do we get to the will? Is part of it the quality of information that we have. We've heard disinformation from Viscount Monckton, Nigel Lawson amongst other people. Can we find a way to improve quality of the information?

Richard Starkey commented that we need to improve the quality of our technical journalists. None of the civil service are influenced by sceptical (dis)information. Audience members countered that in Web discussions 'Joe Bloggs' is influenced by such disinformation.

Adrian Wrigley argued that the good news (in relation to fiscal reform) is not being communicated. The cost of action is nil or negative. This message must be communicated to political parties. Maybe we need to turn academics into activists?

Douglas Crawford Brown, however, did not believe that information is lacking: "I'm not here to save your souls. There are thousands of ways of reducing carbon emissions. If you want to make carbon changes in African Americans – go to Church!"

Terry Barker concluded by thanking the panellists for their contributions to a marvellous seminar.