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A CARBON MARKET IN AUSTRALIA

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Most people will recall the debate following last year's Federal Election as to whether Australia should make a commitment to reduce its carbon emissions by a fixed percentage before 2020. In the event, the government declined to make such a commitment but seems likely in the near future, to commit to a larger reduction, by a later date.

So there will almost certainly be a reduction. But whatever the reduction and whenever the date, how will the government go about achieving it and how will this affect you and I?

If you have followed what the politicians have been saying since the Kyoto Treaty was signed in 1997 you may fondly imagine Australia can achieve a reduction of between 20% and 50% in our carbon emissions by switching to smaller cars and turning off the lights around the building. No government source, after all, has so far said anything to the contrary. Governments, whatever their political persuasions are not enthusiastic about telling us what disruptive reactions are involved in the process of reducing carbon emissions. It is far too easy to imply that larger motor vehicles like 4WDs and lights needlessly left burning are the crux of the problem and if more people were to use public transport and switch off the lights when leaving the room, the problem would be solved.

No such luck. If all the cars and trucks in Australia were banned from the roads tomorrow it would make only a small reduction in the usage of transport energy – which currently accounts for about 15% of total carbon emissions.

Reality is that most of our carbon emissions come from the production of electricity. Electricity itself is, by all standards, clean and sometimes even green. It is the fact that Australian electricity is produced either from black coal, which is quintessential carbon or, in Victoria, from brown coal that is mostly carbon and creates even more carbon emissions than does black coal. In short, coal is Australia's big greenhouse problem, not electricity.

In Victoria we burn about 170,000 tonnes, of coal a day providing the electricity we need. For those of you who saw the recently visiting Cunard Liner Queen Victoria, she weighs in at about 90,000 tonnes so Victorian electricity production equates (in weight) to about 660 Queen Victorias a year or almost two Queen Victorias every day. As a result about 100 million tonnes of CO_2 are emitted every year from the Latrobe Valley alone. It is hard to get this in perspective but a single kilowatt hour which costs just 16 cents requires, in its production (in weight), the emission of just under a tonne of CO_2.

Electricity, as we all know, is exceptionally useful. It enables us to put energy in at one end of the system and take it out almost wherever we need it. But in order to get anything like the reduction in carbon emissions the government is being asked to sign up for, would mean not just no further increases in electricity usage but substantial cuts in electricity usage, unless the means of its production are changed. Just like the consumption of food, demand keeps increasing, firstly with population increases and secondly with improving living standards. Population forecasts suggest about 30 million Australians by 2020 and all enjoying a higher standard of living than in 2008. At the current rate of energy usage these increases will increase energy demand and carbon emissions by something in the order of 50% over the next 12 years rather than the reduction we need to have.

It's time therefore that we started to think our way through this dilemma. If there are about 50% more Australians and they all have increased buying power, of course they are going to purchase and use a lot more energy. That is human nature. That is why the problem is so hard to remedy. It is a political nightmare. Of course we can talk about switching off the lights and using energy more efficiently but these alone will provide very little reduction in electricity usage and consequently in carbon emissions. What we need is something that will provide the big turnaround we have to have.

So how can a reduction be achieved? The previous government tried "sustainability" – that is an attempt at voluntary reduction in energy consumption with the assistance of education (advertising) and some regulation. The results were discouraging. Sustainability may have provided a slight reduction in the rate of increase in energy usage and carbon emissions but both have continued to rise without that reduction being in any way discernable.

Sustainability (of a different sort) came much easier during the great depression of the 1930's. What our parents and grandparents were sustaining then, however, was their money either to pay for necessities or just to save against a

rainy day. They did this by the simple expedient of not spending unless they had to.

World War II also saw Australians achieve sustainability of sorts, this time in respect of consumable goods, through rationing. For so called "essential items" shoppers were limited to purchasing only that quantity for which they could produce coupons. In addition, defacto rationing applied because most goods even though not classified as essential items were simply unprocurable.

Today's Australians have a very much harder task in achieving sustainability in energy because energy is literally in everything we buy and in every service we receive. Energy goes into all goods and services. People buy goods and services so by buying anything we are contributing to the expenditure of energy. In addition energy is available almost everywhere to assist us in doing whatever it is we want to do. So we have grown used to using it whenever we need to. It is because of this easy availability of energy that we have made such huge progress in reducing the need for human labour, that is the up side. The down side, however, has been a vast increase in carbon gases.

Government could consider introducing a flat tax to give a signal to energy users either to switch to alternatives or reduce consumption. But the problem with a flat tax rate is that it has to be high enough to persuade enough users to seek the alternatives or reduce consumption to be of any use. No one knows how high that has to be. For instance, when petrol went from 70 cents a litre to the current $1.50, consumption remained virtually unaltered. Users were annoyed at petrol stations and oil companies whom they considered were over charging but that didn't stop them buying fuel. Let the government try the same tactics in respect of electricity and all it is likely to achieve is electoral suicide.

How about a market mechanism? Such a mechanism is achievable by fixing the quantity of carbon that can be emitted and issuing permits that total that quantity? If emitters need to emit carbon they must buy permits. Alternatively if they can find an alternative that produces no carbon emissions they will save the price of the permits.

At what price should those permits be sold? Well, the best option would be to auction them. In that case if demand is high the price will rise and emitters will be encouraged all the more to seek alternatives. The whole system is working perfectly well in the US where the SOX (Sulpher Dioxide) permit system has gone a long way towards removing the 'acid rain' problem. Emitters initially claimed that system would be unaffordable. When it was introduced permits rose sharply in price but then fell with equal rapidity to eventually reach zero as emitters worked out ways to avoid the cost. In other words, the answers were available; all it took was the application of a financial incentive to cause emitters to make the switch. In addition sulphur dioxide emitters when 'push came to shove' preferred to invest in removing that chemical from their emissions rather than risk going out of business by allowing the price of their products to rise to the point of uncompetitiveness. Greenhouse gas is a much larger problem, particularly for Australia, however this mechanism appears to be the best way to achieve the desired result and it is what is currently being investigated.

To soften what would otherwise have the potential for causing massive disruptions during the transition, the concept of offsets should be introduced. This fits neatly into the concept of a permits market. The woody parts of trees are very largely carbon and trees also store carbon in their leaves and in the ground surrounding the trees.

Subsequently other means of capturing and retaining carbon either in the soil or in what is growing in the soil can and should be worked out such as seeding crops without ploughing and therefore not opening up the carbon in the sub-soil to the sun's rays which would result in its being converted into CO_2. Many land owners could be encouraged to grow trees and improve farming practices and they would receive electronic certificates of an equivalent emission tonnage to emission permits. These also could be sold in the market to emitters who needed them. A legal system to eliminate any rorting is possible in Australia at minimal cost.

The lengthy period of 100 years as the retention period for captured carbon causes some problems. If the SOX scenario were to apply in the case of carbon offsets the problem would be significantly reduced as tree owners could sell their offsets initially when the price was high and buy them back in the near future when the price fell. Unfortunately, there can be no guarantee that the SOX situation will be reproduced exactly as it has occurred in the US. As things currently stand the use of offsets would be very useful as a circuit breaker and consequently it may be desirable initially to set a much shorter period for retention so long as that period was progressively increased.

So the market system appears to offer flexible incentives, strong encouragement to reduce carbon emissions and less direct political risk to the government. The use of offsets tends to soften, what might otherwise, be a considerable disruption during the transition period. It also gives a market to land owners and others who are prepared to grow trees and/or improve farming practices and to trade in their carbon offsets.

To those who want to take action to reduce the carbon emissions that occur in the production of the electricity they use, by all means reduce your consumption by whatever means are available to you but don't expect any significant improvement as a result. Without question the most effective action you can take is to buy green electricity and make sure your friends do likewise. This compels your energy supplier to source the green electricity you order and reduce its purchases of coal or other fossil fuel sourced electricity which it would otherwise put into the system. That would be a real start.

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