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The subtitle of this workshop is ‘where do sustainable jobs come from?’ I am going to tackle this in a somewhat indirect way, and I hope you will bear with me.

If China can do it...

A similar question is being asked in China right now. China as you know is a huge and rapidly growing economy, with economic growth rate through the 1990s averaging around 10% per year. On one hand China is an economic powerhouse and a huge manufacturing centre; on the other hand it is a treasure house of World Heritage environmental and cultural sites and is starting to address ecologically sustainable development. My argument is going to be that, if China can shift towards a sustainable future, then it should be easy for Australia.

As you know, recently President George Bush announced that the USA would not ratify the Kyoto Protocol and its greenhouse gas (GHG) emissions targets. His main argument was that developing countries, particularly China, are not part of the Protocol. This was the excuse for withdrawing and actively campaigning to try and get Japan and other countries like Australia to also withdraw. The US administration is claiming that in 10-20 years China’s greenhouse gas emissions will overtake those of the United States, which is currently the world’s greatest greenhouse gas polluter.

The main problem with the US government position is that the Energy Information Administration of its own Department of Energy revealed quite recently that since 1997 China’s GHG emissions from fossil fuels have actually declined for the last two years in which they have been measured (1998 and 1999). The BP figures have also recently been released and they show that China’s GHG emissions have been declining for the last 4 years, including the year 2000. So there is something peculiar going on, because the Chinese economy is growing far faster than the US or the Australian economy and yet its greenhouse pollution and local air pollution are declining very rapidly.

I’ve been fortunate to visit China every year for the last four years as part of my work, and I have been stunned at the change in Beijing alone. A year ago in Beijing I saw blue sky on only one day out of a fortnight -- the other days featured thick smog. This year when I was there it was blue sky on all but one day -- not as bright blue as an Australian sky, but blue nevertheless.

In China the economy has continued to grow, while air pollution and GHG emissions have been declining. How this be explained? First of all, we have continuous data from 1980 to show China has been steadily improving the efficiency of its economy. But what is new, is that in 1997 China passed new laws that to make industry more energy efficient and to reduce air pollution. China has also started phasing out the massive subsidies made previously to fossil fuel production and use. And it is phasing out the use of coal burning in the domestic sector. Population control is also helping.

Another thing they have been doing is major construction of underground railways in major cities such as Shanghai, Beijing, Shenzhen and Chengdu, although it is still too early for that to show in reduced GHG emissions. They are setting in place major infrastructure, and so the emission reductions are not just a short-term fluke, they are likely to continue. Only a few years ago, China had seven of the ten worst air-polluted cities in the world. Now this is rapidly changing.

China is starting to develop a more sustainable economy. Of course, it has a long way to go, but so does Australia. In China one can also observe the opposite trend, that could lead to increased environmental pollution, for instance, the massive road building which is encouraging the number of motor cars to increase at a rate of 15% per year in the major cities. Cyclists are getting knocked over, to the extent that the major form of urban transport, by bicycle, is under serious threat.

In China we can see two countervailing trends. In one trend China is trying to emulate the American style consumption society, in which the motor car is seen as the central driving force for that kind of approach to economy. At the same time there is action for ecologically sustainable development. As they say in the Shanghai urban planning exhibition, "Shanghai wants to be one of the world's greatest commercial cities of the century, so we have to clean up our air and our river". And they are setting about doing it, in a manner which is amazing to see.

Australia does not have to be a quarry

What about Australia? Australia's case is actually much easier compared to China's, because Australia is not actually a quarry, in one sense. In an economic sense all the resource industries, including the coal industry and mineral industries, amount to a few percent of the Australia's GDP. But, in political terms these industries have enormous clout.

So when we talk about Australia as a quarry, it is not that we really need these industries. They give us some foreign exchange, but in terms of their contribution to total economic activity and employment they are minor players. The main industry sector in Australia is the service industry, which is number one by far. Parts of this sector are potentially very low in pollution production, and other parts, like tourism, are high but could become much lower. The second largest sector, and this is way behind the service industry, is light manufacturing.

So the Australian problem is not primarily an economic problem, provided we substitute for some of the imports we currently have. We could actually do away with large parts of the resource industry, particularly the aluminum industry, which receives about \$500 million dollars a year in subsidies. In fact it was National Economics under its old name of NIEIR, which wrote a report to the federal Department of the Environment several years ago exposing the huge subsidies and incentives that are being poured into the resource industries in Australia.

A student of mine at the Institute for Sustainable Futures, Chris Riedy, and myself are building on the work of National Economics to examine subsidies to the fossil fuel industries in more detail. We have already identified billions of dollars of subsidies still going into fossil fuels each year, especially as support for the motor car. These subsidies include tax concessions, diesel fuel rebates and the costs of excessive amounts of land devoted to roads and parking. Valuable land, which could be used for housing and small business, is being allocated to the motor car, in amounts far beyond

that in most other countries except the United States. So there is enormous potential to redirect some of the fossil fuel subsidies to more useful social, economic and environmental purposes.

Australia's 'green' industries

Now what do we see in Australia in terms of greener industries generally? There are really two types. There are the industries specifically devoted to producing green products, things like solar energy, wind power etc., and there are industries making ordinary products whose operations could be made much greener.

We are really only in the early stages of developing and expanding the green product industries. We have enormous abilities in Australia, but almost no government resources going in. One of the major programs, the Greenhouse Gas Abatement Program (GGAP), a \$400 million program, which the Democrats forced the government to agree to, devotes almost nothing going to renewable sources of energy or efficient energy use. Much GGAP spending is actually going to prop up fossil fuels. The really big renewable energy sources of the future, which are direct use of solar energy for hot water and electricity, and wind electric power, are not being funded at all under this program.

There are vast distortions in the economy. If there was a shift in the subsidy regime, it would be possible to give the green industries a kick start. They do not in fact need long term subsidies, but they do need nurturing in the early stages. Manufacturers of refrigerators in Australia say that, if they each had \$3 million dollars, they could design and tool up to make a far more energy efficient refrigerator, and make an enormous impact on greenhouse gas emissions. You can't get a really energy efficient refrigerator in Australia like you can in Europe. But you can't just import the Gram fridge from Denmark, because it is made for Danish climate conditions and does not perform well in Australian summers. So we really have to redesign something for Australia.

There is a whole range of 'green' Australian technologies, for instance water purification, water efficiency technologies, and technologies for turning green waste collected by local governments into useful products. All that already exists on a very small scale, but we don't have the market in Australia, and we don't have government support to build it. China has a very big market. So I am suggesting that there is actually an opportunity here for trade and other forms of cooperation between the two countries. Many Australian products could be developed in China under partnership arrangements, for a huge market, and China certainly needs energy efficient refrigerators, just like we do.

Greening ordinary industries

I am looking at the micro level, and Graham Larcombe is focussing on the large-scale economy. So I will just close with the other important area which is the ordinary technology. How can we green the ordinary technologies in Australia? Here I must say, there is very little in terms of case studies. Mining companies are publishing environmental and social audits every year. Although there is some value for a company to do this, most of the reports that I have seen can best be described as 'greenwash'.

I only know of two large corporations in Australia that are actually doing anything of substance to 'green' their operations on a large scale. One of them is Interface, which is a multinational corporation, but the CEO of that corporation had a 'road to Damascus' experience and he has turned his corporation around. Instead of selling carpets they are now selling or leasing 'floor covering services' in which and then they take back the floor covering when they are worn and they are moving towards a situation where they will re-manufacture them for reuse. Potentially there is enormous reduction in waste, but they have not actually completed the loop yet. They have made a lot of money around the world in terms of making their operation more eco-efficient, and have saved around US\$900 million. It does not have to be expensive to protect the environment!

Last week I attended the opening of the Fuji-Xerox re-manufacturing centre. They are taking back printers, photocopiers etc, and they are actually re-manufacturing them, producing from them new machines, for which they give the same guarantee. They don't sell them, they lease them, so they are taking responsibility for maintaining them. It is fantastic, they are employing people, reusing products, dramatically reducing landfill and making money at the same time.

Overseas thousands of new jobs are being created in the wind power industry in Europe. One company that manufactures wind generators, Vestas, directly employs 4000 people in Denmark and Germany. Windpower has become one of Denmark's largest export industries and a substantial employer.

These are the outstanding examples, if you want some on a large scale, but generally speaking the business scene in Australia is pretty dismal. The Ecos Corporation, which started by doing environmental consulting for Australian business, has shifted almost all its operations to the United States, simply because there are so few Australian companies wanting to actually do anything of substance. My own experience at the Institute for Sustainable Futures, with trying to build links with corporations, is that the vast majority are uninterested in doing anything beyond 'greenwash'.

The main barriers to a green economy

Finally, I believe that the problem is partly due economic fundamentalism, a term I prefer to economic 'rationalism', because fundamentalism whether, it is religious fundamentalism or economic, is a *selective* interpretation of an ideology. Selective, because if economic 'rationalism' was consistently and applied to the Australian economy, we would actually see some environmental improvement, e.g. from removing subsidies to the production and use of fossil fuels.

Although genuine economic 'rationalism' wouldn't be sufficient to create a sustainable society, as someone said this morning, because there are some things that the market cannot and does not handle. But if it were consistently applied, according to the rhetoric, as a first step, I think we would be better off in many ways with a less selective approach to economic rationalism.

Unfortunately it is not just economic fundamentalism that we are up against, it is the whole notion of a consumption society. It is really scary to go to a country like Bangladesh or China and see 39 channels of TV fully promoting, far more vigorously that we see in Australia, the high consumption lifestyle, whether it is using cars, or

clothes or junk food. That sort of stuff is going out across the world. That is really what we are really up against.