
From: Ken Hickson [mailto:kenhickson@bigpond.com]
Sent: Tuesday, 1 September 2009 10:15 AM
To: Environment and Resources Committee
Subject: submission on energy efficiency

Energy Efficiency

Please find attached three items which I submit to your committee as my submission on Energy Efficiency.

They include:

1. My submission to the Federal Government's Green Paper, which drew attention to Energy Efficiency as a major opportunity to reduce greenhouse gas emissions.
2. A paper I prepared entitled "A painless way to significantly reduce our greenhouse gas emissions" which was submitted to a Federal Government committee, calling for a national energy efficiency campaign.
3. An article I wrote for Carbon Planet's Be the Change magazine, entitled "Energy Efficiency gives us the triple whammy".

In addition, I have included numerous references to Energy Efficiency ideas and programs in Australia and abroad in my book "The ABC of Carbon". I have also repeatedly referenced articles on energy efficiency in my weekly e-newsletter **abc carbon express** and made editorial comment on the subject which I am passionate about. I also refer to the value of energy efficiency every time I speak at conferences and events.

I urge Queensland to show the way and lead the nation with a well-planned and managed Energy Efficiency campaign. Set standards for the country for energy efficiency, as the State has done with its very effective Water Restriction program in recent years.

Yours sincerely

Ken

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Editor e-newsletter: **abc carbon express** Author : **The ABC of Carbon**

Carbon Pollution Reduction Scheme

Government Green Paper

Submission from:

Ken Hickson

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Governor of WWF Australia

It is abundantly clear from Government statements, the business response to date to the Green Paper and Professor Garnaut’s latest review on Targets and Trajectories, that Australia will be a long way from meeting effective reductions in greenhouse gas emissions by 2020 or even 2050.

Garnaut sets an even lower target of 10% reduction in emissions, and as you would expect from knowledgeable NGOs like The Climate Institute, Clean Energy Council, WWF and ACF they all agree that it is not half enough!

The media’s obsession with an emission trading scheme— and a business community that is determined to see its effectiveness dismantled – obscures the very obvious need for other measures that could together make up for the deficiencies of a cap and trade/carbon tax process.

So what could we be doing in addition to or in association with the Carbon Pollution Reduction Scheme?

There are six main measures that Government must spearhead:

1. **Investment in renewable energy.** This needs to be significant and long lasting. It is the next big thing. We are constantly hearing of gains made by savvy investor overseas – in the US, in China, in India, in Europe. Of course there is some investment in Australia already in renewable energy – wind, solar, wave, bio-fuels – but we are putting more energy and money into coal seam gas and clean coal research. Not a bad thing in itself. But billions – not millions - of dollars must go into totally clean and renewable energy. It should start now. Government must provide more than a target of 20% of energy from renewable sources by 2020. What is needed is a strategy as to how we are going to achieve that – what mix of renewable energy and what price. There needs to be incentives to investors.
2. **Promote Energy efficiency** at all levels – home, office, factory and on the road – which could effortlessly reduce our energy use , our dependence of fossil fuels and cut our emissions dramatically, if we set our minds to it. It needs a Federal and State Government campaign to educate and persuade. It could be of the same order as Queensland’s successful water saving plan. We don’t think it would be difficult, for example, for many homes and offices to cut their electricity

use by 50%. Aligned to this is the need to encourage and incentivise a voluntary market for companies large and small to head towards carbon neutrality – reduce energy and reduce emissions – and if necessary offset emissions. A voluntary carbon trading market should be allowed to operate in tandem with the CPRS.

3. **Investment in trees and other suitable planting.** Caring for our land, planting trees, saving conservation area and treating soil carbon as a valuable resource. Stop clearing so much land, and cutting down so many trees. Stop the burning. Deforestation the world over amounts to around 18% of global emissions. We are contributing our share. But we can change all that by sensible and sustainable forestry management as well as by preserving rainforests for all time at home and abroad.
4. **Invest in research and development** for climate change solutions and technological advances in new and clean energy. Encourage our institutions here and overseas to co-operate. There appears to be duplication of effort, energy and money. Share resources and findings. Look for new technological solutions as well as age-old remedies to save energy and produce energy. Scour the world for ideas and put them into effect. There is a lot of far-reaching research work going on but it lacks co-ordination. Keep our best brains at work but encourage a co-operative approach to ensure we get the best results.
5. **Manage our waste and our water.** We can produce less waste – look at ways to eliminate unnecessary packaging for a start – and we can make greater use of recycling in our homes, offices and factories. It involves more than reducing the waste that goes to land-fill to a total re-thinking of what we need and what we use. We need to invest more in waste-to-energy plants, as well as better management of our water. We need to re-engineer our production to use less materials, energy and water. We need to explore ways to prevent waste at all stages of the production and distribution cycle. There are some great examples of how to do this – Interface, Veolia and Clean Events are three good businesses operating in Australia which know how to achieve effective waste management.
6. **Reduce our reliance on fossils fuels.** There is far too much investment in roads and infrastructure designed to keep more trucks and private cars on the road. We have an effective rail network but it seems more heavy goods are freighted by road. We need to invest in effective low or zero emission public transport for our cities. We need to make it easier and safer for people to get around on foot or by bicycle. The move towards electric, hybrid or hydrogen transport – including private cars – is to be encouraged, but in the meantime we must reduce our reliance on fossils fuels. Save petrol, save money. Walk, cycle or use public transport. This needs a co-operative approach between Federal and State Governments and agencies, as well as infrastructure developer and road users.

Ken Hickson

9 September 2008

What could help turn Australia into a low carbon economy, create jobs, as well as take greater strides towards meeting realistic and higher emission reduction targets?

The answer in two words is Energy Efficiency.

It is not easy in this climate change/carbon-aware world to find such an all-encompassing solution as this. It has the potential to be faster acting and produce the better outcomes than the emissions trading scheme that is currently on the table.

It is not a political hot potato like carbon capture and storage, which still has some way to go to be technically and economically feasible.

It does not take such a massive investment as renewable energy – but it should be said that in an ideal carbon-constrained world, Australia should be moving faster to reach its renewable energy targets of 20% of energy from renewable sources by 2020.

Why energy efficiency? And how can it be done?

Energy efficiency works on many fronts. It has a triple whammy effect.

It works for home owners, offices, factories and educational institutions in the same way.

Not only does it reduce energy use – particularly from fossil fuels – it also reduces emissions of greenhouse gases. And significantly – and this is a major selling point in these financially constrained times, it reduces costs.

This is not rocket science. And maybe because it is so obvious that we as a nation have not taken this process so seriously. We have perhaps seen it as a sideline event and not the main game.

But it is possible to show that an effective energy efficiency campaign on the national, state and local level could achieve far more in reduction of emissions than CPRS.

Here's how in ten easy lessons:

1. Businesses of all sizes and shapes will be encouraged (and given incentives) to be more energy efficient in every way. Compulsory energy audits would be undertaken (Government has made a start on this) and businesses given grants, tax concessions and whatever else it takes to set targets and achieve energy savings of say 25%.
2. Buildings throughout the country – currently responsible for 18% of the nation's emissions – will be retrofitted, redesigned, and re-build if necessary to significantly reduce costly energy use and eliminate loss of energy. The Government insulation grants were a step in the right direction. The Property Council of Australia has been urging for more funding in this direction.
3. Householders will be not only given energy meters to use, they will be told what their energy use (electricity, gas, petrol) should be. Every household will have a target (bring on the "carbon cops"!) and the energy supply companies will keep people on track. There will

be incentives to save energy. Efforts in the last three years to reduce water use through public education and restrictions have worked in those states that have embarked on it seriously. A similar approach to energy is vital across the country.

4. Urban dwellers will be encouraged to use their private cars less and public transport more. Federal, State and Local Government will invest more in public transport, as well as encourage cycling and walking. It will become more expensive to use the private car. Car sharing will be encouraged.
5. More freight should move by rail than road. This will reduce cost and energy use, and help reduce the emissions from the road freight industry. This will take a little longer to happen, but the Railway industry is ready, willing and able to facilitate this.
6. Universities and schools will be provided with incentives, not only to install solar panels, but also to reduce their energy use. For example, John Baker at Monash University looked into saving power by having an automatic shut off of all PC's on the network at a specific after hour's time. This involved 30,000 PC's under power management with an average consumption of 1,490 kilowatt hours per annum each. The savings with auto shutdown amounted to 14,421,585 kWh. At 12 cents per kWh, 9 hours per workday, 22 workdays per month, provide a total financial saving of \$1,745,012 per annum. That's \$1.7 million dollars saved! Let's look at it this way: 200 computers under power management is equivalent to 96 tonnes of CO₂ pollution saved or 16 cars off the roads or 26 acres of trees planted every year.
7. The agriculture sector will need to be encouraged to use less energy and look at alternatives to diesel, petrol, gas, oil and coal. Bio gas and other bio fuels are viable and in the US are more widely used down on the farm. Solar and wind can work well, particularly in localised situations. Not only can farmers reduce their use of fossil fuels, they can also become more actively involved in sustainable agriculture and benefit from the research in biochar and soil carbon to store carbon and make the soil more productive.
8. Smaller communities across Australia can embark on energy co-generation projects. This involves both conventional energy saving, as well as embarking on renewable energy to suit the local environment. There are many examples from overseas – and a few in Australia – to call on.
9. Australia must maintain a voluntary carbon credit and offset scheme as this provides businesses large and small, as well as householders, with an opportunity to measure and manage their carbon footprint and contribute positively to reduce their dependence on fossil fuels, embark on energy efficiency and tree planting projects.
10. There is little doubt that the Clean Energy Council, WWF, the Australian Conservation Council and The Climate Institute would all support an energy efficiency campaign, as well as promote a switch to renewable energy. This would also gain the support of the energy and resources industry. Jobs would be created in the process – think of the businesses and workers required to retrofit all buildings in Australia!

Will it work? Of course it will. If realistic targets are set for businesses and householders to reduce their energy use (in the same way many Australians have accepted and achieved lower water use).

An economist needs to look at the numbers, but if you follow the Monash University example of power saving - 200 computers under power management is equivalent to 96 tonnes of CO₂ pollution saved or 16 cars off the roads or 26 acres of trees planted every year – that can be

multiplied nationally across all industries, homes, schools - and all energy uses - to produce a massive reduction of energy, reduction of emissions and cost savings.

Why wouldn't we do it?

Some quotes and sources:

"Energy Efficiency would provide around one quarter of the gains necessary, and incidentally, save money, but its significance is often ignored"

Former British PM Tony Blair (June 2008)

25% of the total reductions can be realized with positive returns...mostly through energy efficiency

An Australian Cost Curve for Greenhouse Gas Reduction - McKinsey 2008

The United States can cost-effectively reduce energy consumption by 25-30% or more!
ACEEE 2008

"Energy efficiency is a means of using less energy to provide the same (or greater) level of energy services. With efficiency we can drive the same distance with less petrol or watch the same program with fewer kilowatt-hours of electricity".

Karen Ehrhardt-Martinez and John A. "Skip" Laitner – ACEEE May 2008

In Australia, energy efficiency could conservatively deliver -

- **a 9% reduction in energy consumption**
- **9% reduction in greenhouse emissions – down**

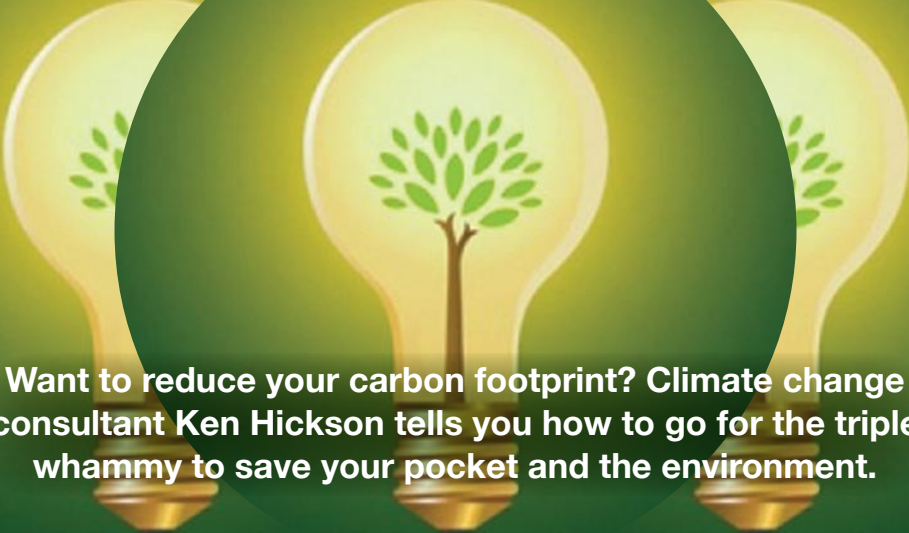
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- **\$1.8 billion increase in Australia's real GDP**
- **9,000 more jobs**

NFEE modelling 2003



Energy efficiency gives us a triple whammy!



Want to reduce your carbon footprint? Climate change consultant Ken Hickson tells you how to go for the triple whammy to save your pocket and the environment.

There are a lot of things we can all do – must do – to reduce our emissions of greenhouse gases. One that seems obvious is reducing the amount of energy we use at home, at school and university, in the office, on the factory floor and on the road. I have been able to cut back my energy use – electricity in the home and petrol on the road – by at least half over the past two years.

Most of the electricity I use comes from coal-fired power stations, and my car used petrol/oil from fossil fuels. I manage now without a car, using a share vehicle from GoGet and relying on public transport. We are also ultra careful to switch off lights and appliances when not needed. It works.

A friend at a university in Melbourne looked into saving power by having an automatic shut-off of all PC's on the network at a specific time after-hours. This involved 30 000 PC's with an average consumption of 1490 kilowatt hours (kWh) per year each. The savings amounted to 14 421 585kWh. At 12 cents per kWh, nine hours per workday, 22 workdays per month, that's a total saving of \$1 745 012 each year.

Or look at it this way: 200 computers under power management is equivalent to 96 tonnes of CO₂ pollution saved, 16 cars off the roads or 26 acres of trees planted every year. Wouldn't you want your office, school or university to do that? Save energy, reduce emissions and save money. Triple whammy!

Last year, I made a submission to the Government on the Green Paper for the Carbon Pollution Reduction Scheme (CPRS). Here's what I said about energy efficiency:

Promote energy efficiency at all levels – home, office, factory and on the road – which could effortlessly reduce our energy use, our dependence on fossil fuels and cut our emissions dramatically, if we set our minds to it. It needs a Federal and State Government campaign to educate and persuade. It could be of the same order as Queensland's successful water-saving plan. We don't think it would be difficult, for example, for many homes and offices to cut their electricity use by 50 percent. Aligned to this is the need to encourage and incentivise a voluntary market for companies large and small to head towards carbon neutrality – reduce energy and reduce emissions – and if necessary, offset emissions. A voluntary carbon trading market should be allowed to operate in tandem with the CPRS.

It now looks like the scheme is unlikely to become law. So shouldn't the Government be looking at all the other ways to help us meet realistic targets for emission reductions, like renewable energy and energy efficiency?

If I can do it, everyone can. If 50 percent is too much to tackle, what about 25 percent? That would still give a massive reduction and is more than the CPRS could do in its watered down, concession-laden final form.

Let's go for energy efficiency in a big way.

www.abccarbon.com ■

Ken Hickson is a climate change consultant, author, business coach and lecturer. His book, *The ABC of Carbon: Issues and Opportunities in the Global Climate Change Environment*, is due out soon. He also produces a weekly climate change e-newsletter *Abc Carbon Express*.