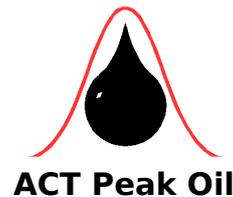


Submission by ACT Peak Oil on the Federal Budget 2008

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Executive Summary

ACT Peak Oil calls on the Government, in determining policy, to abide by a number of *guiding principles* including:

- An energy carrying substance is only worth producing if the energy obtained is greater than the energy to collect it for use, that is, has positive EROIE
- Petroleum is of very high quality and difficult to substitute
- The Laws of Thermodynamics say that energy is neither created nor destroyed, but can only be changed to another form of energy but, in the process, some energy is lost as unusable heat energy (entropy)
- Science is a process of inquiry, not a set of laws or absolute truths thus government must reject acceptance of beliefs that contradict observational evidence
- There are limits to growth in a finite system
- Economics can provide insights but is subordinate to ecology
- Shared resources can be depleted or polluted by people who do not feel the full cost of their actions thus the Polluter Pays Principle must apply
- Policy must not advantage the old at the expense of the young nor those yet to come
- As the wealthy can shield themselves from the effects of their behaviour and thus have little incentive to conserve resources, extreme wealth disparity must be avoided
- Preventative action should be taken even when there is not 100 per cent proof that something will happen (Precautionary Principle)

ACT Peak Oil makes the following *recommendations*:

- The urgent establishment of an Oil Vulnerability Commission with wide-ranging terms of reference
- The abolition of FBT concession for motor vehicles and 4WD import duty concessions
- The Government proceed with caution in developing biofuels, ensuring that there are positive energy benefits and minimal environmental damage
- The Government encourage the development of electrified mass transit powered from renewable sources
- Sufficient powers be given to the Federal Housing Minister to require State and local governments to control suburban sprawl
- A dramatic reduction vehicle registration fees and added tax on petrol, LPG and diesel fuel to compensate
- All 'mileage' allowances or reimbursements be based on a modest 4-cylinder 1500cc car
- MPs be given a 4 cylinder 1500cc car and, if they require a bigger one, that they pay for it out of their allowances
- All future Productivity Commission inquiries take account of environmental externalities
- The Commonwealth help initiate international negotiations towards an oil depletion protocol
- The Government implement the Australian National Cycling Strategy 2005-2010 with both conventional and electric bikes in mind, and that it greatly increase spending on cycling infrastructure
- The Government adopt Transportation Demand Management (TDM) and embark on a wide-ranging review of distortions in energy consumption due to the tax system
- **The imminent and profoundly disruptive arrival of Peak Oil should be explicitly acknowledged in preparing Australian Government policy.**

Background

'Peak Oil' is the imminent global peak and irreversible decline of world oil production. Some commentators such as retired petroleum engineer Kenneth Deffeyes believe the peak has already passed (Deffeyes 2005) while other predict it will occur before 2010. Many economists, as against petroleum engineers, believe the peak may not be for another two or more decades though they do concede it will happen sometime given oil is a finite resource. The fact that oil has hit \$100 USD a barrel (though declined slightly) suggests demand is beginning to outstrip supply and the peak is close.

Peak Oil is a phenomena too long ignored by government although there is increasing media coverage, for example, the 7.30 Report on ABC-TV of 17 January (Brewster,2008). In this program, the General

Manager of General Motors, called for a change in car technology consequent on the peaking of oil.

The group ACT Peak Oil was formed in early 2005 by Canberrans concerned about its implications. ACT Peak Oil has made a number of submissions, in particular to the Senate inquiry into Australia's future oil supply (Pollard, 2006). We subsequently also appeared before the committee.

We believe the new Federal Government's historical legacy may well come to be defined by how it handles, or ignores, Peak Oil.

We believe the ramifications of Peak Oil, such as rising transport fuel prices, will become increasingly apparent as an underlying cause of many of this Government's biggest problems. Unfortunately, the previous Labor Government's Button Car Plan to rationalise Australian car manufacturers, failed to also demand changes to Australian-made cars to make them more fuel-efficient. Our car manufacturers have largely continued to make larger cars, sales of these have fallen relative to the smaller, often imported cars and this situation is becoming financially difficult for GM and Mitsubishi. It is thus no surprise that the manager of GM should now call for changes in car technology.

Future scenario

High international oil prices drive up the cost of living for Australians, as they pay more and more for private transport. Prices paid by producers also increase, with costs passed on to consumers. As people divert their incomes increasingly to pay for everyday expenses, housing investment declines, leading to a stagnant market. As capital gains dry up, investors force rents up. Unable to afford interest rate burdens, property investors sell, bringing inflated asset values down, and forcing others to sell. The property market enters a long decline.

The risk of bad debts and the lack of new borrowing forces banks to increase the profitability of their existing mortgage portfolios. They lift their interest rates – whether the Reserve Bank officially sponsors the increase or not.

Those unable to afford high rent are forced to the urban fringe. Without adequate public transport and poor urban planning, they must endure hours of traffic congestion each working day to reach well-paid employment. The increasing price of petrol forces many out of the workforce, especially as some cannot even afford to drive their children to childcare.

Australia's consumer-led economy falls into recession. Past borrowing had not been for investment in infrastructure and capacity to cope with Peak Oil – productive infrastructure which would earn income to

pay down the debt. Instead the “prosperity”, or rather, consumption, had been funded by an unprecedented debt binge, which must now be repaid out of current and future income. What investment there had been is largely “invested” in non-productive property speculation. And what new buildings that had been added to the housing stock are energy-inefficient, and are far-flung, requiring expensive car trips for daily needs.

Biofuels offer little relief, as its production is energy intensive (probably a net energy loss) and even with tax subsidies is poor value for money. Additionally it takes up an increasing proportion of international food supply, forcing up the price of daily essentials.

The drought, driven by Climate Change, compounds the crisis. Agriculture is hard-hit by ballooning fertiliser prices, as natural gas feed-stock is diverted as a substitute for petroleum. Diesel for running farm equipment surges in price. The trade deficit rises as the oil imports increase and food exports decrease. Lower domestic consumption does little to improve the trade deficit as oil is an essential for daily living.

An oil export crisis develops as oil producing nations retain their production for domestic consumption. International oil exports decline faster than the rate of world production. Australia, being a net oil importer, is hard-hit. International aviation shrinks and Australia’s tourism industry is decimated, leading to a further worsening of the trade deficit.

Tax revenues shrink as unemployment and social security payments rise. The equity markets perform poorly as investors chase the few assets with a positive outlook (such as oil producers and bullion). The Consumer Price Index surges, rendering retirement savings inadequate. Superannuation fails to deliver the expected retirement incomes, causing many to fall back on the pension. The Future Fund also fails to anticipate the future and makes lower-than-expected returns.

The trade deficit can no longer be funded by investment flows. Australian banks are now borrowing much less from overseas to loan domestically. This demand for the Australian dollar falls while the international supply of the \$A is plentiful from our oil imports. The Reserve Bank cannot prop up \$A demand any further by running down its foreign reserves. The Australian dollar falls. The risk of currency losses from \$A-denominated investments climbs. Domestic interest rates rise further. The structural demand for expensive imported oil is high per capita compared to most other developed nations. With no prospect of the trade deficit improving, foreign investors see no end to \$A weakness.

But this is not just a future scenario, some of it is already happening.

Peak Oil Outlook

The world is experiencing a confluence of two major challenges: Peak Oil and Climate Change. Many of the policy imperatives for climate change such as a fuel excise or carbon tax, however, are inadequate to deal with the externality of oil scarcity. Currently, those nations with energy resources are advantaged but this will change in favour of nations who have the technology to utilise free resources such as the sun.

Principles

Before dealing with specific policy proposals, we would like to emphasise the following guiding principles for government decision-making.

Physical constraints

- Energy return on energy invested (EROEI)

An energy carrying substance is generally only worth producing if the energy obtained from it is greater than the energy required to collect, extract and ready it for use. Presently there is doubt that ethanol is worth producing as a fuel for this reason since it currently requires diesel and oil-derived fertilisers to farm and transport the feedstock (Pimentel et al, 2005). Note that the EROEI of ethanol produced from sugar cane in Brazil is improved by use of the cane trash or stubble as a fuel during processing and distillation.

- Energy quality

Fuel quality is a rough measure of how easy it is to transform the fuel into usable energy. Petroleum in particular has a very high quality, due to its high energy density and being a liquid. A negative EROEI may be worthwhile if it creates a fuel with a higher quality – e.g. turning coal into oil.

- The Laws of Thermodynamics

In essence that energy is neither created nor destroyed, but is transformed into other forms of energy, and inexorably, tends to be dissipated as unusable heat energy. Usable energy is known as exergy. Unusable energy is entropy. No thermodynamic system can operate at 100 per cent efficiency, and is almost always at a fraction of that. More energy is lost with each additional step in a process.

Broader principles

- Scientific approach

Science is a process of inquiry, not a set of laws or absolute truths. As such, government should avoid slipping into complacent acceptance of beliefs (popular, institutional or otherwise) in contradiction of observational evidence. An inquisitive, open-minded approach is required for finding the best options.

- The Limits to Growth

There are limits to exponential growth in a finite system. Growth tends to overshoot if there is inadequate knowledge of available resource supplies and pollution sinks, or a lack of foresight. In the worst case there is the possibility of die-off. So if we have little idea how much oil is left, yet continue to grow the economy or population as fast as we can, disaster awaits us. There is an inexorable tendency for new and insurmountable limits to emerge as a result of attempting to evade other limits. This was the crucial but usually forgotten insight of *Limits to Growth: Beyond the Limits* (Meadows et al, 2004). Techno-fixes cannot solve all of our biggest problems.

- Appropriate use of economics

Economics offers insights into how to achieve ends in the most efficient way and how rational people are likely to behave. For instance, if oil producers in the Middle East fear their reserves will be taken unlawfully, they may sell the oil at fire-sale prices, giving the false impression that oil is plentiful. It seems their fears were justified. Respect for property rights is a basic principle of economics. Nonetheless economics is subordinate to ecology and needs to be seen in that context. There is no economy without the environment.

- Avoiding the tragedy of the commons

Shared resources can be depleted or polluted by people who do not feel the full costs of their own actions, but when everyone does the same thing, everyone suffers – costs are externalised. Economic systems need to take account of this by internalising externalities e.g. by taxing or banning. This is the basis for the Polluter Pays Principle.

- Intergenerational equity

Governments need to make human development sustainable so that older people do not advantage themselves at the expense of the young and those yet to come.

- Wealth equality

The wealthy usually have a greater say as to how society works, but if they can shield themselves from the consequences of their behaviour (i.e. externalise them) then they have little incentive to conserve resources and reduce pollution – unless they are particularly

conscientious. Extreme wealth disparity is a threat to a society's survival.

- The Precautionary Principle - the problem of insufficient information

In assessing the cost and benefits of action, government must assess the risk of worst- case scenarios eventuating and account for this. For instance, even if there is only a 10 per cent probability of disastrous climate change, prudent insurance risk management would recommend taking preventative action. Similarly, this is the case for Peak Oil. As the WA transport minister said (MacTiernan 2004) "It is also certain that the cost of preparing too early is nowhere near the cost of not being ready on time."

Recommendation: That government adopt the above principles prior to evaluating or committing to measures to ameliorate Peak Oil.

Specific Proposals

- ***Oil Vulnerability Commission***

ACT Peak Oil strongly endorses establishment of an Oil Vulnerability Commission as proposed by ASPO Australia (ref). In order to make wise policy decisions much more information is required about our future energy supplies, not least of which is accurate data on the size and condition of the remaining world oil reserves.

According to *Twilight in the Desert: The coming Saudi oil shock and the world economy* (Simmons 2004, p80-81), estimates supposedly made by anonymous sources at major world ports as to the volume, source and destination of oil shipments have become the basis for official IEA oil supply figures. This is unacceptable.

Simmons' book casts doubt on the state of Saudi reserves. Saudi Arabia, held up as the world's last swing producer, with plentiful reserves that will supposedly keep up with demand, has been very secretive. Using technical reports of the Society of Petroleum Engineers he demonstrates that Saudi Arabia is not being upfront. For instance, he tellingly describes how, while Aramco (the Saudi state oil company) has been extracting oil at unsustainable rates at various times, little apparent attempt was made to use other fields now touted as major oil sources for the coming decades. This would be at odds with good reserve management, as extracting oil too fast from a field can reduce the total amount of crude ultimately recovered. Why hasn't Saudi Arabia brought these bountiful future fields on line already? Simmons doubts these fields will cover the shortfall as Ghawar and other major fields go into decline. The decline could be rapid, as illustrated by the production profile of 8 giant fields (Simmons 2004 p288).

If Saudi Arabian production declines, the world will have likely peaked. Saudi Arabia is not the only nation with dubious reserve figures.

In the absence of reliable data, the government should assume the worst and act accordingly.

Recommendation: That the Government urgently establish an Oil Vulnerability Commission with wide-ranging terms of reference, and implement its findings.

- ***Tax concessions for salary packaged and four wheel drive (4WD) vehicles***

Cars provided in salary packages are presently subject to FBT concessions. This has become a \$1 billion p.a. financial burden. One of the indirect consequences of current FBT regulations is that they encourage greater use of cars to qualify for a lower tax rate. Also, buyers of 4WD vehicles pay only a 5 per cent import duty compared with the 10 per cent rate for cars. This amounts to a subsidy of over \$100 million annually (Denniss, 2003) for vehicles which use considerably more petrol than an average sedan.

Recommendation: The FBT concession for motor vehicles and the 4WD import duty concession should be abolished.

- ***Mass transit***

As Treasurer Wayne Swan said in his media release of 16 December 2007, we must meet the challenge of the need for 'modern infrastructure'. Electrified mass transit can be powered from renewable sources such as electricity produced from wind. Perth Metro is a great example of a current modern infrastructure project.

Recommendation: The Government should encourage the development of electrified mass transit powered from renewable sources.

- ***Biofuels***

Biofuels such as ethanol grown from palm oil are often not the salvation they have been touted to be. Palm oil has caused drastic loss of habitat in many tropical countries, putting at risk such species as the Orangutan. There are some exceptions, such as ethanol made from switch grass that is said to have an EROEI of five, but all biofuels must be rigorously assessed for net energy benefits.

Recommendation: The Government proceed with caution in developing biofuels, ensuring that there are positive energy benefits and minimal environmental damage.

- ***Greater Federal powers***

As there is an emergency looming, the Federal housing minister needs the power to require State and local government to impose sensible controls on suburban sprawl (see the DVD "The End of Suburbia"). There is massive corruption and insider trading in real estate trading/speculation, which could be stopped by federal intervention.

Recommendation: Sufficient powers should be given to the Federal Housing Minister to require State and local governments to control suburban sprawl.

With this legislation abolish vehicle registration fees (except for a nominal amount of, say, \$25.00 to cover the administrative costs of administering vehicle registration) and add a tax on petrol, LPG and diesel fuel to compensate. That is, the change should be revenue neutral.

Recommendation: The Government adopt a revenue neutral scheme involving a dramatic reduction vehicle registration fees, but added tax on petrol, LPG and diesel fuel to compensate.

'Mileage' allowances

All "mileage" allowances paid to Commonwealth public servants, people travelling on Commonwealth business, business tax concessions etc. should be based on a modest 4-cylinder 1500cc vehicle. If anyone, be they tradesman or hire car owner, needs a bigger car they should be free to buy one, but for taxation/mileage/reimbursement purposes, it should be a 4-cylinder 1500cc.

Recommendation: All 'mileage' allowances or reimbursements must be based on a modest 4-cylinder 1500cc car.

MP's cars

MPs must set an example to the rest of the community. MPs should be given a 4 cylinder 1500cc and if they need a bigger car, they should pay for it out of their allowances.

Recommendation: MPs should be given cars no bigger than 4 cylinder 1500cc and that payment for any bigger cars come out of their allowances.

Productivity Commission Inquiries

Productivity Commission inquiries need to take into account environmental externalities. All its past inquiries have treated oil as inexhaustible and the environment as a free dump.

Recommendation: All future Productivity Inquiries must take into account environmental externalities.

International oil depletion protocol

World-wide oil dependence is afflicted by “the tragedy of the commons” wherein prior to the Peak there is no incentive to curtail consumption for fear that rival nations will gain advantage by consuming what we forego.

The Association for the Study of Peak Oil and Gas (ASPO) has proposed an international oil depletion protocol known as the “Rimini Protocol” or the “Uppsala Protocol”. Participating oil producing nations would voluntarily reduce production to match their depletion rate. Participating oil consuming nations would reduce their imports at the world oil depletion rate. The objective is to minimise international upheaval by cooperatively managing the oil price while encouraging conservation (Heinberg, 2005). The alternative could be war and economic collapse on an unprecedented scale. At the very least it would combat the view that Australia can go it alone, squandering its own gas and oil resources while the rest of the world fights amongst itself.

Recommendation: the Commonwealth should help initiate international negotiations toward an oil depletion protocol.

Cycling

Cycling is a very promising option great health and environmental outcomes. Recent advances have seen the emergence of the electric bike, essentially a conventional bike with a compact electric motor and a battery pack. Electric bikes open up cycling to those inhibited by hills, long distances or a disability. Cycling is likely to become the most popular alternative to the daily commute by car. As it becomes more popular, demand for cycling infrastructure will grow. Unfortunately bikes with motors with output greater than 200 Watt must be registered. This threshold should be discarded and replaced with a speed limit.

Recommendation: The Government should implement the Australian National Cycling Strategy 2005-2010 with both conventional and electric bikes in mind and greatly increase spending on cycling infrastructure.

Transportation Demand Management

Transportation demand management (TDM) has been shown to be the most effective way to reduce fuel consumption (Litman 2004). Methods include Pay-As-You-Drive car insurance and registration (Litman 2005).

Australia is a world leader in individualised marketing of sustainable transport. These programs are highly cost-effective and achieve decreases in fuel usage of around 12-13 per cent overall (Robinson 2004, Socialdata 2004).

Changes to the tax system, such as Fringe Benefits Tax concessions for vehicles, would give people greater incentive to make the switch away from cars sooner (Denniss, 2003).

Recommendation: government adopt TDM to reduce fuel consumption; and embark on a wide-ranging review of distortions in energy consumption due to the tax system.

Recommendation:

The imminent and profoundly disruptive arrival of Peak Oil should be explicitly acknowledged in preparing Australian Government policy.

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