**HOUSE OF REPRESENTATIVES STANDING COMMITTEE ON ENVIRONMENT AND HERITAGE**

# Inquiry into a Sustainability Charter

**Submission to the Inquiry by Alan Parker Design**

**12-5-06**

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## PURPOSE OF THIS SUBMISSION

**This submission focuses on the passenger transport sector and liquid fuel energy sector and proposes indicators and targets for these sectors.**

There is critical need for transport and energy indicators of the unsustainable growth of per capita oil consumption and for monitoring the effectiveness of demand management measures in reducing oil consumption in passenger and freight transport. As the Sustainable Cities Report notes at the top of page 1 "Sustainability is a journey and not a destination" and the report's recommendation make it clear that this journey will take several decades. However, the Sustainable Cities Report virtually ignores peak oil (See this submission page 1) as a serious consideration even though there was research produced in 2005 showing that, without oil conservation, in a few years there may not be enough of the easy oil left to build the infrastructure and green products, or to produce the food required for sustenance on that sustainable journey to a secure future beyond the age of cheap oil.

Perhaps the reason for ignoring world conventional oil production peaking and then steadily declining by at least 2% per year is that in August 2003, when the Sustainable Cities Inquiry and its terms of reference were initiated, the price of crude oil was only US$23 a barrel, Australian government agencies were predicting that oil would only be around US$30 a barrel in April 2006.

The reality is that oil reached US$ 75 a barrel in April 2006 with many private sector researchers predicting near future prices well over US$100 a barrel. Many experienced geologists and energy experts claimed that peak oil was only a few years away: notably Bakhtiari (Iran); Skrebowski (UK); Campbell (Ireland) and Simmons, Deffeyes and Goodstein from the United States.

Furthermore, the rapid decline in domestic oil production and the reduction in the energy return on energy invested in new oil fields (see figures 3 and 4 appendix A) were not considered. The doubling of the price of oil in the last two years has left Australia will a crude oil trade deficit of $3.5 billion in 2004-05 and it is forecast that by 2015 Australian oil production will only provide for 30% of domestic consumption.

**December 2005: Sweden is establishing transport and energy indicators and establishing targets to seriously reduce oil dependency.**

The Sustainable Cities Report took evidence regarding the Swedish model's setting out of environmental objectives in 2004, which was regarded as an example of world best practice. The HOR Standing Committee should note that the Swedish government has now recognised the serious threat to Swedish national security posed by peak oil and has upgraded its approach to achieving sustainability objectives to include severely limiting the use of oil for transport. (See Box below)

It would be prudent for the HOR standing committee to do the same. It should be noted that the price of petrol in Sweden was $2 a litre in September 2005 and that this will mostly likely be increased and the revenue used to provide better alternative transport services.

SWEDISH GOVERNMENT EMBRACES PEAK OIL By Lars Olofsson
Published on Saturday, December 17, 2005 by Energy Bulletin.

The Swedish Prime Minister, Göran Persson, has founded a non-political committee with the intent of making Sweden fossil fuel-independent by 2020. The committee will study and propose measures and mitigation over the next six months, and will present their findings and suggestions this summer. An initial hearing in front of an assembled audience of journalists and other interested people were held 13th of December. As a public government hearing it is available as a series of TV web casts from the Swedish government's web site.

The hearing began with a speech the Prime Minister stating that we are about to experience the oil peak and so need to assess measures to mitigate its effects and to transform society to adapt to this, including looking on how transport and car use will look in the future. PM Persson underscored that Sweden is very fortunate to have vast agricultural and forestry resources, and to have excellent access to fresh water and no need for irrigation. The general theme of the hearing was one of Swedish style consensus and non-confrontation, and one can but assume that biofuels, both for transport and electricity generation and heating will be the focus of the committees work.

Today Sweden gets almost all of it's electricity from nuclear and hydroelectric power, and mostly relies on fossil fuels only for transport; most of the heating has been converted to electric space heating, biofuels and waste recycling, with a small percentage remains fossil fuelled. A 1980 referendum decided that nuclear power is to be phased out, although this

has been severely delayed so far, with the exception of the mothballing of the Barsebäck 1 and 2 reactors. Recently there has been trend in Sweden towards increased sales of flexifuel E85 (ethanol) vehicles and fuel, and there are projects underway increase native production of ethanol and synthetic fuels from forest industry waste.

Material in Swedish may be found at: www.regeringen.se/sb/d/6023/a/53852

**Why a risk management approach is needed in the application of indicators and the setting of targets?**

If Sweden regards peak oil as a serious threat to national security that must be given priority, well before it occurs, then this a sensible risk management approach. If Sweden were to reduce the demand for oil and conserve oil for essential purposes it would be prudent for Australia to do the same.

It is important for an Australian Sustainability Charter to recognise that research published in 2005 and 2006 shows that reducing oil dependence on both the supply and demand sides by the world's major oil consumers must be initiated more than 20 years in advance of oil peaking to avoid a global economic meltdown. However, it is likely that oil peaking may occur much earlier than that. According to a US Department of Energy report there are three possible outcomes. (Hirsch 2005)

1. In the bleakest outcome peak oil occurs between 2008 and 2012 inducing a worldwide depression, collapsing world food production, and wrecking the Australian economy. As urban economies collapse businesses will no longer be able to afford to move goods and people. People will struggle to survive in increasingly isolated outer urban communities and will have to learn to become self-sufficient, with most journeys made by bicycle, on foot or by limited public transport services. Note that the Association for the Study of Peak Oil (ASPO) predicts that oil will peak around 2010 and states that oil peaking is a risk management problem of global proportions that is not being addressed by governments.

2. If oil peaks between 2015 and 2025 a less painful adaptation is possible; provided that most developed nations agree to reduce oil dependence with strong government market intervention, including the introduction of fuel rationing and fuel efficiency standards. Some of these measures enabled the US and the UK to survive World War 2 however none of these measures are being currently applied or developed with significant funding. See Appendix A for further details.

3. If oil peaks after 2025 a timely adaptation with mutually agreed supply and demand side oil conservation measures, as recommended by the International Energy Agency (IEA), would be feasible. Sadly this optimistic scenario envisages that alternatives to conventional oil are available in abundance, allowing the present trend towards greater globalisation to continue apace. This outcome is far from certain and assumes that non-conventional oil can be produced from shale and tar sands without large increases in greenhouse gas emissions, or from coal or gas using unproved carbon sequestration and other technologies yet to be developed. Like President Bush's "Hydrogen economy" this outcome is most uncertain and carries with it a very high risk of escalating greenhouse gas emissions that destabilise the climate.

The growth in drive alone commuting in urban Australia is unsustainable. By late 2007, when the 2006 Australian Census data will be available, fuel consumption for the journey to work will have increased by around 7% and will be responsible for around 45% of the costs of urban congestion. (See Fig 3 Appendix B) By 2008 the price of a barrel of oil could be well over US $100 barrel. See Appendix A which concludes that the growing demand for more car based mobility is unsustainable and a "fail safe" Energy Security Plan is urgently needed to reduce growing oil dependency which is the greatest threat to Australian national security since Federation.

Appendix B recommends many frugal measures to conserve oil that are also recommended in the Sustainable Cities Report and provides several figures and tables as examples of the many ways in which the ABS Census data can be used to accurately show sustainable and unsustainable trends for the journey to work for all modes even at local government level.

**Monitoring and setting targets for the journey to work**

Oil dependence has been generated by the growth of low density urban sprawl in the outer suburbs, particularly those with no fixed rail access or regular trunk bus services, that lock households into multiple car ownership and longer car commutes.

Increasing congestion costs are the most useful indicator of increasing household oil dependence. Data produced by VicRoads for metropolitan Melbourne provides us with a simple formula for estimating the high congestion costs of the 13% of all car trips that are commuter trips and why it is such a useful indicator of the growth in oil dependence. This formula, plus or minus a percentage or two, applies to the other capital cities.

**Car commutes in 2001 =**
**= 13% of all car trips**
**= 33% of distance travelled on main roads**
**= 40% or more of the cost of congestion.**

Appendix B explains the need to uses the census data on urban commutes because it's 97% sample size provides accurate data for all transport modes from 1976 to 2001 even at local government level. Analysis of the data in appendix A reveals that, oil dependence is growing rapidly: -
*"around 640 km of Melbourne's arterial road network is currently congested at peak times and this could more than double to 1300 km of roads by 2021 and the total costs of congestion could be as high as $2.7 million per annum".*

It is argued that this is likely to be a conservative estimate after world oil production peaks and then reduces, as oil prices will be in the $200 a barrel region. The unsustainable growth of car dependent outer suburbia in the capital cities needs to be stopped as soon as possible and well before the oil crunch comes.

**Monitoring and setting targets for the journey to school**

There is also a need to take into account the independent trips on foot or by bicycle by children 7 to 17 years of age whose need for safe physical mobility has been neglected in the past and who have become increasingly car dependent and, according to ABS surveys, fatter as a consequence. No national indicators address this issue but there is clearly a need for such a behavioural indicator. The percentage of non motorised trips to school and college would be a suitable indicator. The child-chauffeuring role of parents is also another measurable indicator.

Monitoring and setting targets for pedestrian and bicycle use in Australia has to be measured in km of distance travelled for a whole range of journeys as it is in the Netherlands and Denmark. The risk of accidents is a major deterrent to walking and cycling but the only time the Australian walking and cycling death rate per 100 million passenger km was measured was in 1985. By this measure walking was 5.6 times safer and bicycling was 2.2 times safer in the Netherlands than in Australia in 1985. Also we know that in the Netherlands the walking death rate had nearly halved by 1996 to 2.0 and bicycling death rate was down 30% to 1.9 (Wellemen 1999) but we do not know what progress is being made in making the non-motorised modes safer in Australia.

The claim by road safety authorities that walking is getting safer because fewer pedestrians are killed is spurious because the real reduction comes from the fact that pedestrians are walking far less than they used to. Indeed we know that in outer suburbia the proportion of people walking to work is far less now than it was 20 years ago. (See Figures 4 to 7 and Table 3 in Appendix B) Until a thorough job is done to monitor the distance travelled for other walking journeys no one will know for sure.

The 1985 Australian death rates per 100 million passenger km are appalling and we can only hope that it has greatly improved since then. Obviously accident analysts need facts, so it would be prudent for the Australian Transport Safety Bureau to collect the data on a regular basis, as the Dutch do. It is useful, to do practical things like benchmarking the National Bicycle Strategy, not only for transport but also for public health departments and the environment agencies that want to encourage walking and cycling. The absence of sound benchmark data has for many years deprived community advocates of walking and cycling with the means to make their case and it will handicap the implementation of a sustainability charter unless these data are provided.

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**"Sustainability is a journey" that needs oil to be conserved to make it possible**

Sadly few people understand that nature's gift of oil, a finite source of cheap and energy dense fuel, needs to be conserved. Much of the easily extracted oil is now being wasted when it needs to be used to power the process of ecologically sustainable development (ESD), which has been defined as: -

> *To ensure that development meets the needs of the present, without compromising the ability of future generations to meet their own needs. (Bruntland 1987)*

Sustainability is a journey to achieve the above and make possible the transition to an age that is powered by sources of renewable energy. The need is to ensure human survival when the cheap oil is not available and the world's population has peaked at around 8 billion people and when there are 1.5 billion more mouths to feed than in 2006. That increase in population coupled with a

modest improvement in the standard of living in the developing world will double the rate of oil consumption and the demand for oil will accelerate particularly in China and India. As yet we do not even know what proportion of the remaining oil reserves should be held back by oil rationing to boost food production, maintain vital services and avoid mass starvation. (Parker 2005)

What seems obvious is that in all countries there is a need to develop the renewable energy resources, new green products and processes (Weizacker and Lovins 1997). There is a need for an international agreement that actually implement measures to conserve oil, like the one we have to stop making ozone depleting substances. To develop now without compromising future generations governments must be able to use both the carrot and stick to conserve oil.

Sustainability is a journey that will require bridges to be built over the technological and political problems blocking the way from the Age of Oil to the Solar Age. The technology now exists, to collect energy in ways that were impossible a few years ago. It is cheap oil that has powered the growth of industries in the past and it is still needed to create the infrastructure for the new clean and renewable energy technology that can substitute for oil. For example, the latest multi megawatt wind turbines produce clean energy but oil is still needed to manufacture the turbine blades, gearboxes and the 70 to 100 metre tower and foundations.

The good oil that remains needs to be conserved so that it can used sensibly to make things that are really needed to conserve energy Amongst the thousands of products needed the following would require oil to make or build them: -

1. Trillions of solar electric roof tiles.
2. 50 billion new energy efficient electric light bulbs.
3. Five billion bicycles and electric bicycles; durable high quality new designs for transport applications.
4. Three billion “ozone friendly” refrigerator/freezers mostly solar powered.
5 Two billion solar flat plate hot water heaters with a range of backup systems.
6. One billion heat pumps mostly solar powered.
7 One hundred million energy efficient hybrid trucks and hybrid buses.
8. Ten million medium and large wind power generators.
9. Five million small hydroelectric power plants for rural villages and isolated farms.
10. 4 million light rail vehicles with regenerative breaking systems.
11. 100,000 wave power units.
12. One thousand computer chip and solar cell manufacturing plants worth over $1 billion each.

There is also a need to revive the use of some old technology like the bicycle that is indirectly solar powered via the foods that are eaten to energise muscles. The threefold mechanical advantage of pedalling over walking enables ten times the area to be accessed by bicycle than on foot and, if sustainability is a journey, we can be sure of one thing: billions will making that trip by bicycle.

Making all of these things could provide a billion jobs and greenhouse emissions will be reduced. Sadly this vision of the future will never be realised If national leaders believe that they can complete the sustainability journey in national fleets of SUV’s, 4WD’s, jet airliners or even the family car.

## CONCLUSION

This submission argues that a package of indicators and targets designed to assist the process of de-coupling the increased demand for oil from increases in living standards is an important tool for implementing the risk management measures required in the next ten years. Without a serious commitment to reducing the demand for oil on the long journey to a sustainability future the current journey to a distinctly unsustainable future will never be turned around.

1. The ABS Census data over 30 years to 2006 are going to show just how difficult it is going to be to reverse current journey to work trends. The 2006 Census data can be added to Figures 1, 2, 3, 5 and 7 in Appendix B. for the major capital cities. That will show what is likely to happen by 2011 if current trends are allowed to continue for all commuter modes.

2. The absence of data for the distance travelled for walking and cycling trips (except for work trips) means that there is no reliable national indicator for active transport and this deficiency needs to rectified.

   Indicators and targets need to be set for the production of green alternative energy products, reducing the demand for oil and greenhouse gas emissions

3. The Swedish government's sensible risk management approach to cope with the coming peaking of world oil production has much to recommend it. The Australian government should establish a partnership agreement with the Swedish government and take their advice on all energy issues where their technological superiority is demonstrated.

   Unless every country treats oil conservation as almost a national emergency measure the end the age of cheap oil will create misery and death for at least a billion people because the oil needed to create the alternative energy infrastructure will have been wasted. This is why indicators and targets need to be set for the production of green alternative energy products that will reduce the demand for oil and greenhouse gas producing fossil fuels. Australia should act unilaterally and attempt to persuade it's allies to follow.

## REFERENCES


Bruntland, G.H.(1987). *Our Common Future: the world commission on Environment and development* P 43, *Oxford* University Press, Great Britain.

Hirsch, R. L. Bezdek, R and Wendling, R. (2005) "Peaking of world oil production: impacts, mitigation, & risk management" *ASPO IV. International workshop on oil and gas depletion 19-20 May 2005, Lisbon, Portugal,*

Parker, A.A. (2005 A) "The end of suburbia: what happens when the cheap oil is gone and what are the health implications", *Health promotion Journal of Australia,* April 2005 /Vol16/No 1

Weizsacker, E. V. Lovins, A.B.and Lovins,L.H. 1997." *Factor 4: Doubling wealth - halving resource use"*. A new report to the Club of Rome, Allen and Unwin, NSW.

**ATTACHMENTS**

**Appendix A**. Parker, A.A (2006) *If world oil production peaks before 2020 it puts the well being of all Australians at risk*

**Appendix B.** Parker, A.A (2006) *The census data for urban commutes reveal the growth of oil dependence since 1976*

## Yours sincerely

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