

**The Secretary  
Senate Rural and Regional Affairs and Transport  
Parliament House  
Canberra ACT 2600**

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Dear Committee Members,

I make this submission in order to encourage the Commonwealth to develop sustainable urban and regional development policies, specifically in regards to reducing energy consumption. As a practicing town planner at a large Australian urban municipality, I appreciate the significance that urban development patterns have on the amount of energy that is consumed by people and businesses, and urge the Commonwealth to re-engage itself in urban and regional planning matters.

As a finite, non-renewable resource, it is inevitable that oil, gas and eventually coal will become exhausted, and that moreover, the cost of extraction begins to creep upward long before most of the resource is depleted. There is a growing body of evidence being presented by experts which suggests world oil production is reaching a peak, and will thereafter begin to decline. Concerned experts from around the world have formed an organisation by the name of ASPO – the Organisation for the Study of Peak Oil & Gas, where numerous studies and well researched evidence has been compiled. Regardless of when the peak actually occurs (and it appears increasingly likely to be sooner rather than later, quiet possibly even within the next two to five years), it is incumbent upon each and every decision-maker to consider the likely effects of such an event, and plan for its mitigation.

Falling world oil output will be associated with severe disruptions to the world, with major social, economic, political and geo-political ramifications. It is imperative therefore, that we reduce our consumption of energy, particularly that which is derived from oil. Our remaining stocks of the “black gold” should be conserved for the benefit of future generations (oil is a feedstock for pharmaceuticals, synthetic fibers, paints and herbicides), diverted to vital applications that cannot currently function effectively without its use (such as agriculture), and used to support remote communities.

For decades, Australian cities have been built around the motor car. Entire urban communities are now almost wholly reliant on oil for accessing employment and services. A pattern has emerged of lower income households being concentrated in car-dependent outer suburbs. In many instances, the jobs held by their resident workforces are geographically diffuse, being remote from both their homes and the central city. The

transit, where it exists at all, is focused on providing services to the city centre. Hence, these workers must travel long distances by car to access their workplaces (typically in the manufacturing, wholesale and retail sectors). These suburbs also represent the “mortgage belt” of our cities (Brochie *et al* 1995). Their residents are now being squeezed by rising petrol costs (Dodson & Sipe, 2005).

In the event of further oil price rises it is very likely that interest rates will have to be raised, adding even further pressure on these workers and their families. Rising oil prices will likely increase our already very large current account deficit. This is because our domestic oil production continues to fall, increasing the quantity we must import while concomitantly the price per volume rises. Furthermore, rising world oil prices are likely to reduce world economic growth (eventually resulting in a global recession), hence diminishing the demand for and ultimately the price of many of our raw material exports such as coal and iron ore. This event occurred in the late seventies and early eighties after the second oil shock. The terms of trade had turned against us, leading to high interest rates and unemployment levels. If our existing deficit widens any further, the foreign investors who are keeping our economy afloat with cheap credit are likely to withdraw from our market and/or demand higher rates of interest to cover the greater risks associated with purchase of our debts. Moreover, rising oil prices could trigger higher inflation, both as a result of rising transport costs, and because of downward pressure on our currency. Inflation is combated by raising interest rates.

In order to make our metropolitan cities more energy efficient, we must reign in the sprawl of the suburbs. Raising population densities reinforces the viability of public transport and reduces per capita petrol consumption (Newman and Kenworthy, 1989a). Furthermore, we must build future communities around transit systems (preferably rail and light rail, as opposed to less energy efficient modes such as buses). We must house our population in places that are within a few minutes walking distance of transit. Peter Calthorpe, a well regarded American urban designer, envisages our major suburban roads becoming the transit arteries of the future, with medium density residential, retail and commercial developments constructed along either side.

We must be careful not to encourage offices, shops and other services to disperse into suburban locations that are not served by existing or proposed high frequency transit. In America, many cities have seen relocation of offices from their downtowns to low density, car-oriented office parks. The effect has been to dramatically increase car usage, while doing little, if anything, to reduce average work trip length (Cervero, 1989a). Rather, we should encourage “decentralized concentration” meaning activities are concentrated in major sub-regional centres that can support a high-frequency transit service, while still providing the opportunity to bring jobs and services closer to the residents who need to access them. Higher density housing should also be developed within walking distance of these centres, or within the pedestrian catchments of train stations or busy light rail stops.

Our industrial areas must also be serviced by an efficient freight rail network. Produce that is transported from one factory to another should be moved by rail, which is a far

more energy efficient mode than road based freight. Farm produce should also be transported to metropolitan distribution centres by rail. Even our supermarkets and other shops will eventually need to be integrated into an electric powered rail network. This could be achieved by constructing new rail lines to our major shopping centres, refusing planning approval for proposed shopping centres that would be entirely road freight reliant and designing future light rail systems in a flexible manner that would allow for both passenger and freight distribution (for example during off peak times).

Building codes and planning requirements need also to be revised. In Spain, a national law has recently been passed mandating the provision of solar cells on each new residential building that is constructed. We need to follow this lead. Buildings must also be designed in an energy efficient manner. Recent changes to the Building Codes of Australia do not go far enough in this respect. Greater regard must also be taken of lot design, with a view to maximizing solar orientation.

It is likely that Australia will be forced to ramp up her production of natural gas, converting the gas to liquid fuel in order to supply private and commercial vehicles. While gas has a role to play in softening the transition from oil, I would urge against its widespread use and consumption on several grounds.

Natural gas is a feedstock for nitrogen, a key ingredient in fertilizer. Without the widespread application of nitrogenous fertilizer, the “green revolution” of the 1960s would never have been possible. We could not even begin to contemplate supporting the current world population without this key input, let alone the projected 8 billion people that could reside on the Earth a few decades hence. The world’s agricultural sector will in any case struggle to cope after oil prices start to reach a critical level. Oil is the raw material for herbicide, the application of which also helps to raise crop yields. When agricultural machines replaced draught animals, the land that was previously used for growing fodder or that was available as pasture for the beasts of burden, became available for growing food crops. Many of the transport systems used to carry farm inputs and outputs also require oil for their operation.

Natural gas is also a known Greenhouse gas. Although its use releases fewer carbon dioxide molecules into the atmosphere than oil or coal, its use should not however be encouraged, given the critical danger posed by climate change.

Australia should collaborate very closely with Iceland, a country that has drawn up a 30 year plan to be completely free of fossil fuels, by creating a “hydrogen economy”. The benefits to our country and the world are not inconsiderable. Whereas the Icelanders intend to use their geothermal energy and hydro power as the source of the energy for the manufacture of hydrogen, we could consider the option of using solar mirrors in our dry tropical regions to boil water, produce steam and make hydrogen. It is time to redouble our efforts in support of renewable energy research (including development of a hydrogen economy) and work out a coherent national strategy to greatly increase the use of wind and solar power and thrash out a plan for a hydrogen economy. Research and

development funds should also be allocated to the development of wave energy, a concept that could one day supply large quantities of renewable energy in Australia.

In conclusion, world oil production is reaching a peak, and Australia's oil output has been falling for several years. This is adding to our import bill, increasing the danger of higher interest rates as a result of the loss of investor confidence in our economy. Oil (and natural gas) plays a vital role in sustaining the world human population by greatly increasing farm yields. We should not "waste" oil in our inefficient suburbs, for it is a critically important resource required by our agriculture sector, and must also be used to maintain remote communities. Because it is probably true that renewable energy will never come close to supplying the quantity of energy we currently consume, we must instead learn to live with less energy (nuclear fission reactors cannot provide a long term solution to the impending energy crisis, as uranium ores would be depleted in a few short years if the world turned on mass to the consumption of this resource as a substitute for fossil fuels). A good place to start is in urban and regional planning, by redesigning our cities to reduce the need to travel long distances by car, and lessen our economy's reliance on road freight transport. More sensible planning and building requirements would prevent the development of major new retail, manufacturing or commercial centres in areas remote from transit, place people within reach of public transport or sub-regional centres, ensure the design of lots with good solar orientation, and lead to the construction of buildings with high standards of energy efficiency.

## References

Association for the Study of Peak Oil and Gas (ASPO) [www.peakoil.net/](http://www.peakoil.net/)

Brotchie, J; Gipps, P; & Newton P; (1995) "Urban land use, transport and the information economy. Metropolitan employment, journey to work trends and the implications for transport" in *Urban Futures*, No. 17.

Cervero, R. (1989a) *America's suburban centres. The land-use, transport link*. Allen & Unwin Ltd, North Sydney.

Dodson, J; & Sipe, N. (2005) *Oil vulnerability in the Australian city*. Urban Research Program. Research Paper 6. Griffith University.

Newman, P; & Kenworthy, J. (1989b) "Gasoline consumption and cities – a comparison of US cities with a global survey", *Journal of the American Planning Association*, 55 (1), 24-37.