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Energy Policy Submission
Sustainable Population Australia
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In the second decade of the 21st century energy policy needs to be set in the widest and most comprehensive context, something the Issues Paper fails to do. The Issues Paper is set within a 'Business as Usual' (BAU) context assuming that the continuous growth conditions of the past six decades can and should be extended into the indefinite future. It can be shown that this is neither possible nor desirable.

Global threats surround the continued, and in the words of the Issues Paper, greatly expanded exploitation of fossil fuels: coal, gas and petroleum. These threats are given almost no coverage in the Issues Paper and, to the extent that they are, the impression is given that any attempt to address these threats would impede the preferred expansion of exploitation of these fossil fuel resources, BAU.

The threats arise from two factors:

- a) The burning of fossil fuels is adding climate changing and ocean changing CO₂ to the global environment. Changes in both realms threaten human civilisation. Calculations of the amount of carbon that might still be added to the natural environment without this serious consequence indicates that every effort needs to be made as quickly as possible to reduce carbon emissions using the remaining fossil energy to make the transition to renewable energy sources.

'.....almost four-fifths of the CO₂ emissions allowable by 2035 are already locked-in by existing power plants, factories, buildings, etc. If action to reduce CO₂ emissions is not taken before 2017, all the allowable CO₂ emissions would be locked-in by energy infrastructure existing at that time.....No more than one-third of proven reserves of fossil fuels can be consumed prior to 2050 if the world is to achieve the 2°C goal, unless carbon capture and storage (CCS) technology is widely deployed.⁽¹⁾
(A technology far from wide commercial application –personal comment)

This view expressed by the International Energy Agency is in stark contrast with the BAU views of the Issues Paper

- b) Fossil fuels are non-renewable resources. The known reserves of these will be in decline within the next few decades. Conventional oil probably passed peak in about 2006 and non-conventional oil (tight oil) is expected to extend that peak for only between five and ten years. Transition to renewable sources of energy is inevitable. As in (a) it is critical that the remaining fossil energy sources are used to drive the necessary transition.

As Richard Heinberg, a prominent author on this urgent transition says:

'.....we must reduce our dependency on fossil fuels as quickly as possible. It is the only realistic answer both to climate change and our economic vulnerability to declining fossil fuel resource quality and EROEI (energy return on energy invested). This is literally humanity's project of the century, probably the most important of all of history.....With every passing year the fossil fuel industry consumes a larger portion of global GDP, reducing society's ability to fund an energy transition.'⁽²⁾

Energy transformation underpins every single change. Without an energy transformation nothing would happen. Making energy available for human use involves the use of energy. Making every other resource available for human use involves the use of energy. As grades of mineral resources continue to decline, the amount of energy required to extract lower and lower grade ore bodies continues to increase. The same applies to fossil fuels and this is particularly clearly seen in the case of petroleum. Where once shallow wells produced oil 'gushers' we now drill kilometres beneath deep seas. These two factors: the energy costs of getting energy and the energy costs of getting all other non-renewable resources indicate that the age of continuous growth is over, that humanity is in a necessary state of transition from a growth economy to a steady-state economy bounded by what is sustainable on a finite planet. The issue that should underpin the Issues Paper is: will our governments seek an impossible path of further growth only to end in collapse or will they accept the inevitability of the transition and work to make it as smooth as possible?

In terms of energy policy what would need to be done to bring about this latter transition?

Renewable energy can meet the needs of electricity demand provided that continuous growth in energy demand is curtailed. South Australia derived 28 per cent of its electricity needs from wind in 2013 and photovoltaic generation has significantly reduced the peak created by widespread use of air conditioners.

'Although on-going research and development will always be needed to improve technologies and bring down their costs, the principal barriers to the transition are neither scientific, nor technological nor economic. They are political and cultural, based on unrealistic ideologies of endless economic and population growth and a society based on consumerism.'⁽³⁾

Currently transport fuel is mainly petroleum. A 2009 government paper on future supplies of petroleum said:

'The outlook under a base case scenario is for a long decline in oil production to begin in 2017, which will stretch to the end of the century and beyond. Projected increases in deep water and non-conventional oil, which are 'rate-constrained' in ways that conventional oil is not, will not change this pattern.....Thus at some point beyond 2017 we must begin to cope with the longer-term task of replacing oil as a source of energy. Given the inertias inherent in energy systems and vehicle fleets, the transition will be necessarily challenging to most economies around the world.'⁽⁴⁾

Such is the crucial role played by petroleum in the global economy that linked to this decline are major impacts on every other facet of civilisation from water and food supply to international trade vs self-sufficiency. It is likely that any return to economic growth would be short-lived as a consequence of a steep rise in the cost of oil.

Thus an accelerated and government initiated transformation of Australia's transport system from one that is petroleum based to one that is based on electricity must become part of the new energy policy for Australia. Massive investment in electric public transport within and between centres of population is necessary. The electricity must come from a greatly expanded generation of renewable electricity, not from the burning of fossil fuels.

Corollaries of these suggestions are:

- a) All governments should cease to grant any further exploration licences for fossil energy.
- b) All known fossil energy sources not yet exploited should be refused exploitation permission.
- c) Governments should remove all subsidies for the use of fossil fuels.
- d) Export of fossil fuels should be phased out as rapidly as possible.

References:

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3. *Sustainable Energy Solutions for climate change.* Mark Diesendorf January 2014
4. Bureau of Infrastructure, Transport and Regional Economics (BITRE), 2009, *Transport energy futures: long-term oil supply trends and projections*, Report 117, Canberra ACT.