Response to the UMPNER Report
from Doctors for the Environment Australia

Doctors for the Environment Australia is not ideologically opposed to the use of nuclear energy. In our submission to UMPNER we contended that we were not satisfied that the health and safety of nuclear power had yet been independently assessed. Furthermore we maintained that nuclear power had only modest application to the reduction of greenhouse gas emissions. UMPNER was not set up to be able to analyse independently the relative merits of nuclear and renewable sources of energy for power generation, nor was it mandated to examine the role of energy conservation in Australia's energy equation.

Most importantly our submission to UMPNER stated:

"We can recognise, therefore, that there are two forms of information available to the public on nuclear power. On the one hand, there are reports from government and industry. Those from government are usually tailored to the needs of the government. The experts used reflect the government's technological practice and ideology. Those from industry are written for commercial purposes and carry little scientific weight. On the other hand there are scientific reports and papers from nuclear experts, who are frequently excluded from the aegis of government because they have concerns based upon their scientific and medical analyses. Governments sideline opinions that do not fit in with their political agenda. No doubt the TORCH Report supported by European Parliament Greens groups (and Medact the UK sister organisation of Doctors for the Environment, Australia) will be labelled by some as political and biased in order to sideline their conclusions."

We concluded that no objective assessment of the merits, or otherwise of nuclear power can be made without studying independent, comprehensive scientific reports and there is a great lack of these.

In our view UMPNER does not fit into this independent category. The report details the case for the development of nuclear power in Australia. While government is entitled to frame reports in whatever way it wishes, it is inappropriate to present unbalanced data on human health and safety.

Chapter 6: Health and Safety

6.2. Health Impacts of the Nuclear Fuel Cycle

This section uses data from the European Commission Extern E study which examined the external costs of electricity generation. On health and environmental grounds it concluded that nuclear has fewer external costs than fossil fuel. In the DEA submission to UMPNER we stated "In comparing fossil and nuclear options, we conclude that neither can be supported on health and environmental-health grounds. It is not a logically good argument for the acceptability of the "least bad" option". The point being that we have extensive data on the severe health impacts of fossil fuels but we have inadequate data on the long term and genetic impacts of nuclear power generation. The Report does not address these concerns

Box 6.1. The statement is made that in the initiation of cancer or genetic disease by radiation there is no threshold. This is an important admission because it should lead to a discussion of the discrepancies between reports of cancer following Chernobyl and the conclusions reached in the IAEA report, but this was not pursued in the UMPNER Report. Instead there is discussion of the wide variability of background radiation concluding with, "The fact that background radiation varies substantially from place to place provides some reassurance on the risks associated with low dose radiation, since no study has shown any difference between high and low radiation areas in terms of impacts on human health." Does this mean that no studies were undertaken or that all studies

were reviewed and radiation variability showed no effect? In any scientific study the references should be provided. Discussion of background radiation obfuscates the issue. The use of **Figure 6.1** is inappropriate in this discussion because it compares radiation exposure of medical use in individuals with that from nuclear tests, radiation exposure from Chernobyl and from nuclear power.

The reference to UNSCEAR data is not properly referenced and dated to enable the reader to verify the claims. The data on fatality rates for workers in nuclear and fossil fuel industries is irrelevant to discussion on the long term dangers of nuclear industries.

Box 6.2 The likely future effect of radiation from the Chernobyl accident is dismissed on the basis of an opinion from the ICRP, the reference to which is not accessible. The problem of existing data on Chernobyl was extensively discussed in the DEA submission. None of these points are addressed in the UMPNER Report.

The discussion of acceptable risk is naïve. Under the heading “Nuclear Industry contribution to background radiation” it is totally inappropriate to compare risk from nuclear radiation with motoring, owning firearms, shark attack and other causes of sudden death. This data was taken from a report from the Department of Environment and Heritage for a proposed replacement nuclear reactor at Lucas Heights 1999. The DEA submission drew attention to the need for independent reports.

We conclude that the health and safety chapter is scientifically inadequate. It is selective in its referencing and several quoted facts are difficult to verify in the literature. The Prime Minister has asked for an informed debate on the issue of nuclear power. This chapter provides an inadequate basis for an informed debate.

Chapter 7: Environmental impacts

The DEA submission made the point that the development of nuclear power would be unlikely to make more than a minor contribution to the reduction of greenhouse emissions. **Figure 7.1** has to be substantiated. It indicated that with the development of 25 nuclear power plants commencing 2020, greenhouse emissions will be stabilised by 2030. This is a reduction of 18% on business as usual. This conclusion is probably wrong for the following have not been considered

(1) The University of Sydney study looks thoroughly at greenhouse production for all stages of the nuclear cycle, but as yet there is inadequate data on decommissioning for there is very little experience of this process. Decommissioning of the Selafield complex in the UK has been allocated $A10.4 billion over 5 years. A process of this magnitude is likely to have significant greenhouse cost.

(2) UMPNER assumes high grade nuclear fuel feedstock will be used for many decades. Despite the statements of the IEA, there is significant evidence that high grade uranium ore will last for around 25 years. This data is discussed in the DEA submission to UMPNER and it was concluded that at the most there is sufficient high grade uranium for 25 years. Using low grade ore, the mining and milling will produce in the order of 10 times as much greenhouse emission and the purported advantage of nuclear will be lost.

(3) The arguments in **Box 7.2** are unsatisfactory. The data of Leeuwen and Smith who argue that once high grade uranium is exhausted, the use of low grade uranium could cause nuclear to use more energy than it produces are contested in the UMPNER Report despite the admission that the methodology of these authors is appropriate. The authors are criticised by UMPNER because they used calculations based on input of fossil fuels. What will be the input in Australia? It will be fossil fuels. Based on present day policy, it is unlikely to be renewables. In conclusion, if low grade uranium has to be used, the supposed greenhouse benefits of nuclear will be negligible.

(4) The use of ABARE data on projected greenhouse production is open to question. ABARE uses a 2% growth rate to calculate doubling of electricity demand by 2050. But taking into account government intent, growth would be more likely to be 3%. The economy will have quadrupled by 2050, so reducing the supposed proportionate advantage of nuclear energy.

In conclusion, the arguments used in Chapter 7 select those data most favourable to the nuclear case. This is therefore a political document rather than a scientific document. To be scientific the authors needed to create alternative scenarios for points (1) to (4) in the same way that the Intergovernmental Panel on Climate Change creates scenarios for temperature rise based upon variable factors and modelling. Variables in nuclear are grade of milling, decommissioning costs, type of fuel used in developing nuclear and estimates of projected national economic growth and greenhouse production.

For these reasons Doctors for the Environment, Australia cannot accept the conclusions of the UMPNER Report. As argued in our Energy Policy (see www.dea.org.au) DEA continues to maintain that focus on very-rapidly improving methodologies for utilising renewable sources of energy (and on energy conservation) should be the mainstay of supplying Australia's energy in the future.