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30 January 2009

Dr Charles Guest
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ACT Department of Health

HEALTH ASPECTS OF THE CANBERRA TECHNOLOGY CENTRE PROPOSAL

References:

A. ACT Air Environment Protection Policy 1999
B. World Health Organization. Air quality guidelines. Global Update 2005
C. ACT State of the Environment Report 2007/08, ACT Commissioner for Sustainability and the Environment, tabled in the ACT Legislative Assembly 07 Aug 08
D. No Breathing Room: National Illness Costs of Air Pollution, Aug 2008
E. National Environment Protection (Air Toxics) Measure, December 2004

1. We write to formally draw your attention to the inadequacy of the standards used for determining the effects on air quality used in the Canberra Technology City Draft EIS dated Nov 2008 (which will be applied to the new site for this development at Hume). As a member of the defunct HIA Steering Group, we expect you will be familiar with the proposal.

2. The Air Quality Study in the EIS relies on references A and B. As you would know, reference A was written in 1999. Reference B was originally written in 1987 and updated in 2005.

3. References A and B discuss the effects of particulate matter, but discount the effect of $PM_{2.5}$ - particulate matter 2.5 micrometers or less in diameter - due to a lack of definitive epidemiological evidence at the time of writing. Since references A and B were written there has become available a wealth of information on the effects of $PM_{2.5}$. This information is freely available to the public and readily comprehensible by the lay-person, however, it has been ignored in the CTC proposals in favour of the older standards. The ACT Health Department has not raised this issue with the government or the proponents.

4. The WHO itself has recognized the issue and their own website now advises:

PM affects more people than any other pollutant. The major components of PM are sulfate, nitrates, ammonia, sodium chloride, carbon, mineral dust and water. It consists of a complex mixture of solid and liquid particles of organic and inorganic substances suspended in the air. The particles are identified according to their aerodynamic diameter, as either PM_{10} (particles with an aerodynamic diameter smaller than 10 μm) or $PM_{2.5}$ (aerodynamic diameter smaller than 2.5 μm). The latter are more dangerous since, when inhaled, they may reach the peripheral regions of the bronchioles, and interfere with gas exchange inside the lungs ….

Chronic exposure to particles contributes to the risk of developing cardiovascular and respiratory diseases, as well as of lung cancer.[1]

5. Furthermore, the Federal government states: 'Recent epidemiological research suggests that there is no threshold at which health effects [from particulate matter] do not occur'.[2] As you would know, the health effects include:

- toxic effects by absorption of the toxic material into the blood (e.g. lead, cadmium, zinc)
- allergic or hypersensitivity effects (e.g. some woods, flour grains, chemicals)
- bacterial and fungal infections (from live organisms)
- fibrosis (e.g. asbestos, quartz)
- cancer (e.g. asbestos, chromates)
- irritation of mucous membranes (e.g. acid and alkalis)
- increased respiratory symptoms, aggravation of asthma and premature death.

The risks are highest for sensitive groups such as the elderly and children. This information is all publicly available.

6. Alarmingly, Reference C, of which you should also be aware, indicates that:

'Monash [air monitoring station] *monitors both PM 2.5 and PM 10; Civic monitors only PM 10. The NEPM permits exceedences on five days per year. PM 2.5 values were exceeded in Monash 47 times during the reporting period'* [three years].[3]

7. Whilst there have been numerous problems with the air samplers, there is a *prima facie* case to indicate that Canberra already has a hidden problem with particulate matter – and the Civic air monitoring station " ... does not reveal whether most of the particles are in the upper end of the size range or, more dangerously, the lower end".[4] The report discusses Ozone O_3 and the Commissioner concludes there is no discernible trend with this pollutant; however, the NPEM standards for O_3 were exceeded in Civic.

8. Reference D is a recent report by the Canadian Medical Association on the national illness cost of air pollution. It states:

'..... the members of the Canadian Medical Association see the impact of air pollution on their patients every day in terms of increased frequency of symptoms, medication use, emergency room visits, hospitalizations and premature deaths. Children, the elderly, and those with chronic health conditions are particularly vulnerable to the effects of air pollution. As an older ... cohort – the baby-boomers - grows, the impact of air pollution will surely increase.[5]

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[1] http://www.who.int/mediacentre/factsheets/fs313/en/index.html

[2] http://www.npi.gov.au/database/substance-info/profiles/pubs/particulate-matter.pdf

[3] This appears conservative because the website indicates data was not collected for the full reporting period due to equipment failure. The equipment failed in winter when PM2.5 counts are highest. http://www.environmentcommissioner.act.gov.au/soe/2007actreport/indicators07/outdoorairquality07

[4] http://www.environmentcommissioner.act.gov.au/soe/2007actreport/indicators07/outdoorairquality07

5 No Breathing Room: National Illness Costs of Air Pollution, Canadian Medical Association, Aug 2008

9. The report focuses on the effects of $PM_{2.5}$ and ozone O_3. The report concludes, amongst other things, that in 2008:

- 21,000 Canadians will die from the effects of air pollution - 2,682 will be the result of acute short term exposure (primarily in the over-65 and very young);
- Over 22,000,000 minor illnesses could be attributed to air pollution – an alarming burden on the public hospital system; and
- the economic costs of air pollution will top CD$10 billion and by 2031 this figure will have risen to CD$250 billion.

In the absence of better data, extrapolation to Australia on a per capita basis would mean 12,852 deaths by air pollution Australia-wide and 213 deaths within Canberra alone.

10. Reference D goes on to state:

> *There is compelling evidence that exposure of young people to air pollution during the critical stages of lung development (up to around 17 years of age) can cause irreversible damage. One of the impacts is reduced lung function, which is proportional to concentrations of air pollutants, in particular $PM_{2.5}$*[6]

The CTC EIS considers $PM_{2.5}$ very superficially and dismisses it because it is not addressed in the references chosen by the proponents. In the light of the preceding evidence, such an omission raises questions of professional competence in the preparation of the report. The public has an expectation that the ACT Department of Health will protect the health and wellbeing of the residents of the ACT but the Department of Health has remained silent on this potentially harmful development and in highlighting to the public, government and planning authorities, the potential harm this development carries. This can give rise to allegations of a breach of the duty of care of the ACT Health Department, whom you represent.

11. Reference D concludes, '...there is a fundamental role for governments in preventing and controlling smog and poor air quality ...' This is already acknowledged by the ACT government. Reference E, endorsed by the ACT Chief Minister in 2004, discusses, amongst other relevant toxic pollutants, the effects of polycyclic aromatic hydrocarbons (PAHs), as emitted by fossil fuel power plants. This measure, and the effects of PAHs, is also ignored in the CTC proposals. The ACT Department of Health should act to protect the Chief Minister's interests and advise him that the CTC proposals do not adequately address these issues.

12. As a health care professional representing the people of the ACT, you can reasonably be expected to already be aware of all these issues. Relying on an outdated standard is insufficient when the risks to public health – and the cost to the already over-stretched public health system – are so grave. CPR inc on behalf of the community believe there is a failure of your duty of care to the health of the ACT if you ignore this risk or fail to act to alert the ACT government, whom you advise, of the inadequacy of the CTC EIS.

13. These issues warrant proper study by health departments of the Federal and ACT governments. Using the latest scientific research results and tools, we urge you to act to proactively modify public health policy rather than allow public policy to

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6 Avol, E.L., W.J. Gauderman, et al. 2001. Respiratory effects of relocating to areas of differing air pollution levels. Am J Respir Crit Care Med 164: 2067-2072 cited in, No Breathing Room. National Illness Costs of Air Pollution Summary Report August 2008, p3.

evolve through poorly-advised executive decisions, such as is the case with the CTC proposal. In particular, we urge you, as the most senior medical professional advising the Minister for Health, to urgently advise the Minister for Health that the development must be suspended whilst the following occurs:

- The ACT Department of Health procures the CMA software model (ICAP - Illness Costs of Air Pollution[7]) and commissions an authoritative and impartial agency (such as the CSIRO) to apply it under Canberra conditions for an accurate local estimate of the true health and economic costs of air pollution arising from the CTC development in Hume.

- You exercise due diligence and influence within the Health Department of the ACT government to ensure that the non-medical professional decision makers whom you advise are apprised of the findings.

- You make the findings available to the public.

- You exercise your duty of care to proactively modify public health policy in order to shape government thinking on this subject rather than allowing flawed Executive decision making to make public health policy by default.

14. As a health care professional, you can reasonably be expected to already be aware of all these issues. Whilst it is unfortunate that the Chief Minister has unwittingly chosen to formulate defacto public health policy through the construction of a private power station without considering the public health issues, it does not absolve you of the responsibility, as a medical professional, to ensure the decision makers you advise are fully aware of the issues. You would be failing your duty and you would be letting the people of the Territory down, if you allow the Chief Minister and the proponents to continue their reliance on outdated standards, where there is clear evidence that they are outdated. It is insufficient that you allow this situation to remain when the risks to public health – and the cost to the already over-burdened public health system – are so grave.

15. It would be negligent of you to ignore this risk or fail to act to alert the ACT government, whom you advise, of the extent of the deficiencies in the CTC proposal.

William Reid
President
Canberrans for Power Station Relocation Inc

For more information: http://www.canberrapowerstation.info/

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7 The Illness Costs of Air Pollution (ICAP) model was first developed in 2000 by the Ontario Medical Association (OMA) to estimate the health effects and economic costs of smog in the province of Ontario. Using a modified version of this model, the Canadian Medical Association (CMA) has developed estimates of health damages at the national level and for 10 Canadian provinces.