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3 December 1998

ESD Inquiry  
Productivity Commission Email: esd@pc.gov.au  
Locked Bag 2  
Collins St East  
MELBOURNE VIC 8003

Dear Inquiry,

Submission re implementation of Ecological Development by Commonwealth departments and agencies.

Would you please accept this letter as a late submission to the Inquiry. Most of the comment to be made would also apply to reducing Greenhouse Gas emissions, and will place particular emphasis on reducing liquid fuel use in transport.

1. As a first step, it would be good to get better data on energy use, and progress in improving energy efficiency along with promoting Ecologically Sustainable Development. To this end, it is recommended:

That each Commonwealth department and agency be required, in their annual report, to make substantial comment on progress in implementing Ecologically Sustainable Development principles, and include details of total energy use and data on energy efficiency for their relevant major operations, and the sectors of the economy for which they have responsibility.

That, via the COAG process, or other means, similar reporting measures be required for State and Territory departments and agencies, and for each publically listed company.

The net effect of such measures would be to improve the level of awareness and understanding about Ecologically Sustainable Development, and the need to practice the underlying principles, plus to improve energy conservation and efficiency (and so have a counting of Megajoules used or generated etc, as well as dollars earned or spent).

2. Some relevant Australian publications relating to ESD and/or energy use include:

A. Gilchrist, Gavin, The big switch: Clean energy for the 21st Century, Allen and Unwin, 1994

B. Dovers, Steve, et al, Sustainable energy systems, Cambridge University Press, 1994  
C. Fleay, B J The decline of the age of oil, Pluto Press, Australia, 1995.

D. Protecting the Future: ESD in Action Conference, University of Wollongong, Proceedings, 1995.

E. National Greenhouse Response Strategy Review December 1995 report of the Intergovernmental Committee on ESD.

F. The report of the Senate Standing Committee on Industry, Science and Technology (1991) 'Rescue the future - reducing the impact of the Greenhouse effect'.

1996 Discussion Paper, National Sustainable Energy Policy H. Bureau of Transport and Communications Economics (BTCE)

- 1995 Greenhouse gas emissions from Australian transport
- 1996 Transport and Greenhouse

I. Australian Bureau of Statistics, Australian Transport and the Environment, 1997

J. Urban Air Pollution in Australia, Australian Academy of Technological Sciences and Engineering, 1997.

3. The 1995 report of the Intergovernmental Committee on ESD gives some comment on energy use in transport. Part V Section 1 on background notes a long term projection of the BTCE (1995) that by 2014-15, Australia would be using more diesel than petrol in transport.

The 1995 BTCE report projected a large increase in the road freight task performed by articulated trucks rising from 70.8 bthm to 165.4 btkm by 2014-15. Over this time period, only a modest increase in the Government rail freight task force from 59.4 billion tonne km (bthn) in 1992-93 to 99.7 btkm is expected.

The Department of Energy (1986; Energy 2000 - Towards an Energy Policy, Booklet on Energy Conservation, p46) noted that there are potential energy savings from more use of the less energy intensive sea and rail freight transport modes, and, that such greater use would be more likely with improved road cost recovery from heavy truck operations.

The current National Road Transport Commission (NRTC) charges for heavy trucks have problems that are well summarised by the Industry Commission in its 1991-92 Annual Report (p197-198): "*...The result is that some vehicles - the heaviest travelling long annual distances - will meet less than 20 per cent of their attributed costs. ... Differences between the recommended (NRTC) charges and road-related costs are greatest for vehicles competing with rail. The charges, as recommended, will therefore potentially distort the long-haul freight market as rail reforms take effect....* "

The NRTC charges are considered to be in urgent need of review. More comment follows below in Section 12.

The response by the Keating Government during its term of office to the ESD and National Greenhouse Gas Strategies must generally be considered as limited. The attention given by the present Government to date could best be described as disappointing.

4. The 1995 report of the Intergovernmental Committee on ESD, Part V Section 2 notes the 1992 National Strategy for Ecologically Sustainable Development (ESD) and the National Greenhouse Response Strategy recommendation of reducing "

*transport through:*

*\* improved technical and economic efficiency of urban and non-urban transportation*

*\* switching to alternative transport technologies or modes where this reduces*

*greenhouse emissions per passenger or unit of freight".*

Fine as these sentiments are, they are given only limited Government support at present in Australia. Whilst some gains have been made in the energy efficiency of smaller cars, larger trucks, and trains, there has been little or no incentives given to more from less to more energy efficient modes. Successive Annual Reports of the Federal Department of Transport in the 1990s made little direct reference to energy efficiency (although ones issued in the late 1970's did), and the 1994 Vision Statement and Objectives of the Australian Transport Council (ATC) did not specifically cite energy efficiency. However, the ATC at its April 1998 meeting did note the development of an Australian Transport and Sustainable Development policy, and that ATC would provide input into the National Greenhouse Strategy.

Australia's slowness in dealing with improving energy efficiency in transport via competitive neutrality in funding and pricing is in direct contrast to the goals of the United States Intermodal Surface Transportation Efficiency Act 1991 "... *develop a National Intermodal Transportation System which is economically efficient and environmentally sound, provides the foundation for the nation to compete in global economy and will move people and goods in an energy efficient manner.* "

Australia's approach to energy efficiency in transport is also in contrast to the New Zealand Ministry of Transport (1994) approach, which proposes, inter alia, "*That the New Zealand vehicle fleet be energy efficient and environmentally friendly at a level that is internationally acceptable, and "That the land transport section play its part in meeting New Zealand's commitment to reducing net CO2 level emissions to 20 percent below their 1990*

*levels by the year 2000.*" This report also proposes that relevant targets in energy efficiency and use of alternate fuels be set soon and should be met by the year 2001. As well, the NZ Ministry of Transport actively supports "Safe, sustainable transport at reasonable cost"

Attention is also drawn to recent reports in New Zealand on road pricing. These reports foreshadow a potential move by the NZ Government towards internalization of environment and social costs, plus requiring a rate of return to Government from the road track regarded as a valuable asset. The reports of the NZ Ministry of Transport include:

- (1995), National Roothing Account, Roothing as an economic good
- (1996), Summary Report, Environmental Externalities
- (1997), Road Reform, the way forward

5. National Competition Policy continues to be a Government favourite. National Competition Policy documents/legislation stated that 'public interest' tests note a need for 'the efficient allocation of resources'. It should also be possible to give more recognition of ESD factors and to extend this need to 'the efficient allocation of energy and other resources.' In general terms, as applied to transport, Australia should be introducing true 'competitive neutrality' into public land transport infrastructure funding and pricing, and continue to improve rail freight energy efficiency and competitiveness.

6. There is much more that Australia could be doing to conserve energy in the movement of people and goods, as opposed to the present trends which are clearly unsustainable in the longer term. Most energy used in transport is liquid fuel, with two approaches to its use:

A Regard liquid fuel only as a financial input into operating costs, and let market forces decide on its use.

B Regard liquid fuel as needing Government intervention to conserve its use in transport because of factors including:

i) effect on balance of payments of net oil and vehicle imports, ii) externalities arising from fuel use, including air pollution and noise, with associated health effects, and iii) a potential need to limit Greenhouse gas emissions.

Over the last 25 years, Australia has seen both approaches at work, with Approach A (market forces only) being a persistent background, coupled with occasional adoption of Approach B. This was noticeable with the oil price rises in the early 1970s producing one "wave" of transport energy research and the second oil price rises in the late 1980s producing a new "wave" of such research. This second wave gave rise to more reports and action than the first wave. Some action by liquid fuel users was undoubtably assisted by the decision of the Federal Government in 1978 to move oil

prices to then world parity pricing. This action included, in the area of land freight transport, a demonstration project in 1982 by the NSW Department of Energy of fuel saving in Sydney - Melbourne and Sydney - Brisbane trucking operations, followed up by Queensland Railways mainline electrification in the 1980s. Ongoing improvements in road truck energy efficiency and rail freight energy efficiency have also assisted in fuel saving, as has higher fuel excise.

During the mid 1980s it appears that the momentum gained in transport energy research was allowed to dissipate. Whilst there may have been a revival in the late 1980s with increasing concern about the Greenhouse effect (and more recently with the effects of air pollution), it could well be that, at present:

1. Fully effective transport energy research (that includes data collection and analysis) is not being sustained by the Federal and State Governments, and
  2. If anything, we are continuing with Approach A, with some concern about health impacts in urban areas of liquid fuel use.
7. A 1996 Discussion Paper, National Sustainable Energy Policy, mentions on p 17 that many Governments, (including in Australia), provide support for energy R and D.

The work done by the Energy Research and Development Corporation should have not only been maintained, but also extended, with a senior staff member being assigned a specific responsibility for transport. Instead, contrary to pre 1996 election commitments, the present Government effectively abolished this Corporation in 1997. This was despite ERDC adopting a commercial approach to application for funding for energy research, with some notable successes.

8. I would also suggest there is a need for more and better data in land freight transport in Australia along with a need for increased energy efficiency in transport . To this end, a quantum increase in resources needs to be made available to transportation data collection and analysis in Australia, and, that these resources should be provided by the Commonwealth. The United States Bureau of Transportation Statistics is a good model. This was established as a result of the United States Intermodal Surface Transportation Efficiency Act 1991 that sets out to mandate responsible intermodal planning in such a way to "...reduce energy consumption and air pollution while promoting economic development" and, I understand that funding for the BTS was continued in the Transportation Equity Act signed into law by President Clinton in 1998.

Limitations on transport data were noted as acute as far back as 1980 by the NSW Commission of Inquiry into the Road Freight Industry (G. McDonell). The situation for timely and accurate transport data available for the public record has not improved since then. As per a recent Editorial of Railway Digest, December 1997: "Both road and rail would benefit from more and better data on freight and passenger movements. Such data needs to be accurate, up to date, and published quickly. Transport data is an

important area where the Australian Bureau of Statistics is struggling with other demands on its resources (it ceased its publication Rail Transport years ago and more recently its Interstate Freight Statistics). Other Government agencies analysing land transport data have either gone (the Inter-State Commission 1990, the Bureau of Industry Economics in 1996; and now-the Energy Research and Development Corporation) or, been down sized (Bureau of Transport and Communications Economics in 1996, and now our Universities)."

9. There is much more scope for Federal funding of rail and urban public transport as opposed to ongoing 'highway subsidisation' and denying funds for long over due rail and urban public transport development. This aspect is addressed in a report (Laird, P G- 1994) Rail and Urban Public Transport: Commonwealth Funding and Policy Issues, Research Paper, PRS, Commonwealth Department of the Parliamentary Library, Canberra. The report notes that from 1973-74 to 1993-94, in 1994 terms, Federal grants to roads were about \$31 billion, whilst net Federal outlays on intercity rail capital works were under \$ 1 billion, with Federal urban public transport at some \$1.3 billion. The 1995, 1996, 1997 and 1998 budget projections continue this bias towards road transport (over \$3 billion in tied grants, plus a similar amount in untied grants to the States), with little or no allocations for new programs in rail and urban public transport.

By way of contrast, the United States Transportation Equity Act of 1998 provides some \$36 billion for urban mass transit, out of a total of \$203 billion over six years.

10. Some comment is given in an older paper: Sustainable Land Transport Philip G Laird and Gabriella Adorni-Braccesi from Protecting the Future: ESD in Action Conference, University of Wollongong, Proceedings, 1995. The abstract follows.

**ABSTRACT:** The National Strategy for Ecologically Sustainable Development supports increased energy efficiency within transport modes, and by switching to more energy efficient modes. Road vehicles in 1991 accounted for about 87 per cent of total energy use in domestic transport, which in turn is about 25 per cent of Australia's energy use. Reduced energy use in transport would also lower air pollution.

The paper examines the growth of road transport at the expense of rail since the 1970s. Strategies are briefly examined to reduce petrol use in Australia by 2000 million litres a year by more fuel efficient cars travelling less kilometres, and, to reduce diesel use by 400 million litres a year by more efficient truck operations, intercity rail upgrading, and selected rail electrification. The Commonwealth investment in the National Highway System from 1974 to 1994 of \$12.3 billion in real terms as against \$1.3 billion for urban public transport and a net investment of less than \$1 billion in interstate mainline rail track is examined, along with Queensland Rail's \$590 million mainline upgrade project. Upgrading the interstate mainline rail track alignment in Eastern Australia to Fast Freight Train standards is recommended.

More recent comment follows re land freight transport. Getting efficient and competitive land freight services is vital for Australia's economic performance, and can assist both ESD objectives and reducing Greenhouse gas emissions.. The present pre-occupation by Government appears to be ongoing 'highway subsidisation' with increasing competition within rail freight services, whilst ignoring major distortions in road-rail competition for freight.

During the May 5, 1998 public hearings conducted by the House of Representatives Standing Committee on Communication, Transport, and Microeconomic Reform (The Neville Inquiry) Mr WILLIS (former Federal Treasurer) "... *I must say that what has come out of the inquiry to me is just how bad the system is. I am sort of shocked to realise just what a terrible state the railway system is. It is a national disgrace.*

*Obviously, if we are to have a viable industry, it needs a hell of an application of effort by government to bring that about, and a lot more than we look on track to be doing at the present time. In particular, I am really worried about the future viability of rail in the northsouth corridor. We have had a number of witnesses suggest to us that the viability of that system is perilous and, unless something happens to change it, we can see the end of rail freight in our lifetime or sooner in that area.*

*If we are looking at a system that is not running profitably now and that, unless something changes, is not going to run profitably, it seems to me that there is a real need for government to think very seriously about where policy is going. This is so especially as, on road, we have more money being poured into the Pacific Highway and money now being put into the Newell Highway, as part of the national road highway, giving a direct link from Melbourne to Brisbane. All that makes road transport more efficient. In our circumstances, it seems to me that there needs to be something pretty dramatic done to rail if we are going to have it, or else we should decide not to have it.*

The Neville Committee in its 1998 report, 'Tracking Australia' went further, and found that if chronic deficiencies in the interstate mainline track were not remedied "...*with urgent and sufficient investment from the Commonwealth, rail infrastructure, especially those sections with serious deficiencies, could become irretrievable.* "

The funds recommended by the Committee, were the same as identified by a 1995 BTCE report for the National Transport Planning Taskforce, as about \$3 billion. This included some \$2 billion for upgrading the Melbourne-Sydney-Brisbane rail track to Fast Freight Train standards.

Calculations, for 'Intercity land freight transport in Eastern Australia', Working Paper 1996/6, Centre for Resource and Environmental Studies, Australian National University, by this writer show that there are potential fuel savings of about 130 million litres a year of diesel from such work.

An outlay of \$2 billion on mainline interstate rail linking Australia's three largest cities would be small compared with past outlays on the Hume Highway of some \$3 billion from 1974 to 1999 in 1999 terms (as part of the National Highway System (NHS) formed in 1974 by the Commonwealth), plus over \$1 billion spent to date on the Sydney-Newcastle freeway, plus projected spending to 2005 of \$3 billion on the Pacific Highway.

12. Government policy, including the present application of National Competition Policy in Australia fails to encourage effective competition between road and rail for general line haul freight. To remedy this situation will require a much more balanced approach to track upgrading and highway upgrading from the Federal Government, and, improved road cost recovery from heavy trucks.

On-going Federal subsidisation of the National Highway System, whilst expecting mainline rail track to pay its own way, is one of many reasons for National Rail's loss of intermodal freight from 1995-96 to 1996-97 and failure to make a real profit in 1996-97. This was despite the benefits of real reform measures, new locomotives and better wagons. The reasons include rail track access pricing, poor mainline track between Melbourne - Sydney and Brisbane (where 36 per cent fails to meet basic Fast Freight Train standards), the failure to achieve a reasonable full cost recovery of road costs from heavy trucks (as per the 1991 SPC agreement), and, private train operations on the better Melbourne - Perth route.

As shown by the report 'Tracking Australia', attention to mainline interstate rail upgrading is now long overdue. So also is attention to competitive neutrality. In its primary submission to the Neville inquiry, the Australian Competition and Consumer Commission noted the need for an efficient transport sector, and, inter alia, *"Lack of competitive neutrality between rail and other transport modes, particularly roads, may be inhibiting the role of competition in achieving allocative efficiency among the different transport modes and hence greater integration in their use. To the extent that differences in government funding and user pricing approaches may be contributing to the absence of competitive neutrality, then an appropriate solution would be to tackle these distortions."*

The question the present inquiry by the Commission could well ask is who is giving, or going to give, remedial attention to these distortions. The Australian Transport Council at its Rail Summit in September 1997, and its regular meeting of November 1997, agreed that attention should be given, without delay, to the issue of competitive neutrality. This is one of many issues to be examined by the Productivity Commission in its current inquiry into rail: it is also relevant to ESD.

The problems with the current NRTC charges for heavy are well summarised by the Industry Commission (1992, p197-198) as cited above including *The result is that some vehicles - the heaviest travelling long annual distances - will meet less than 20 per cent of their attributed costs.*



Numerous reports on road cost recovery published in Australia during the 1980s found under-recovery of road system costs from the heavier articulated trucks. One example was report by the House of Representatives Standing Committee in 1987 (House of Representatives Standing Committee on Transport, Communications and Infrastructure, Constructing and Restructuring Australia's Public Infrastructure that found, on the basis of BTCE work, that road transport is being encouraged by hidden subsidies (some \$1406 million a year for articulated trucks was noted by the Committee) into freight movements that would be better done by rail. Despite this finding, road user charges from heavy trucks determined by the NRTC in 1992 are demonstrably deficient for the heavier long-distance trucks. The present charges were introduced throughout Australia in 1996, and are currently under revision, whilst retaining most of the deficiencies of the first generation of charges.

Although the NRTC charges were supposed to be on a 'user-pays' PAYGO basis, by the former NRTC Chairman's own admission ("Recession puts truck plan off road" Sydney Morning Herald, April 13, 1992) full cost recovery was then considered inappropriate.

As stated by Prof Hilmer, (William Fraser Commemorative Address, Chartered Institute of Transport, Sydney, 29 September 1995) re the road freight industry. *"The road sector does not fully pay for the road damage and externality costs (Inter-State Commission 1990) and this may affect potential intermodal competition with rail especially. "*

The NRTC annual charges, for a given axle configuration, are the same regardless of Gross Vehicle Mass or annual distance. They are arguably not economically efficient for the heavier articulated trucks (including B-Doubles) with high annual distance. It remains to be seen if the second generation charges will have 'mass differentiation'. This may be required for the relaxation of mass limits for certain trucks and operators agreed to in principle at the April 1998 meeting of the Australian Transport Council (ATC) which also agreed *"that road users who take advantage of increased mass should contribute to ongoing funding requirements associated with increased mass limits"*.

New Zealand has a system of road user charges for heavy trucks which is based on mass-distance charging. This system was introduced by New Zealand in 1978 as a considered decision to put into place full road cost recovery from heavy trucks before lifting rail protection. The NZ road user charges were a necessary condition for rail freight profitability and NZR privatisation in the early 1990s.

A six axle articulated truck hauling at maximum legal GVM (42.5 tonnes) in NSW as of 1 July 1996 would pay an annual NRTC charge of \$4000, plus a Federal road user charge on diesel at 18 cents a litre and a NSW fuel franchise of about 7 cents a litre. Based on intercity haulage at say 160,000 km per year and ABS average fuel use in 1991 at 51.5 litres per 100 km, this works out to about 15.375 cents per kilometre. The

road system cost in NSW would then be one third of the charge for such a truck in New Zealand of 47 cents (Australian) cents per kilometre.

During 1995-96, New Zealand's road user charges for heavy trucks charges raised a total of \$NZ425 million out of Transit New Zealand's road revenue of \$NZ888 million - that is, about 48 per cent of the main source of road funds (New Zealand Ministry of Transport, 1997, p61). Compare New Zealand's raising about 48 per cent of road system charges from heavy trucks with the NRTC level of about 16 per cent now prevailing in Australia.

Low road pricing for heavy trucks encourages more freight off rail, sea, pipelines or conveyors along with influencing land use decisions. In turn, this imposes significant costs, including higher road maintenance costs, higher road construction costs, demand for bringing forth road works, and increased road safety risk. As well, air pollution and greenhouse gas emissions result from the use of at least an additional 100 million litres of diesel each year than would be used if Australia had efficient rail track alignment between its three largest cities, and improved competitive neutrality.

13. As noted by the Business Council of Australia in 1996, Australia has one of the world's the highest road freight per capita (measured in net tonne-kilometres per head) with latest ABS data indicating some 119 billion tonne km for 1995 (or about 6500 net tonne km per person per annum). Whilst much land freight activity is now most effectively performed by road trucks, the dubious distinction of Australia having high road freight per capita has arisen in part because road transport undertakes significant interstate and bulk freight tasks. Elsewhere (in a report for the Neville inquiry) I have estimated that some 10 billion tonne km of these freight tasks currently undertaken by road could be performed by an upgraded rail system with improved energy efficiency, but, that a even larger freight task currently performed by rail, could, under various conditions, be won by road freight.

14 In Australia, the Government's present tax reform package, with proposals to lower the cost of cars and put a GST on public transport, is a further strike against ESD and reducing Greenhouse gas emissions.

So also are proposals to lower diesel excise to 18 cents per litre. This impact will go far beyond the loss to consolidated revenue of some \$1.44 billion per annum based on ABS SMVU 1995 road use of some 5969 million litres (say 6000ML) of diesel at some 24 cents per litre (42 down to 18 cents). For rail, at some 450 ML per year, the revenue loss will be some \$76.5 million per annum (35 down to 18 cents). However, there will be a host of second order effects, including the likely transfer of some Melbourne - Sydney - Brisbane freight from rail to road. This is likely for several reasons, one is that fuel costs in 1993-94 were about 12 per cent of freight train operating costs (Bureau of Industry Economics, Rail Freight 1995, p 71) and in 1992 were about 21 per cent of long haul truck operating costs (Bureau of Industry Economics, Road Freight 1992, p 44), and at present, as per the BE 1995 report, because of longer transit times plus road pick up and delivery, rail has to charge lower

than road to hold even a low modal share of inter-capital city land freight in Eastern Australia.

The least that can be done is to ensure that all environmental and social costs are factored into liquid fuel prices.

Conclusions High liquid fuel use in transport, accounting for about 25 per cent of Australia's energy use, impacts directly on Greenhouse Gas emissions. It also impacts on ESD in many ways, including land use. There is much more that Australia could be doing to conserve energy in the movement of people and goods, but this will require much more attention being given to road pricing, and more balance in allocation of Federal land transport funding to road, rail and urban public transport. A review of National Competition Policy and current GST proposals as they relate to ESD are also in order.

There is a clear need for more and better data, and this would be assisted by Government requiring its own departments and agencies, reporting on how they promote ESD principles and Greenhouse Gas emission reductions in their own operations, and the sectors of the economy for which they have responsibility.

Please advise if you would like further information on any of the topics raised.