PEOPLE FOR ECOLOGICALLY SUSTAINABLE TRANSPORT(PEST)

Submission to the Productivity Commission Inquiry Into Progress in Rail Reform

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INTRODUCING PEST

PEST is committed to ensure that transport planning and funding practice honours the commitment made by the States and Commonwealth when the Climate Treaty was ratified by all state governments in December 1992. Our concern is not just transport, but ecologically sustainable transport within the context of ecologically sustainable development (ESD). We know that without an ecologically sustainable transport (EST) ESD will never be realised. For land-use and transport planning this is a radically new concept because in an overpopulated world it means that houses are no longer built on potentially productive land, farming no longer degrades the precious top soil, and that transport systems no longer generate unsustainable urban sprawl. PEST supports without reservation the following Agenda 21(Rio de Janeiro 1992) transport strategy:-

Transportation strategies should reduce the need for motor vehicles by favouring high occupancy public transport and providing safe bicycle and foot paths. Municipalities need to be developed in ways that reduce the need for long distance commuting.

This is why this submission addresses the need for more Commonwealth funding of railway infrastructure and argues that greater priority to be given to integrating the more sustainable modes of transport with urban rail systems. We support the Vaille Inquiry reports overall recommendations for greater levels of rail investment and present the case for better intermodal integration of urban rail systems that was not considered in any depth by the Vaille Inquiry. We argue that world best practice for rail systems should go beyond narrow operational considerations. There is a need to consider how rail systems can best contribute to world best practice in progress towards ESD. The unsustainable nature of Australian national development is shown on charts A and B.

There is a need to consider how rail systems can help mitigate a future world economic crisis brought about by the rapid depletion of both Australian oil and the worlds cheap (conventional) oil. Oil depletion is a medium term threat to the governments stated economic objectives which cannot be ignored. Indeed, Australian coal reserves are such that trains can be powered by coal directly or indirectly via power stations for at least 400 years after all the cheap oil has gone.

This Submission also considers best practice in the Netherlands and Japan where effective national, strategic planning and coordination arrangements over many years have created transport systems that make better use of national car fleets and have greatly reduced oil consumption for passenger transport. In both countries the intermodal integration of urban rail passenger transport services is

far better developed that in Australia and in Japan over 4 million rail patrons use bicycles to access railway stations every working day.

UNSUSTAINABLE TRENDS IN AUSTRALIAN PASSENGER TRANSPORT.

The Issues paper ³Progress in Rail Reform² asks that world best practice be taken into account. We recommend that the World Bank Report (Kenworthy et all 1997) ³Indicators of Transport Efficiency in 37 Global Cities² be used as a guide for the overall definition of world best transport practice as it relates to the future growth and development of all Australian Capital cities. While the WBR uses data for 1990 only it is very relevant because all the more sustainable forms of transport are in decline in Australia. The overall decline of all the more sustainable forms of transport in Australia for the trip to work are shown on chart A .However these data only apply to the one third of the population who made a journey to work outside the home on the day of the Census. It excludes trips to school or educational institutions or by those not in the work force.

Chart A

What all cities have in common is rapidly increasing levels of unsustainable motorisation,declining use of public transport, walking, the informal sharing of cars and very little increase in commuter cycling since 1976, There are minor differences between cities, some of which have a better record than others (Parker 1998). The trends for the trip to work by rail are shown on chart B

Chart B

The left graph on chart B shows that the percentage of persons using the rail system in Melbourne has declined from 12.5% of all trips in 1976 to 8.5% in 1996 and is a far larger loss of market share for the journey to work than in Sydney the most comparable rail system.In Melbourne the 1976 to 1996 trend for the trip to work is clearly shown on chart C and the decline of all the more sustainable modes of transport will continue to the next census in 2001 because long term strategic plans to reverse these trends do not exist. The Victorian government has emasculated the strategic planning process and most so-called strategic planning documents are full public relations hype and with no substance.The market driven development process is merely a cover up for developer initiated change.

Chart C

The number of persons using the Melbourne rail system has decreased by 38,000 since 1976 and in the same time period the number of persons using the Sydney rail system has increased by 15,200 (right graph).The big difference between the two rail systems is that Melbourne lost 6,300 female rail commuters and Sydney gained 21,000 female users, also more male rail commuters have been lost in Melbourne than Sydney.This data indicates that

the Public Transport Corporation has not making the system wide improvements needed for many years and the connectivity of the bus and rail system still needs to be greatly greatly improved and there are other problems too.

Unfortunately it took all the 1980s to learn from best practice overseas that graffiti must always be removed within a day or so.The failure to understand the psychological impact of removing staff from stations in the 1980s was also most damaging. The rail authority virtually gave many stations to the vandals and graffiti daubers to play with and slowly over the years created threatening station environments. By now they should have learnt from the UK that irrational and costly vehicle parking policies that provide $millions for car parks each year and very little for those accessing stations by bicycle are blatantly discriminatory against cyclists and actually encourage car dependence (Parkhurst 1995). For 15 years in Melbourne the encouragement of bicycle access to stations was ignored. For a decade from 1982 over 50% of all bicycles parked at rail stations were stolen and the number of bicycles parked dropped from 2,150 to around 500 in 1995 and of these half were in bicycle lockers.(Parker 1996). Since 1995 there has been as some improvement and there are now 630 bicycle lockers and 250 leaning rails inside shelters and 940 leaning rails have replaced the old racks that only locked the front wheel. A few thousand more secure bicycle parking facilities will have to be provided in future. If the bike/rail market share is to be increased bicycle access will have to very positively encouraged to overcome widespread community perceptions of uncontrolled bicycle theft and vandalism at stations. See Appendix A for detail

For everyday trips for all purposes other than the trip to work the only accurate historical data are for the period 1979 to 1996 in Metropolitan Melbourne.This data are near enough to an estimated average for Australian capital cities to be used to compare the percentage of all trips by different modes in Australia and the Netherlands over an 18 year period on chart D. The percentage of trips by car drivers has increased over this period in Melbourne and is expected to increase further because there is no strategic traffic and transport plan to reverse the process like there is in the Netherlands.(N.E.P.P.3 1998).

While there has been a much smaller increase in the percentage of trips by car drivers in the Netherlands there has been a decline in car passenger trips and a much smaller decline in walking trips and the level of bicycle and public transport use is relatively unchanged. Not only are greenhouse emissions stable in the Netherlands as a consequence of containing the increase in motorisation with rational national strategic planning but the average per capita urban GHG emissions are less than one half that of Australia. Bike/rail travel is growing at a very healthy rate and the passenger transport emissions will be contained within the Kyoto target.

Chart D

The only other data for every day cycling in Australia are for trips to school and places of higher education.Bicycling trips to school in the state of Victoria which includes Melbourne (ABS 1995) are similar to data are obtainable in other Australian states. What we can say is that bicycling trips to a place of education in Victoria declined from 9% of all trips in 1974 to 5 % of trips in 1994 and that rend is down. In the Netherlands the definition of an educational trip is different so the figures are not comparable. Even so the decline in bicycle trips to a place of education only dropped from 60% in 1980 to 52 % in 1995. Clearly the use of cars to ferry children to school is far less in the Netherlands than in Australia.

THE WORLD BANK REPORT (WBR) WORLD BEST PRACTICE

This WBR written by Australian Academics uses a variety of economic and environmental indicators to assess the role of urban transport system as a whole and what the long term function of rail networks are in the more environmentally friendly, economically efficient and technically innovative urban transport systems. In the following section we used the data in the report to analyse and produce bar charts showing the connection between the wealth of cities and urban rail infrastructure and the crucial intermodal link between bicycles and trains needed to reduce CO2, NOx and VHC emissions and transport accidents to a minimum. The WBR uses 27 economic, transport and environmental indicators to assess the performance of urban transport systems in 37 cities in 1990. It was written by Australian Academics (Kenworthy et all 1997) at Murdoch University in WA. Similar studies were done for 1970 and 1980.

The WBR conclusions are important for the Inquiry because they have measured a range of dynamic factors behind the growth of urban economies and the role of efficient rail networks as a catalyst for the more efficient use of urban land and wealth creation while reducing greenhouse gas emissions. The measure of wealth used is the gross economic product of the region in which that the city is located or Gross Regional Product (GRP). It is very different to the Australian Industry Commission report on Urban Transport which looks at the rail network in isolation from the specific urban economies served and ignores the long term role of railways in reducing carbon dioxide levels, polluting emissions and transport accidents. The focus is on metropolitan rail systems which are from an environmental view point the most important element in the Australian rail network

Chart 1 shows that the per capita wealth of a city as measured by the Gross Regional Product The WBR concludes that in large cities rail networks are the basis of most environmentally friendly, economically efficient and technically innovative urban transport systems . It also concludes that cities which continue to implement plans to increase non-motorised transport are likely to see immediate and long term benefits. It comments that US cities that have

addressed predicted growth in traffic by expanding the road system have greatly increased car use between 1980 and 1990 from 8800 km per capita to 10,870 per capita. It notes that Australian car use has expanded from 5,794 km per capita in 1980 to 6536 km per capita in 1990. It suggests that the predicted increases in car ownership and commuter car use in Australian and US cities will make them less economically productive; by generating low density urban sprawl which will, in the long term, drain cities of wealth.

(GRP) is greatest in those cities in Europe the USA, Australia, Asia and Japan that have effective fixed rail public transport systems that can compete with the car. The percentage of all urban trips by train and tram are summarised as follows in accord with the trip to work categories on charts 1,2,3 and 4 as follows: the three wealthy Asian cities average 36.5%, the developing Asian cities average 4.2%, the six European cities average 18.3% ,the five European cities average 16.4%, Toronto 13% and New York 8.2%, Five US cities average 2.4% and the most car dependent other four US cities have 0%.

Note that the, the six European cities of Amsterdam, Zurich, Stockholm, Copenhagen, Munich and Vienna with only 30% to 45% of private trips to work by car or motor cycle have the second highest GRP and 18.3% of all trips by train and tram..Indeed, these cities, are tourist attractions and more livable as a consequence precisely because they have limited car use, are reurbanising, making better provision for walking and cycling and upgrading the railways. Tokyo has the highest GRP and a massive 60.8% of trips by train and tram on what is probably the most seamless and according to an WBR indicator the third most energy efficient rail system in the world.

In terms of MJ/per passenger kilometre Beijing is the best performer with (0.07 MJ) and Manilla the second best with (0.6 MJ). Tokyo (0.13 MJ) is way ahead of the 11 European countries with an average of (0.49 MJ), Toronto (0.68 MJ) and New York (0.72 %). Sydney is very good with (0.29KJ), Melbourne (0.50 MJ), Brisbane (0.56 MJ), Perth (1.73 %) and Adelaide (2.5 MJ) being the worst of all 29 cities with rail and tram systems. In terms of transit cost recovery in the developed world the best performers are the highly patronised fixed rail systems in the wealthy Asian nations (average 119%). The 11 European countries (average 54%),where better than the 9 US cities (average 35%). In Australia cities cost recovery was best in Sydney (55%), Brisbane (54%), Adelaide (40%), Perth 28%) and lowest of all Melbourne (28%). With the exception of Beijing which had only 20% transit cost recovery, the other developing Asian cities recovered their costs with an average of 112%. 5 wealthy cities: bicycle friendly, good railways & low CO2 emissions

This analysis is more specifically focussed on the benefits of railways and the intermodal link up of rail and bicycling. This has been done by separating the data for the six cities in Europe with lowest levels of car commuting out from the eleven European cities grouped together in the WBR. Five of these six

cities have high levels of bicycle use (See notes on chart 1) for mostly short, point to point bicycle trips. In three of the six cities a significant number of bike/rail trips are made instead of long urban car trips. These six cities have better balanced transport systems, heavy reliance on light and heavy rail systems, more compact urban development, high levels of walking and (apart from Vienna) have high levels of bicycle use, so they are more economically efficient (See Chart 1). If there is no significant level of cycling the economic potential of cities is reduced and carbon dioxide emissions increase (chart 2).

Developed cities with the lowest level of public transport use and reliance on buses have the highest levels of carbon dioxide emission and cannot compete with the car because the average speed of buses is far too low. In Houston where 93% of trips to work are by car, per capita carbon dioxide emissions are 5,192 kg or 3.5 times as much as Amsterdam (1474 kg) and still going up and the average bus speed is 43% of that of the car.

In Australia 80% of capital city trips to work were by car in 1990 and in 10 major cities in America it was 85%. Compare this to only 40% car commutes in Amsterdam, 38% in Munich, 36% in Zurich, 31% in Stockholm, 29% in Tokyo and 22% in Singapore. In all these places average train speeds are much higher than average car speeds for the rip to work. Compared to Australian cities in 1990, the European and Asian cities produced only half of the passenger transport carbon dioxide emissions, while the US city emissions overall were 85% higher. Beijing is in a league of its own with only 6% of trips to work made by car and a massive 58% being cycling trips (Song 1989) but with only 14.6% of all trips by rail or tram. Planning Beijing and other cities[1] roads for high levels of bicycle use have greatly assisted China in creating the largest and fastest growing economy in the world and what they need now is to expand rail systems as cities grow and trips to work increase in length.

Chart 1 shows that Tokyo is the wealthiest of the 37 cities and charts 2,3 and 4 show it has a more sustainable transport system than any American city. In Tokyo 49% of trips to work are by public transport and 22 % by walking and cycling. In the outer suburbs of Tokyo around 30% of access trips to rail stations are by bicycle (Replogle 1993). In Japan today 3.5 million people use bicycles to access rail systems for the trip to work/school or go shopping and Japan is the model to follow for the development of bike/rail intermodal interchanges. Although Tokyo is a high density city that is physically very different from Australian cities it is important to recognise what a transport asset the bicycle was during the postwar reconstruction of Tokyo and other Japanese cities because most of Japan's urban and rail infrastructure was damaged or destroyed, in World War 2. An economist (HOOK,W.1994) has analysed the impressive performance of the Japanese economy since World War 2 and has this to say about rail transport and non-motorised travel and it applies to any economy bent on wealth creation: [3]Japan[1]s decision to

discourage the use of the private automobile and encourage the use of rail based mass transit and non-motorised modes was part of a broader policy to nurture it[1]s domestic industries, constrain consumption and encourage savings and minimise the costs of inputs to industry.....By minimising aggregate transportation costs, Japan has been able to minimise their production costs, making their goods more competitive in international markets. Further by discouraging the use of automobiles and encouraging savings, a larger pool of potential investment capital was created... and encouraged investments in modern technology... allowing scarce economic resources to be invested elsewhere[2]. 5 bicycle friendly European cities with cleaner air & safer roads

Chart 3 shows that per capita emissions of nitrogen oxides (NOx) and volatile hydrocarbons (VHC[1]s), are greatest in north American, Australian and some developing Asian cities. The lowest levels of per capita emissions are in the six European cities (with only 30% to 45% of private trips to work by car or motor cycle) and in Hong Hong and Tokyo. The data suggest that railways, if competently planned, make a major contribution to sustainability on all indicators, particularly urban air pollution. The more efficient European countries regularly upgrade the quality of their rail systems and encourage bike/rail travel for this reason.

Chart 4 clearly sets out the road safety performance of the 37 cities. There is a great deal of variation with Kuala Lumpur ,Seoul, Phoenix and Houston having the highest death rates per 100,000 population. The lowest death rates are in the European cities, Toronto (metro) and the wealthy Asian cities of Tokyo, Hong Kong and Singapore. In these cities[1] railways make a great contribution to road safety by getting cars off the roads. The privatisation of passenger transport in the form of mass car use is inherently dangerous compared to rail travel; the worlds car fleet kills around 270,000 people each year. From 1945 to 1996, 135,000 Australians died in road accidents and 1.8 million have been hospitalised. In comparison only 85,100 were killed in both World Wars. Car dominated transport systems are clearly a health hazard.

The WBR notes the importance of non-motorised transport. It states that [3]cities which implement plans for improving the contribution of non-motorised transport are likely to see emmediate and long term benefits[2]. It specifically refers to cycling as being safe in the right environment which exists in Amsterdam and Copenhagen where they have the highest levels of bicycle use and have very low death rates per 100,000 population. The WBR is right in saying that bicycling need not be unsafe but this understates the actual and potential contribution of cycling. Bicycles are a part solution in creating a better integrated and more non-violent transport system. Their contribution to sustainable mobility in five of Europe's greatest cities, in Beijing and Tokyo is also of great consequence. Transport systems with high levels of bicycle use are safer and facilitate modal integration with trains trams and buses that are all much safer than the cars they replace.

The major economic disbenefit of mass motoring from door to door is that it encourages a sedentary lifestyle. Furthermore, it discourages people from walking or cycling to work or the rail station five days per week year in and year out all of which is health giving physical activity . The number of people who die or are sick directly or indirectly from sitting in a car is far greater than drivers killed or injured in a road accidents. If ever a revised edition of the WBR is produced some health indicators would be useful to assess these hidden health hazards of car dominated transport systems. Proportion of non-motorised trips to work from the WBR and bicycle trips to work when they are know is shown on chart 5.The bar charts shows that the average citizen in the five European cities (30% to 45% car dependency) with high levels of bicycle and public transport are wealthier, produces less carbon dioxide, NOx and volatile hydrocarbon emissions and has less risk of being killed on the roads than cities in other developed countries.There is also some health data from the Netherlands to show that in Amsterdam people are also lighter and fitter as consequence of so much walking and cycling to work, school or shopping or the railway station.

The rail inquiry needs to recognise the environmental, transport safety and health benefits arising from the further development of urban railways and the provision of bike/rail intermodal facilities for secure bicycle storage and bicycle hire.

THE NEED FOR A NATIONAL OIL SECURITY STRATEGY THAT GIVES PRIORITY TO ELECTRIC RAILWAYS

Existing transport funding system is so biased in favour of roads that it is generating more and more solo driving, thus compounding the problem of unsustainable land use (Australian car use has expanded from 5,794 km per capita in 1980 to 6536 km per capita in 1990). In federal planning there is funding for new roads but there is very little for railways (PRS 1994). With respect to urban transport funding we note that the Parliamentary Research Service paper NO 12 (PRS 1994) recommends that [3]further (rail) investment over a decade... with consideration being given to money being raised from petrol taxes[2]. That is an agreeable solution at half a cent per litre increase.

The present patterns of production, the distribution of goods and the location of employment are not ecologically sustainable or economically sustainable because they require high inputs of liquid fuels. Furthermore, the future expansion of oil based transport is a threat to national security. The depletion of indigenous cheap oil supplies is only eight years away so there is a urgent need consider that past and current patterns of transport funding are hastening the depletion of indigenous oil supplies and increasing the growth of oil imports. Meanwhile, the global problem of oil depletion will worsen the domestic problem of oil supply. Oil depletion is addressed on chart 6 and in the

prestigious science journal ŒNature[1] (attached as appendix B) and states the problem:- [3] Discovery of oil reserves are not keeping pace with with production. Globally new discovery has averaged 9 billion barrels per year since 1985, while production has averaged 23 billion barrels per year. The rate of discovery peaked in the 1960s and has since declined[2]

Within the time frame of this Inquiry the overall oil supply situation is likely to become critical if the price of oil doubles or oil supplies cease for a significant period. (Campbell ,C.J.and Laherrere,J.H.). By this time the Australian car industry will have produced millions of energy wasteful large cars that will comprise at least 50% of the Australian car fleet and demand for oil will be growing. Even if we accept the conservative estimate by the Australian Institute of Petroleum of oil price increases by the year 2002, car and oil imports together will add around $8 a billion a year to the balance of payments problem. By 2005 this will this increase to $10 billion. It is a false economy to allow existing policies to generate more demand for imported cars and oil when even the most conservative estimates of 2005 oil prices will be placing huge burden on the economy and the worse case scenario will wreck the economy. The Inquiry should recognise the need to build the rail infrastructure for urban and inter city electric trains and rail freight indirectly powered by Australian coal, for which there is at least 400 years reserves even assuming increased rates of consumption. Old technology such as electric traction for trains and trams that run on plentiful supplies of electricity from coal reduce oil are needed. New train technology is also needed in the form of lightweight aluminium passenger trains fitted with regenerative braking systems that will double the energy efficiency of urban rail systems. (Reid 1995) The humble bicycle can greatly increase the catchment areas of urban rail corridors now and later when safer access routes are provided to major stations at the intersection of busy roads . (The map on page 3 of Appendix A shows the potential for this in Melbourne)

However, we need more than electric traction and we need new energy efficient new cars and other fuel savers such as buses and power assisted bicycles using ethanol as a power source. The greater range and hill climbing capacity of power assisted bicycles would further extend the effective catchment areas of rail corridors. The most important new fuel source is ethanol derived from wood grown in forests of Blue Mallee on the 25 million hectares of land damaged by salt: as a result of settlement by whites over the last 150 years. This would provide a cleaner fuel with no increase in CO 2 emissions for around 40% of transport needs and in the process rehabilitate damaged ecosystems (NELA 1997).

Chart 7 shows the overall oil production and imports needed in Australia by the year 2020. Around 2020 when even the most conservative oil experts say that very little cheap (conventional) oil will be left in the worlds oil fields Australia will be totally dependent on oil imports. The demand for oil from the transport

sector is growing rapidly and given current market driven trends will peak around 2005 and then decline to 1997 level by 2015 as more energy efficient cars are gradually introduced into the national car fleet.This BTCE forecast is shown on chart 8 below.

One alternative to conventional oil, is shale oil but that is ecologically unsustainable. however ,the government is encouraging Australian mining interests who are providing $250 million for an oil from shale pilot plant which will be producing 5 million barrels of oil a year by 1999. In the longer term the plan is to expand this to 31 million barrels a year (Age 1997). The problem with using the large reserves of shale oil is that so much energy is used in moving million of tonnes of shale and then heating it to extract the oil that it will double greenhouse gas emissions.Apart from that the oil is not suitable for making aviation fuel and is best suited for use as chemical plant feedstock.

Because the government ignores long lead time in getting the large scale use of renewables under way, we can conclude that when the final oil crisis does come, renewable fuel sources will not be sufficiently developed and petroleum will be produced from the huge reserves of Australian shale oil, grossly unsustainable and technical wasteful as that may be.

Australia like other developed industrial economies is so dependent on oil that it will do anything, when it is too late to do the right thing, to ensure secure supplies.If the price of crude oil doubles non-conventional oil producers will then find it profitable to extract crude oil from, shale oil and the thick gooey residues that up till now has been too difficult to extract and are left behind when oil wells are finally shut down. If the price of crude oil triples it will be profitable to produce crude oil from coal and that will triple carbon dioxide emissions. The current and future world demand for world oil is determined by the growth in the world motor car fleet and the growth in in the worlds population. The production of oil is shown in relation to the growth of population and the rapidly increasing Asian demand for oil on chart 9.

It is implicit in the terms of reference of any inquiry that such grave concerns are taken seriously because to not do so is tantamount treason. The rail infrastructure must be greatly expanded in anticipation of the threat of oil depletion to our national security while at the same time providing more sustainable fuels to replace petroleum while investing in new vehicle technology to make the best use of fuels such as ethanol.

Funds for railway infrastructure are pitiful compared to the need. A long term strategy plan for electric rail transport is urgently required to enhance national security by providing the mean to move freight and workers in the likely event of conventional (cheap) imported oil being unavailable between from 2005 to 2015.

World best practice; strategic planning & coordination

The Inquiry ³ issues² booklet expresses interest in examples from other countries where effective national, strategic planning and coordination arrangements apply within a federal system of government ?² There are two examples of federal systems in the USA and the Netherlands which we would bring to the attention of the Inquiry as examples of international best practice. However the best model that is fully documented in English is now available from the the Netherlands (N.E.P.P, 3 1998)

The Intermodal Surface Transportation Efficiency Act (ISTEA) in the USA is a good model for allocating transport funding in a federal system in such a way as to foster effective state and City strategic planning that in practical way implements both national economic and environmental goals. However, the Dutch government has the best National Environment Policy Plan (NEPP) that is cleverly designed to reduce greenhouse gas emissions and has a large transport component including the expansion and improvement of their national rail network (Tolley &Turton 1995)

The Netherlands experience NEPP 1989 and NEPP 2

One of the most imaginative approaches to transport and environmental problems is the Netherlands National Environment Policy Plan or NEPP for short. The NEPP recognises that safeguarding environmental quality while achieving ESD will take several decades. The first NEPP was released in 1989 and the second in 1996 (NEPP 2) and several more are expected in what is recognised as a long and difficult planning process.The most important features of the NEPP is the way individual measure reinforce one another to produce an integrated package which integrates environment, transport and land-use policy at the national, provincial and local levels.

There is a strong federal element in that the Netherlands government system which is divided into 12 provinces governed by provincial counsellors, who are elected every four years. The day to day management of the provinces rests with the Provincial Executive. This body usually has six full time members elected from amongst the provincial counsellors. It is chaired by a provincial governor appointed by the national government and translates the NEPP into terms relevant to their own area taking into account the special problems and needs of province. The provincial executive oversees the drawing up of a provincial NEPP. Recent and planned investment in NEPP 1989 and NEPP2 has or will be providing the following: high speed passenger train routes to reduce intercity air travel between Schiphol Airport and German and French airports; high speed rail freight links to get the trucks off the roads; highly efficient multi modal freight transfer systems in Rotterdam and other ports to decrease cost and energy use.

NEPP aims to increase rail passenger traffic by 15% by 2010 through improving bicycle parking at stations and implementation is already well ahead of schedule.The better bicycle access to stations and secure bicycle storage and intermodal access for buses provided has increased rail patronage beyond expectations. Netherlands Railways are well on the way to increasing rail passenger traffic from 9 billion passenger km in 1987 to 17 billion passengers in 2010 (RGI 1996) For Netherlands Railways, when competing with door to door travel by car, the time saving that comes from cycling to a station instead of walking greatly increases their competitive edge. Bike/rail commuting experience on the Danish, Swiss and Japanese railways also indicates this is important (Replogle 1993).

The Dutch truck fleet is as a result now the cleanest in the world and bicycle use at 28% of all trips indicates clearly that the bicycle infrastructure is the best as well. Another example of NEPP effectiveness is that Amsterdam has much lower levels of car use (40 % of all trips) because in the Netherlands they have recently invested so much more on trams and trains and bicycle facilities than Australian cities and cut back the growth in car ownership and use. The most recent NEPP development is eliminating urban sprawl between cities by ensuring that increasing demand for housing is accommodated by urban consolidation within cities. The objectives of the NEPP are that:-

Vehicles must be as clean,quiet , safe and economical as possible. The choice of mode for passenger transport must result in the lowest possible energy consumption and least possible pollution. The locations where people live shop and work and spend their leisure time will be coordinated in such a way that the need to travel is minimised.

The approach of the NEPP is shown on chart 10. As pollution from traffic is seen as a three step process, these objectives are met by a ³three track² response, the tracks being those of technical vehicle standards, reducing ³automobility² and instigating urban traffic measures .

The second track is of specific interest to the Inquiry. The policies for reducing car use aim to shift people from cars to public transport for the longer journeys and to cycling and walking for the shorter ones. Also the second track will improve the transport of freight by rail, water and will tighten up physical planning policy, to ensure that businesses which are labour intensive or amenities which attract numerous visitors will not be permitted to locate at places which are not well served by public transport. The Dutch policy is to put the ³right business in the right place². Outer urban super markets accessed by car are no longer built. Universities are not built like they are in Australia as low rise spread out institutions conveniently accessible only by car, instead they are compact multistory campuses built alongside rail lines and if their is no local station they build one. Without the NEPP it was expected that car kilometres would increase by 72% over the period 1986 to 2010 with the NEPP

this increase will be lowered to 48%, a worthwhile reduction but is still a long way from being a sustainable transport system. It serves to illustrate what a difficult task lies ahead of the Dutch and all motorised countries. At least the Dutch know were they want to go, their vulnerability to sea level rises and the lack of oil reserves has got a lot to do with it. As the old saying goes [3]necessity is the mother of invention[2].

In Australia we need more bicycle access to urban rail systems, faster trains and safe and secure bicycle access at both ends of a railway trip. Federal funding should be provided for rail track, rolling stock and intermodal facilities as part of an integrated funding package for sustainable transport within the context of a Australian National Environment Plan. The US Intermodal Surface Transportation Efficiency Act (ISTEA) 1991.

In terms of technical innovation in designing rail systems and high speed trains the US has little to offer. However, in the administration and directing state policy via overall funding mechanisms there is much of relevance to Australia is another matter. From 1991 to 1998 a suitable land transport funding model for Australia existed in the U.S. where the U.S. Department of Transport, and the Environment Protection Agency set in place the Intermodal Surface Transportation Efficiency Act (ISTEA) in 1991 to make urban transport more sustainable.

Six years later after the spending of many $billions of ISTEA funds on facilities and the conduct of urban transport studies to support sustainable transport, it became clear during a review of the ISTEA in 1997 that the ISTEA had more than fulfilled expectations. This is why all the essential features of ISTEA continue in the Transport Equity Act for the 21st Century (TEA-21) introduced by President Clinton into Law in June 1998.(TEA-211998)

Great progress has been made since 1991 with $151 billion in ISTEA funds over six years for highways, public transport and safety programs. Public transport is being revitalised in most American cities with a population of over 200,000 . For example over $10 billion has been spent in California on public transport. Last year $450 million was spent on bicycle and pedestrian facilities and because every state now has a ISTEA funded bicycle and pedestrian planning unit construction funding may soon go up to over $1 billion a year.

Instead of separately allocating federal highway funds for roads, as was done previously, recipient states can spend highway funds on roads or on public transport or on other measures to reduce the environmental impact of road use. Many cities have used ISTEA funds for new heavy and light rail developments. Indeed the ISTEA and the U.S. Clean Air Amendments Act of 1990 are designed to work together. In combination they require that state and cities engage in integrated transport planning with full community participation. The environmental objectives of ISTEA are:-

1. Tying transport funds to achieve clean air objectives, with no funds if smog levels are increased.
2. Insistence on the use of planning processes that heavily involve community participation before funding is provided for construction. There is no longer ³a gun at the head² of the state to accept funding for a freeway or lose it altogether.

US Federal funds to link bicycles and transit were provide under ISTEA and are now provided under TEA-21.TEA-21 further encourages transit agencies to invest in linking bicycles and mass transportation by increasing the Federal Share of of transit enhancement grants to 95% of the project costs.(FTA 1998) Bicycle projects using other transit funds may be funded at up to 90% of federal matching level. For more information about these programs visit the FTA web site at www.fta.gov

Learning from best practice in other places an Australian TEA-21 could improve upon the U.S. Act. For example any new or upgraded heavy or light rail development or ŒO¹Bahn bus system should go ahead only if there is a coherent policy that increases housing, jobs and services in transit station precincts. This has been successfully done in most Canadian cities and is common practice in northern Europe, especially in the Netherlands.

Railway privatisation, competitive advantage & long term goals

The inquiry terms of reference regarding private sector participation are largely irrelevant and quite premature for Australia because transport and land-use planning operates within a policy vacuum. There are successful private and state run rail systems and we suggest that success is more important than ideological commitments to the form of ownership. What matters most for successful national rail systems is that the long term objectives of both public and private operators are compatible with national objectives and that National governments implement supporting policies to enable rail operators to succeed .

Consider private ownership in Japan. Asia Week Surveys of the 1000 largest companies in our region show that three privately owned Japanese rail companies make $100¹s of millions while expanding their rail services and developing three new high speed trains. However, these three successful rail systems and three others ³compete with the car rather than one another². Indeed, privatisation works in Japan because car use is discouraged. For example, the tax perk for office workers is a yearly rail ticket not a company car with free petrol and parking, there are very high petrol prices and the most restrictive parking controls in the world. Railways always had top priority in transport and land use planning.

Japanese policies go back to the 1975 National Energy Security Policy designed to "reduce the energy used to produce goods and services", including the petrol needed to get people to work by car. Many years later privatised railways became and integral part of a long this long standing and all embracing Japanese energy security policy when it was updated by an inscrutable and equally long standing processes of achieving bureaucratic consensus in Japan.

Japanese car, train, bicycle and bus fleets are so much better utilised so that that main roads can carry far more freight. By 1980 over 50 million bicycles were regularly used for utilitarian purposes and still are today. Cities grew very fast and trips to work increased greatly in length and the bike/rail trip substituted for many direct bicycle trips to work. Bicycles are used for all, or part of, 20% of all trips to work and a high proportion of school and shopping trips. 3.5 million bicyclists access stations to make long commuter journeys Australians would make by car. Secure bicycle parking spaces at stations provided since 1975 are valued at A$3.5 billion at 1990 prices. The bicycle is very well integrated into the transport system. This is the best model of intermodal integration in the world today with the the Netherlands coming a close second. In the long term, without measures to discourage car use and reurbanisation there can be no real growth in public transport use only a marginal increase. Australian style railway privatisation will mostly fail because there is no clear idea of were the transport system is going and how privatisation can bring about the changes required to let railway compete with the car to serve the long term National interest. Compared to Japan Australia has to use nearly three times as much of its GNP for transportation, most of which is wasted in urban car travel. For 20 years car use has been discouraged to make Japan economically more competitive. In comparison we have to use three times as much per person of our GNP for transport; which is a hidden overhead on everything we export. This is so because the Japanese government has a strategic plan for investing in railway infrastructure that helped make the country more competitive and within later revisions of that plan the privatisation of six railways was designed to achieve specific national objectives.

Our oil reserves run out in eight years but the privatisation of Railways in Australia is not motivated by a rational need for energy security or economic efficiency but voodoo economics. The proposal for cutting the operation of the Melbourne urban rail system in two is an absurd innovation that is so technically inept that no other rail system in the world has attempted to do it. When you consider the 20 urban rail systems that have significantly reformed their operations in recent years not one of them has split their system in two (Andrews 1997). It is so unthinkable because it is so inept. The Victorian government is not privatising the railways as is done by competent governments it has conducted a garage sale of a state asset to rid it self of a responsibility.

The recommendation of the Vaille Inquiry that ³ the Commonwealth assume the leadership role and consult widely in developing an integrated national strategic plan by 1 July 1999 is very necessary. However the piecemeal and adhoc reform of state rail systems should not be allowed to jeopardise the development of a coherent National Transport Strategy designed to implement Climate Treaty Commitments, reduce reliance on oil and conserve indigenous for reserves for essential purposes.

CONCLUSIONS

The Commonwealth has no strategic plan of any kind which could reverse the unsustainable transport trends our Cities. Indeed basic trends are wrongly interpreted by government agencies Fore example the Industry Commission 1990 report on the Car Industry predictions under estimated the growth of car imports to the year 1995 by $3 billion. Furthermore by the year 2002, car and oil imports together will probably add at least $8 billion a year to the balance of payme nts problem.Yet the 1996 IC report on the Car Industry fails to recognise such problems or to recommend that the Australian car industry make a commitment to producing more fuel efficient cars.

When faced with the future prospect of depleting supplies of cheap oil and the current uncontrolled growth of car use, an effective risk management measure is to introduce traffic demand management strategies, and invest in more sustainable forms of transport particularly inter city and urban rail infrastructure (PEST 1997) Unfortunately Common wealth funding give priority to investment in, high speed road networks that generate car traffic when world best practise shows that giving priority to extending rail networks generates rail traffic. Investments in road and rail networks are what determine transport behaviour in the long term so investment should be targeted in such a way as to increase the use of high occupancy rail vehicles

The Inquiry should recognise that investing in heavy and light rail networks and urban rail station feeder bikeways reduces external costs of car use and make cities more economically efficient and environmentally friendly in the long term. The ³four wheeled version of Russian roulette² kills ten times as many on Australian roads as the gun, but the Australian governments main preoccupation in transport has been to privatise new asphalt ³killing fields² and ignore railways. Further reductions in the urban transport death rate per 100,000 population will take place in other countries because safe rail systems have a high priority.

As cars kills around 2,000 people every year in Australia, rail transportation needs to given priority because if properly provided for it will go a long way to creating a non-violent transportation system.

There are successful private and state run rail systems however what matters is the long term objectives that public and private operators are trying to achieve and how they are both assisted by National governments to achieve national objectives. Success is more important than ideological commitments to the form of ownership.

The piecemeal and ad hoc reform of state rail systems should not be allowed to jeopardise the development of a coherent National Transport Strategy designed to implement Climate Treaty Commitments and reduce reliance on oil reserves which are being depleted nationally and globally at an alarming rate.

The inquiry terms of reference regarding private sector participation are largely irrelevant and quite premature for Australia because transport and land-use planning operates within a policy vacuum.

In the long term, without measures to discourage car use and reurbanisation there can be no real growth in public transport use only a marginal increase. Australian style railway privatisation will mostly fail because there is no clear idea of were the transport system is going and how privatisation can bring about the changes required to let railway compete with the car to serve the long term National interest

The Commonwealth has not accepted responsibility for adequately funding railways and bicycle infrastructure and this is very damaging because financial incentives can induce the states to fund state rail agencies and both local government and state government transport agencies to build bicycle facilities. The Commonwealth should follow world best practice and nurture the development of rail infrastructure in all urban areas as an integrated part of a long term strategy for sustainable transport development. In Australia we need more bicycle access to urban rail systems, faster trains and safe and secure bicycle access at both ends of a railway trip. Federal funding should be provided for rail track, rolling stock and intermodal facilities as part of an integrated funding package for sustainable transport within the context of a Australian National Environment Plan modelled on the practical experience of the Dutch in implementing their National Environment Policy Plan (NEPP).

In the event that the Dutch model of integrated national planning cannot be followed we suggest that learning from best practice in other places is still important. For example an Australian TEA-21.

For the purposes of Commonwealth funding an improved Australian version of the U.S.Intermodal Surface Transportation Efficiency Act (ISTEA) would address the need to reduce greenhouse gas emissions and air pollution from transport and to implement the Climate Treaty /Agenda 21 directive that came out of the world summit in Rio.

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