15 December 2005

Mr Rob Hansen
Research Director
Impact of Petrol Pricing Select Committee
Parliament House
BRISBANE QLD 4000

Dear Mr Hansen

IMPACT OF PETROL PRICING SELECT COMMITTEE

Further to the resolution of the Queensland Parliament to appoint the above Committee to examine a range of issues regarding petrol pricing in Queensland, attached is the RACQ's written submission.

This submission is detailed under headings based on the Committee's terms of reference (tor), although not in the same order as contained in the original resolution.

Should the Committee require any further clarification of these issues, we would be pleased to make ourselves available for additional discussion.

Yours faithfully

Gary Fites
General Manager External Relations
(encl.)

RACQ SUBMISSION TO *IMPACT OF PETROL PRICING* SELECT COMMITTEE

Economic and Financial Consequences of Current Fuel Prices [tor (b)]

Crude oil prices in United States dollars have nearly sextupled since early 1999 when they reached an historic low in real (inflation adjusted) terms. Since the beginning of 2002, crude oil prices have trebled. The price for West Texas Intermediate crude oil, a benchmark, light, low sulphur crude oil, peaked at just under US$70 per barrel on 1 September 2005, before slipping below US$60 per barrel on 9 November 2005 and fluctuating thereafter in the range US$56 to US$60 per barrel.

The substantial increase in oil prices over the past few years has been caused by:

- strong growth of demand from Asia and North America; and
- a slow supply response by explorers and producers to rising oil prices because of –
    - long gestation periods for additions to production capacity, plus
    - exploration and other investment response lags arising from fears of repeating the mistakes of over-investment in the 1970s and early 1980s.

Consequently, spare crude oil production capacity has dropped to its lowest level since 1970, leaving very little buffer for absorbing shocks such as short-term supply disruptions or demand surges.

The increase in United States dollar crude oil prices has been exacerbated by weakness of that currency relative to others.

The upward trend in crude oil prices over the past few years has been accompanied by substantial price volatility. It is likely that this has exacerbated explorers' and producers' tardiness in undertaking exploration and other investments to increase production capacity.

The volatility of crude oil prices is linked to the low elasticity (low responsiveness) of both supply and demand to price changes in the short-run. When both supply and demand have low price elasticity, even small shocks can generate large price movements.

In real (inflation adjusted) terms, the September 2005 peak crude oil price and early December 2005 prices were about 55 per cent and 33 per cent, respectively, above real peak prices in the early 1970s at the time of the first "oil crisis".

The September 2005 peak price and prices in early-December 2005, were still 30 per cent and 40 per cent, respectively, below the historical peak in real terms reached in early 1980 during the second "oil crisis" following the Iranian revolution deposing the Shah of Iran.

The rise in crude oil prices in Australian dollar terms over the past few years has been less spectacular than the increase in United States dollars. Australian dollar denominated increases in crude oil prices have been muted by a rise in value of the Australian dollar relative to the United States dollar. In early 1999, when real crude oil prices in United States dollars were at an historic low, the Australian dollar was equivalent to US$0.61-0.64. In early 2002, the Australian dollar was valued around US$0.52. In early-mid-December 2005, one Australian dollar was worth about US$0.74-0.75. While prices for West Texas Intermediate (WTI) crude oil in United States dollars increased by more than 450 per cent from early 1999 to mid-December 2005 and by around 210 per cent between January 2002 and mid-December 2005, Australian dollar prices increased by about 300 per cent and 110 per cent, respectively.

Australian petrol prices have risen over the past few years in response to rising crude oil prices in Australian dollar terms. In January 1999, prices for WTI crude oil were around $A19-21 per barrel and the Brisbane unleaded petrol price averaged $A0.59 per litre. In January 2002, crude oil prices (WTI) were in the range $A34.80-41.70 per barrel and the Brisbane unleaded petrol price averaged $A0.73 per litre. From January 1999 and January 2002 to early December 2005, Brisbane petrol prices have risen by about 75 per cent and 41 per cent, respectively, compared to increases in Australian dollar crude oil prices of about 300 per cent and 110 per cent, respectively, during the same period.

The substantial excise/customs duty (less Queensland fuel subsidy) component of the petrol price contributed greatly to petrol price increases being substantially less than proportionate to crude oil price increases in Australian dollar terms. Introduction of GST in July 2000 further affected the comparison between January 1999 and December 2005 prices.

The problem of high and volatile crude oil prices flowing through to petrol and diesel prices has been exacerbated by:

- a shortage of refining capacity arising from strong growth of demand for products and under-investment in additional capacity, partly linked to environmental constraints in developed economies, particularly the United States; and
- a particular shortage of capacity to refine heavy, high sulphur crude oil, which is more readily available, reflecting greater environmental issues and higher costs associated with refining of such crude and tightening fuel quality standards.

These factors resulted in substantial increases in refinery margins, weakened the ability of crude oil and products to cope with shocks and temporary imbalances, added to volatility in product prices, and substantially increased price differentials between prices for light, low sulphur crude oil and heavy, high sulphur crude oil.

The economic impact in Australia and internationally of the current high level and volatility of crude oil prices has been much less than indicated by experience of the first and second "oil crises" in the 1970s and early 1980s. The economic blow has been softened by:

- better economic management, particularly more flexible exchange rates (see above), greater reliance on market forces, and more credible monetary policies;
- strongly growing global aggregate demand for goods and services; and
- a substantial decline in the crude oil intensity of economies (tonnes of oil consumed per million US dollars of GDP), since the early 1970s, particularly in the case of developed economies.

Lower crude oil intensity reduces adverse effects of high oil, petrol and diesel prices on inflation of the general price level and on the level of economic activity. The crude oil intensity of OECD economies has dropped by about 50 per cent over the past 30 years. The Australian economy is about 55 per cent less oil intensive than in 1980. The oil intensity of non-OECD countries has fallen by about 32 per cent since the early 1980s. Declining oil intensity of economies is explained by the increasing contribution service industries to the level of economic activity and GDP as economies develop, as well as various supply and demand responses (see below) arising from high oil prices in the late 1970s and early 1980s generated by the first and second "oil crises".

Current high oil prices and their effects should be ameliorated by the incentives such prices provide to:

- drive less and more economically;
- switch to more fuel efficient vehicles;
- build more fuel efficient vehicles;
- investigate improvements in engine technologies;
- investigate better petroleum recovery technologies;
- invest to increase production from known resources;
- undertake more petroleum exploration;
- investigate better technologies for production of alternative fuels;
- invest in production of alternative fuels;
- invest in new refinery capacity; and
- substitute other energy sources for oil in industrial activities.

Demand and supply-related outcomes induced by these incentives will be subject to varying lags. Some outcomes, particularly supply responses, may not be significant for several years.

In the short-term, crude oil, petrol and diesel prices are expected to remain relatively high and be subject to a high degree of volatility. In the medium-term, they are expected to trend downwards in real terms, as a result of lagged demand and supply responses to high prices in the short term.

These views on the future of crude oil and product prices are similar to recent prognostications by the International Monetary Fund and the Australian Bureau of Agricultural and Resource Economics.[1]

A contrary view has been put forward by "peak oil" theorists who argue that world oil production will soon peak and commence an inexorable decline, thrusting an unprepared world into social and economic turmoil. Critics of this view argue that "peak oil" theorists have neglected various important considerations, including the powerful effects that price incentives and technological advances have had on quantities of crude oil supplied and demanded in the past. The critics have offered the more convincing arguments. The debate has been reviewed in detail by a recent report by Bureau of Transport and Regional Economics.[2]

Although the Australian and Queensland economies have coped well with the surge in prices of crude oil and refined products over the past few years, many individuals and enterprises have suffered, particularly those who lack economic and political power and therefore, have not been able to pass on cost increases or otherwise gain compensation for rising petroleum product prices. Poorer sections of the community are more likely to be adversely affected by the impact of higher petroleum product prices because of their lack of economic and political power. Not only are they less able to cope with reductions in their remaining disposal incomes, but also are less able to gain from substitution activities, such as switching to more modern, fuel-efficient vehicles, good public transport services, residences requiring less driving, etc.

Excise/Customs Duty Reductions to Ameliorate Effects of High Fuel Prices [tor (f)]

Some commentators have argued that the Commonwealth Government should provide excise/customs duty reductions to ameliorate effects of high fuel prices. Such proposals are seriously flawed.

Cutting excise/customs duty to offset part of the increase in petrol diesel prices experienced over the past few years would undermine desirable incentives to do undertake consumption-reducing and production-increasing activities.

Consumers would be less likely to:

- drive and maintain existing vehicles so as to economise on fuel-use;
- re-consider peak-period travel patterns;
- switch to smaller and more fuel-efficient vehicles; and
- reconsider locations of residences, employment and activities.

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[1] International Monetary Fund, *Oil Market Developments and Issues*, IMF Policy Development and Review Department, Washington DC, 1 March 2005; McDonald, Daniel, Chester, Courtney, Gunasekera, Buetre, Benjamin, Penm, Jaimmie, and Fairhead, Lindsay, *Impact of Oil Prices on Trade in the APEC Region*, Australian Bureau of Agricultural and Resource Economics Research Report for the Asia-Pacific Economic Cooperation Working Group, October 2005.

[2] Martin, Lyn and Potterton, Phil, *Is the World Running Out of Oil? A Review of the Debate*, Bureau of Transport and Regional Economics Working Paper 61, report for Commonwealth Department of Regional Services, February 2005.

Motor vehicle manufacturers and importers would be less likely to:

- offer vehicles that are more fuel-efficient;
- invest in more fuel-efficient engine technologies and fabrication components that reduce vehicle weight without sacrificing strength.

Tinkering with the excise/customs duty regime to ameliorate high fuel prices would involve various practical and political difficulties. The Government would need to decide how to deal with fluctuating fuel prices, how often to adjust the duty, and how to deal with the political odium of raising the rate of duty when fuel prices fall in the short-term or as a part of a medium-term downward trend in petroleum product prices.

It would be much more sensible to cut income tax, improve the welfare system and better integrate the two, than to fiddle with the excise/customs duty regime. Such changes are already being scrutinised by government and opposition politicians for economic and political reasons. Income and welfare changes would help offset the undesirable income effect of high fuel prices without interfering with desirable substitution and conservation incentives.

Rather than tinker with the fuel excise/customs duty regime for short term political reasons, the Commonwealth should undertake comprehensive reform of fuel taxation and road pricing to tackle economic inefficiencies associated with the fuel tax regime (eg, taxation of intermediate inputs), traffic congestion, road-wear-and-tear, and environmental and health effects of emissions.

Queensland Fuel Subsidy Scheme [tor (g)]

Introduction

The Queensland Fuel Subsidy Scheme was established in 1997 to offset the effective application in Queensland of a Commonwealth administered, state tax on petrol and diesel fuel. At present, the scheme reduces taxation of petrol and diesel fuel by 9.189 cents per litre, comprising a direct tax offset of 8.354 cents per litre and a GST saving of 0.835 cents per litre.

Various local government entities, special interest groups and commentators have advocated abolition of the scheme and redeployment of savings of about $500 million per year to deal with deficiencies in facilities and services of particular interest to them. Sensibly, the Queensland Government has resisted these proposals.

Background

All Australian states and territories, except Queensland, introduced “business franchise fees” in respect of petrol and diesel fuel during the period 1982 to 1988. These fees grew to become important sources of revenue for state and territory governments other than Queensland.

In New South Wales, Victoria and Western Australia, the fees did not apply to diesel purchased for off-road use. Western Australia provided subsidies similar to petrol franchise fees for petrol used off-road for agricultural purposes.

In August 1997, a High Court decision on tobacco business franchise fees levied by the New South Wales Government cast considerable doubt on the constitutional validity of state and territory fuel, alcohol and tobacco business franchise fees. Subsequently, the Commonwealth Government agreed to collect these taxes on behalf of states and territories.

In the case of petrol and diesel, the Commonwealth Government imposed a surcharge of 8.1 cents per litre on the rate of customs and excise duty and returned surcharge revenue to states and territories. The surcharge, along with the basic rate, was indexed in accordance with movements in the Consumer Price Index. A uniform rate of surcharge was applied to avoid Constitutional problems arising from differential taxes between states and territories.

To avoid effective imposition of a state fuel tax, the Queensland Government established the Queensland Fuel Subsidy Scheme (QFSS) under the *Fuel Subsidy Act 1997* to return the excise/customs duty surcharge to Queensland fuel users. Under QFSS, fuel sellers, such as refiners and wholesalers, were paid the "subsidy" at the rate of the surcharge, and required to reduce the price of fuel by that amount when selling to licensed entities (retailers, bulk end-users, and off-road diesel users).

Immediately prior to the application of GST on 1 July 2000, the Commonwealth was collecting fuel excise and customs duty of 44.137 cents per litre, including the 8.354 cents per litre surcharge.

To allow for the price-effect of the GST and the decision to pay Commonwealth GST revenue to states and territories as from July 2000, the federal government decided to:

- reduce excise/customs duty by 6.656 cents per litre to 37.841 cents per litre;
- assume responsibility for payment of state rebates or subsidies to off-road diesel users; and
- cease payment of the fuel excise/customs duty surcharge to states and territories.

Initially, the Queensland Government indicated that QFSS would remain in place after June 2000, except for the subsidy for off-road diesel eligible for rebate under the Commonwealth Diesel Fuel Rebate Scheme. However, in May 2000, allegedly in response to suggestions that QFSS was not being fully passed on to consumers, the Queensland Government proposed that QFSS be replaced by a registration fee reduction of $150 per vehicle.

Following severe public criticism, the Queensland Government decided to retain QFSS, but with administrative changes made late in 2000. Thereafter, the "subsidy" of 8.354 cents per litre (the final rate of surcharge as at 30 June 2000) was paid directly to licensed retailers and bulk end-users, rather than to refineries and wholesalers.

In recent years, various commentators, local government entities and special interest groups have advocated abolition of QFSS and redeployment of savings of about $500 million per year to fund facilities and services that they argued the government had underprovided, including roads, public transport, electricity distribution facilities, and disability services. Many of these proposals involved reallocation of QFSS funds to

public transport and/or road infrastructure, particularly in south-east Queensland, where traffic congestion has become an increasingly severe problem.

An interesting variant of this scheme was conceived by economics Professor John Quiggin. He proposed phasing out the "subsidy" over 4-5 years, rather than abolishing it immediately, and reallocation of the savings to servicing of borrowings to fund additional road and public transport infrastructure.

Despite periodic criticisms of the scheme by various entities seeking redeployment of QFSS funds to causes they are championing, the Queensland Government has persisted with the revised QFSS. Queensland opposition parties also support retention of the scheme.

Analysis

Advocates of abolition of QFSS have argued that the subsidy has not been fully passed on to road-users and/or would be more usefully deployed to correct under-provision of infrastructure and other services.

RACQ compares fuel prices in various locations throughout Queensland with comparable locations in New South Wales (NSW) on a monthly basis. A summary of the comparison for November 2005 has been attached.

The comparisons allow for a NSW scheme that matches the Queensland subsidy close to NSW-Queensland border and reduces progressively as distance into NSW from the border increases. RACQ found that, in general, fuel prices in New South Wales prices exceeded Queensland prices by amounts averaging close to or more than the amount of the differential subsidy in Queensland plus GST. This indicates that Queensland road-users generally are receiving the full benefit of QFSS. But, this does not apply in all locations at all times.

Abolition of the QFSS and the resulting GST effect would add about 9.2 cents per litre to the price of automotive fuel in Queensland, in the context of the typical insensitivity of demand to price changes in the short-term. Also, Queenslanders would be hit by higher prices for other goods and services as cost increases arising from higher effective taxes on fuel are passed on by business enterprises.

Participants in export and import-competing industries and the poorer sections of the community would suffer most, because they are least able to recoup higher costs from other parties.

Export and import-competing industries face international prices for their output. Typically, they have little or no influence over these prices and therefore, are unable to shift forward cost increases arising from higher fuel prices. Therefore, providers of capital and suppliers of goods and services to export and import-competing industries would bear the full burden of cost increases arising from abolition of QFSS.

Low income groups will be severely disadvantaged, not only because they lack market and political power, greatly restricting their ability to recover cost increases, but also because they tend to have longer drives to work and amenities, own older, less fuel-efficient vehicles, and have inferior access to subsidised public transport.

Proponents of abolition of QFSS and redeployment of savings to correct under-provision of infrastructure and services have implicitly assumed that an effective increase in fuel excise and customs duty is the most economically efficient and politically astute way of funding desired improvements. No convincing supporting analysis has been presented by any of the proponents of this policy change.

The excise and customs duty regime discriminates heavily against petrol and diesel fuel. It does not exempt fuel used in business activities, with the result that its impact cascades through the economy. Its purpose is to collect revenue. The excise and customs duty regime was not designed to avoid or correct inefficiencies in resource-use in the economy. The regime is a very poor substitute for charges designed to correct particular external social costs of road-use, like traffic congestion, vehicle emissions, accident costs not covered by insurance, and road damage. Consequently, the fuel excise and customs duty regime is a source of significant distortions and resulting nett economic damage in the economy.

QFSS partly offsets the nett economic damage caused by fuel excise and customs duty. Abolition of the subsidy would reverse this effect.

As economists have explained, in an economy subject to many distortions, reform should be comprehensive not piecemeal to avoid further economic damage. Changes to the fuel "subsidy" should be considered and made only on the basis of thorough analysis and in conjunction with comprehensive reform of fuel and other taxes, road-user charges, other government charges, and the wide range of other subsidies paid by governments.

Such reform would include replacement of excise and customs duty by taxes or charges specifically designed to correct external social costs of road-use. They would include congestion charges, road wear and tear charges, and emissions levies.

In contrast, the focus on QFSS as a source of funds for correction of infrastructure deficiencies appears to have been based on the public prominence of QFSS and simplistic, unrealistic assumptions regarding the economic, distributional and political effects of its demise.

Proposals to abolish the subsidy and reallocate the annual proceeds of $500 million directly to construction of road and public transport infrastructure or other facilities have been politically unacceptable. The problem is that there would be a large and immediate increase in fuel prices throughout the state, while the effect of additional government infrastructure expenditures would:

- not be prominent anywhere immediately because of planning and construction lags;
- not be noticed in most of the state if the expenditure is applied to a small number of large projects at any one time; and
- appear meagre if the funds are spread thinly across the state annually.

John Quiggin's proposal to gradually phase-out QFSS and redeploy the savings to service borrowings to fund road and public transport infrastructure would be politically more palatable. This is because petrol price increases would take place in

small steps, while the short- and medium-term impact on infrastructure expenditure would be substantial, as borrowing allows expenditure to be brought forward.

While it makes sense to borrow to bring forward correction of infrastructure deficiencies and to service the debt with the proceeds of tax increases or reductions in subsidies, the revenue source should determined following a thorough review of the economic efficiency and equity effects of the alternatives and in the context of comprehensive reform of the tax/transfer system, not on the basis of an *ad hoc* change to a single tax or subsidy instrument unsupported by any competent economic analysis.

Fuel Sales Grants Scheme [tor (f) and (g)]

In June 2004, the Commonwealth Government announced that the Fuel Sales Grants Scheme (FSGS) would be abolished as from 1 July 2006 to provide savings of $270 million per year nationally to help fund grants for roads in "outer metropolitan, rural and remote areas" under the Commonwealth's new *AusLink* land transport policy.

The grants scheme was introduced at the same time as the GST to help alleviate the extra price impact of GST on motorists in country areas, where higher transport costs and higher margins linked to lower sales volumes and competition add to fuel prices. The grants range from one to three cents per litre in regional and remote areas outside the Brisbane metropolitan and Gold Coast areas.

Critics of the FSGS had argued that the grants to retailers had not been passed on to consumers and abolishing the scheme would have no effect on prices. The argument is spurious.

To the extent that fuel sales grants had not been passed on to motorists and instead had been incorporated into retailers' or oil companies' margins, facilitated by market power and the low short term elasticity demand to price changes, the same market characteristics would facilitate passing on the loss of grants to consumers. If fuel sales grants had been passed on to consumers through lower fuel prices, fuel suppliers could still be expected to seek to protect their margins by recovering the loss of grants through higher fuel prices. Therefore, motorists will pay more for fuel after abolition of the FSGS, whether or not the grants were passed-on.

Abolition of the FSGS will add to the effect of current high oil prices in regional and remote parts of Queensland.

The RACQ is fully supports the provision of more *AusLink* funds to roads to supplement the paltry 15 per cent of excise/customs duty allocated to roads, but funding $270 million of extra road allocations by abolishing FSGS is equivalent to a fuel excise/customs duty increase.

Practical Ways for Consumers to Reduce Automotive Fuel Bills [tor (c)]

Practical Measures for Consumers

A wide range of information on practical measures motorists can apply to reduce fuel consumption is available in various media.

RACQ has produced a free brochure, *Facts On Improving Fuel Economy*. **A copy of the brochure is attached for reference.** It is available from RACQ offices and the organisation's website at:
http://www.racq.com.au/images/documents/Improving_fuel_economy.pdf

Matters covered in the RACQ brochure include:

- the considerable influence of driving styles and techniques on fuel use;
- the importance of trip planning and the influence of traffic;
- the importance of vehicle maintenance including vehicle tuning, servicing and tyre pressures;
- fuel consumption penalties for carrying excessive weight or increased aerodynamic drag;
- converting to alternative fuels such as LPG;
- rethinking of transport options/ use of alternative transport;
- using more fuel efficient cars in multi-car households;
- purchasing a more fuel-efficient vehicle; and
- fuel saving devices.

The *Green Vehicle Guide* produced by the Commonwealth Government also presents useful tips on saving fuel and reducing costs that closely reflect the content of RACQ's brochure. The website address is:
http://www.greenvehicleguide.gov.au/gvgpublicui/StaticContent/HomeHTMLPage.aspx

Other websites, such as those for the ACCC and MotorMouth, offer information on petrol pricing including an analysis of fuel price cycles throughout the week and where to find the cheapest fuel on a daily basis. Website addresses are:
http://www.accc.gov.au/content/index.phtml/itemId/11938/fromItemId/655475
http://motormouth.com.au/myresources/fuelsavingtips.aspx

Adequacy of Existing Information on Various Makes/Models of Motor Vehicle

Information on relative fuel efficiencies of new vehicles is available to consumers from a multitude of sources including newspaper motoring pages, car magazines, the internet (eg, the *Green Vehicle Guide*), car company material, and mandatory vehicle fuel consumption labels.

Presentation of fuel consumption information in car reviews and the like, irrespective of media format or source, lacks consistency of format. Where fuel consumption figures are quoted, they may be 'on test' results or Australian Design Rules (ADR) results derived by manufacturers. In some cases, both numbers may be offered.

'On test' numbers may be shown as, 'best' and 'worst', 'test average' or a combination thereof. While these numbers might be considered to be closer to 'real world' figures than ADR/standardised repeatable test numbers, the reality is that actual test conditions, and most critically, driver related factors, can cause significant variations and a lack of reliability/repeatability of results.

Figures from RACQ's own road-testing program of new cars show, in most instances, a significant variation from *Green Vehicle Guide* figures. In other cases the road test and guide numbers are reasonably close. However, no clear trend is apparent.

Bearing in mind the ADR certification process, numbers supplied by car manufacturers would usually be ADR consumption figures.

Figures derived through repeatable standardised tests such as AS2877 or as used for mandatory ADR fuel consumption labels, offer the best/most reliable basis for comparing fuel efficiency of vehicles. In the case of fuel consumption labels on vehicles, ADR81/01 also mandates provision of a comparative carbon dioxide emissions value. ADR 81/01 applies to all new vehicles over 3.5 tonnes from 1 January 2004.

The Commonwealth Government's *Green Vehicle Guide* provides fuel consumption figures, greenhouse rating, air pollution rating and an overall star rating (based on the last two numbers). The type of fuel required including recommended octane number is also shown. Clearly, directly assessing emissions ratings are beyond the capabilities of normal car road-testing and car reviews.

Environmental considerations are becoming important to more consumers and the community as a whole, although they remain a secondary issue or a matter of no interest to many. Relative emissions information provided by the *Green Vehicle Guide* and fuel consumption labels are important for raising motorists' awareness of the polluting effects of their motor vehicles and "social responsibility" implications of their choices.

Of course, fuel consumption of vehicles, and by inference, the likely cost of fuelling vehicles are of almost universal interest to motorists, especially in the context of rising fuel costs.

The *Green Vehicle Guide* site is informative in respect of fuel consumption, offering a vehicle search function, ability to compare selected vehicles and a range of advice on related topics, including fuel saving tips. It is also possible to enter certain variables into the site's calculator and compare the annual cost of running two selected vehicles based on the site's consumption figures.

The site also allows checking of fuel consumption for earlier model vehicles from 1986 to 2003. Figures quoted for these models are tested against AS 2877. This is likely to be of use to those selecting a used car and taking relative fuel efficiency into consideration. However caution needs to be exercised with AS 2877 numbers as they are particularly unreliable in 'real' terms without application of Society of Automotive Engineers (SAE) recommended correction factors. Their value is as a comparator only.

Adjustment factors of 15 per cent and 34 per cent were recommended by SAE for city and highway fuel consumption figures respectively for fuel figures quoted when tested to AS 2877. Fuel consumption figures modified by application of these correction factors appear to be much closer to 'achievable' economy figures than the 'raw' AS number.

Both the *Green Vehicle Guide* and ADR labels indicate that the consumption figures published or shown on the label may not be achieved in the 'real world' due to factors including traffic / operating conditions, vehicle condition and how the vehicle is driven. Despite this many consumers still expect, unrealistically, to achieve fuel consumption figures equivalent to those indicated. Clearly, this has the potential to lead to customer dissatisfaction and dealers being requested or attempting to explain or adjust published figures.

While the information provided by the *Green Vehicle Guide* and ADR labels facilitates consumer choices on the basis of relative fuel consumption figures, and therefore, relative fuel bills, their credibility and usefulness is undermined by significant departures from real world fuel consumption, and therefore, fuel costs. This loss of standing derives from the expectation of many consumers that the fuel figures provided will be a reasonably close approximation of the fuel consumption they will be able achieve during their normal driving patterns.

Therefore, it is appropriate to consider how this problem might be resolved. Possibilities include:

- reviewing the drive-cycle test used for consumption labels, etc to more closely represent Australian vehicle usage patterns (An Australian drive cycle program has been developed. See comment below.);
- providing correction factors that can be applied to deduce realistic city and highway numbers; and
- providing an expected consumption range.

It is accepted that there is always the potential for actual fuel consumption figures to deviate from theoretical figures, regardless of the method of derivation. However, moves to improve the correlation between the drive-cycle number and average real world numbers would assist consumers to more accurately judge fuel costs, as well as make choices on the basis of comparative fuel consumption.

An Australian drive-cycle has been developed as part of the preliminary phase of the National In-service Emissions II study (NISE II - refer Dept of Environment and Heritage). The Australian Composite Urban Emissions Drive Cycle (CUEDC) for light duty petrol engines, as its name suggests, is primarily concerned with generating data relative to vehicle emissions. However there is a sound argument for it forming the basis for more accurate fuel consumption information for consumers via the ADR mandated fuel consumption label and *Green Vehicle Guide* site.

It will be noted that the cycle is for light-duty petrol engines. However, these vehicles still form the major component of the light vehicle market and will continue to do so for the foreseeable future. Developing a CUEDC type test for vehicles operating on diesel may be also required for label harmonisation if CUEDC were adopted for label figures on petrol vehicles.

However, resistance by vehicle manufacturers may be a significant impediment to these proposals. Current ADR consumption tests required for vehicle certification are harmonised with European Regulations. This is part of a wider approach to adoption of European regulations within ADR's. A new Australian-specific test regime in the form of an Australian drive cycle test for models destined for our market could impose significant cost on manufacturers.

The possibility of calculating correction factors to apply to ADR test results to replicate Australian drive cycle test figures may be worthy of investigation.

Vehicle labels are required to specify the vehicle fuel-type, eg petrol, diesel, LPG etc, but for petrol-powered vehicles, there is no current requirement for the label to indicate the fuel octane rating recommended by the manufacturer. This is a serious omission.

Obviously, when comparing costs of operation of vehicles, the type of fuel (ULP or PULP or premium PULP), and relevant price per litre are just as important as fuel consumption. The fuel economy advantage of a particular vehicle could be eroded by the need for it to use a more expensive fuel. Given the current price differential, the ongoing additional cost of using PULP could be significant. The recommended fuel should therefore be shown on the label.

In addition, the current ADR requirement is that tests be performed using PULP in all petrol vehicles, irrespective of the minimum octane rating of the fuel recommended by the manufacturer. Where ULP is considered by the manufacturer to be a suitable fuel and the vehicle would normally be operated on ULP, rather than PULP, the potential exists, at least in theory, for the test to understate fuel consumption. Any difference is likely to be small, but it would be appropriate to consider inclusion of a suitable notation on the label.

Moderating Fuel Price Increases Via Enhanced Domestic Competition [tor (d)]

The liquid fuel supply industry is characterised by a high degree of concentration at the domestic refinery/products importation (wholesale) level. The degree of concentration has increased as fuel quality standards have been tightened, making it tougher for independents to source products from overseas. For example, tightening fuel quality standards induced Woolworths to negotiate a supply agreement with Caltex, rather than continuing to import from overseas via the trading company, Trafigura.

The high degree of concentration at the domestic refinery/products importation level implies that the majors, Caltex, Shell, BP and Mobil, possess substantial market power.

Intuitively, one would expect the petrol price cycle in south-east Queensland and metropolitan areas in other parts of Australia to collapse without that market power facilitating near-simultaneous provision and withdrawal of "price support" to

company owned franchised service stations. Similarly, without that market power one would not expect a persistent recurrence of the marked increases in margins that materialise at the top end of prolonged upswings and downswings in crude oil prices, capitalising on consumer expectations of high and rising petrol and diesel prices.

Also, without such market power, one would not expect the remarkable uniformity of differentials between ULP and PULP prices (currently 5-6 cents) and PULP and Premium PULP prices (currently 4 cents) across brands, and the remarkable occurrence of near simultaneous increases in those differentials. For example, as volumes of LRP (PULP with an additive) declined, the differential between the two rose from two to four cents per litre. At that time, the differential between ULP and premium PULP (98 RON) was uniform across brands at 7 cents per litre. As PULP pumps replaced LRP pumps en masse in mid-2005, the differential between ULP and PULP (95 RON) prices increased to 6 cents per litre from 4 cents per litre, and the differential between ULP and premium PULP increased to 10 cents per litre. Strongly rising sales volumes for PULP should have resulted in lower margins and prices for this fuel, not the reverse.

After a couple of years of narrowing of price differentials between south-east Queensland and regional markets, differentials widened dramatically from mid-September in the wake of a huge world-wide petrol price spike linked to disruption of Gulf of Mexico refinery products supply by hurricanes. The oil majors blame this widening of regional-metropolitan differentials on lack of competition and opportunistic retail pricing in regional areas. However, this is <u>not</u> convincing, because the phenomenon has been obvious even in major regional centres that previously exhibited a reasonable degree of retail competition. The presence of market power and lack of competition at the refinery/product importation level provide an intuitively more appealing explanation.

Unfortunately, evidence such as that above is circumstantial. The issues are difficult to analyse and causes difficult to identify with confidence. A major study would be required to unravel the issues.

The powers of the ACCC to get to the bottom of the problem and to rectify limited wholesale competition and its adverse price effects appear to be very limited under existing provisions of the Trade Practices Act.

The ACCC endorsement of Woolworths' and Coles' shopper-docket fuel discount schemes as pro-competitive in the fuel market seems to lack analytical depth.

There is little doubt that these schemes have sharpened competition in retail fuel markets in the short term. However, competition has not been enhanced at the wholesale level. Indeed, it may have been reduced as a result of Woolworths entering into an agreement to source products from Caltex, rather than importing them from overseas.

It is not appropriate to consider short term fuel prices in isolation from their impact on grocery prices. Because all of the major retail grocery chains have shopper-docket fuel discount schemes, their ability to subsidise fuel prices through high grocery sales volumes appears to be very limited. Therefore, they can increase or maintain profitability only by increasing grocery margins. Given the high degree of

concentration in the retail grocery market, one would expect that lower fuel prices associated with shopper dockets would inevitably be followed by higher grocery prices.

In the medium-term, those who drive a lot and don't eat much could be better-off, while those who eat a lot, but drive little could be worse-off.

In the longer term, the cross subsidisation of fuel prices at Woolworths/Caltex and Coles/Shell retail fuel outlets via higher grocery prices, will make it increasingly difficult for other retail outlets to compete without support from their suppliers, and for independent fuel supply companies (those not owned or linked to the major oil companies) to avoid being squeezed out of the market. It may even become tougher for the major oil companies without a shopper-docket link to a major super market chain to maintain market share. Ultimately, the result may be greater concentration at both the retail and wholesale levels in the fuel supply industry. Both fuel prices and grocery prices could be higher than they would have been without the shopper-docket schemes.

The RACQ notes that the Federal Government is currently considering proposals to repeal the *Petroleum Retail Marketing Sites Act* and the *Petroleum Retail Marketing Franchise Act*, subject to the introduction of a new "Oilcode."

The intention of these proposals is to speed up the process of rationalisation of service station numbers in country areas and facilitate the marketing of petrol to reduce excessive overheads, thereby closing the gap between country and city petrol prices over the long term.

Because of higher priorities, the RACQ has yet to subject these proposals to detailed scrutiny. Further RACQ research and investigation is anticipated.

Competitiveness of Alternative Fuels [tor (a)]

Protection of Bio-Fuels Industries

The Coalition parties' *Biofuels for Cleaner Transport* policy formulated for the 2001 federal election specified an Australian production target of 350 million litres of biofuels per year by 2010. The Commonwealth Government has referred to this target repeatedly, but has not formally adopted it as government policy.

At that time, fuel-ethanol and biodiesel (biofuels) had been exempt from excise and customs duty on a long-term basis. Subsequent policy measures ensured that fuel-ethanol and biodiesel production were the most protected industries in Australia.

From 18 September 2002 and 18 September 2003, the Commonwealth Government applied excise and customs duty at a rate of 38.143 cents per litre (the rate applying to petrol and conventional diesel) and refunded excise on Australian production of fuel-ethanol and bio-diesel, respectively.

This protection is to remain in place until 30 June 2011, after which excise and customs duty will be applied to fuel-ethanol and bio-diesel at rates of 2.5 and 3.8 cents per litre, respectively, and increased by 2.5 and 3.8 cents a litre, respectively, on 1 July each year until 1 July 2015. From that date, fuel-ethanol will attract duty of 12.5 cents per litre, compared to a rate of 26 cents per litre if based on the rate for petrol with an adjustment for ethanol's lower energy content. Biodiesel's excise/customs duty rate of 19.1 cents per litre as from 1 July 2015 will be about 50 per cent of the rate for conventional diesel, compared to an energy content of 88-99 per cent of that of conventional diesel.

To supplement this protection, the Commonwealth announced on 25 July 2003, an allocation of $37 million for a capital subsidy of 16 cents per litre of new or expanded biofuels capacity meeting various conditions, including a maximum of $10 million per plant.

The ethanol lobby and state and federal politicians particularly sympathetic to their cause also want compulsory blending of ethanol with petrol. They have claimed protection of fuel-ethanol provides substantial benefits to farmers, the economy and the environment.

The Queensland Government has argued that the Commonwealth Government should mandate ethanol-use. The Queensland National Party has argued that the Queensland Government should mandate its use in Queensland.

Proponents of existing or more generous biofuels protection regimes, including mandatory blends, argue that such protective arrangements provide substantial nett economic and environmental benefits. These claims have strongly contradicted by numerous economists and scientists, two major reports to the Commonwealth Government during the past two years, and other reports by Commonwealth Government agencies.

In the United States, respected policy research institutes have been scathing in their criticism of subsidies for ethanol and mandating of its use. They argue that social costs greatly exceed social benefits, and assert that such policy is based on buying votes in grain provinces, rather than on environmental or economic principles.

Viability of Biofuels Production

The recent *Report of the Biofuels Taskforce to the Prime Minister*[3] explained that, throughout the world, biofuels production has required government assistance to be viable. It noted that governments typically cite a range of reasons for subsidising ethanol production, but support for agriculture was or become the real primary driver of government assistance for biofuel production in most countries.

The Task Force pointed out that Australian biofuels production will generally remain uncompetitive with conventional fuels without continuing government assistance in the long term. For ethanol producers to be competitive without assistance, oil prices

[3] Australian Government Biofuels Task Force, *Report of the Biofuels Taskforce to the Prime Minister*, Canberra, August 2005.

would need to remain above US$47 per barrel with an exchange rate under US$0.65 = $A1.00 or above US$54 with an exchange rate below US$0.75 = $A1.00, which is close to the current exchange rate. For biodiesel production to be viable without assistance, oil prices would need to remain above US$62 at an exchange rate below US$0.65.

The Australian Bureau of Agricultural and Resource Economics (ABARE) and the Task Force considered that long term price and exchange rate scenarios obviating government assistance for Australian biofuels production were unlikely.

Similar conclusions about the viability of ethanol and biodiesel were reached by ABARE, CSIRO and Bureau of Transport and Regional Economics (BTRE) in an earlier report for the Commonwealth Government regarding its 350 million litres per year biofuels target.[4]

The Biofuels Taskforce pointed out that ethanol producers would probably struggle from 2011 when scheduled changes in subsidy/protection arrangements allowed import competition from Brazilian and United States producers with costs only 60 to 75 per cent of those in Australian plants. The prospect of a significant decline in real oil prices occurring or being underway by that time, would exacerbate the problem.

The Biofuels Task Force said that there is little demand for ethanol/petrol blends. Lack of consumer confidence remains a fundamental obstacle to E10 sales following reports of sales of unlabelled, 20-30 per cent ethanol blends around Sydney in 2002-03 and widely publicised allegations of vehicle damage.

Biodiesel does not have the same consumer confidence problem, but the Task Force noted confidence could be fragile.

Engine Operability

The Biofuels Task Force observed that there has been limited testing of the suitability of biodiesel for use in diesel engines.

The Biofuels Taskforce claimed that almost all post-1986 vehicles could operate satisfactorily on E10. It claimed vehicle testing by researchers and E10 trials by fuel companies supported this. But, this conflicted with recommendations from several overseas manufacturers included in the list compiled by the Federal Chamber of Automotive Industries (FCAI).

The Task Force advised that E10 is “not optimal” for vehicles with carburettors or mechanical fuel injection, mainly pre-1986 models.

The Task Force argued that because a higher percentage of cars can use E5 than E10, labelling should be required only if ethanol exceeds 5 per cent, rather than one per cent at present. The Commonwealth government subsequently signalled its intention to adopt this position.

[4] CSIRO, ABARE and BTRE, *Appropriateness of a 350 Million Litre Biofuels Target*, report to the Australian Government Department of Industry Tourism and Resources, December 2003.

The Task Force did not offer any convincing arguments to refute FCAI's argument that the increasing number of vehicles optimised to run on 95 RON petrol and a maximum of 5 percent ethanol (E5) may suffer driveability problems and have increased levels of exhaust and evaporative emissions if fuelled with E10. The main basis of the Task Force's position, other than assertions including claims that manufacturers were over-cautious, appeared to be a 1998 study by APACE Research which tested only Australian built vehicles.

The Task Force's suggestion regarding labelling could be justified only if there were no consumer confidence issues with ethanol blends, there was no fuel consumption penalty, and Reid Vapour Pressure and hence evaporative emissions were lower. But, none of these conditions apply.

Fuel Consumption

The Biofuels Taskforce said ethanol's 32 per cent lower energy density (MJ/kg) than petrol implies an increase in fuel consumption with E10 of 3.6 per cent in volumetric terms or 4.3 per cent in mass terms for post-1986 vehicles with electronic fuel injection systems. The Task Force referred to recent testing by Orbital engine company of such vehicles, the results of which indicated fuel consumption increases (in terms of litres /km) of 2.9 per cent and 2.7 per cent for city and highway cycles, respectively. The Task Force mentioned tests by APACE Research in 1998, which indicated an increase in fuel consumption of 2.6 per cent with E10.

The Task Force did not refer to any overseas studies, some of which indicate up to 5 per cent higher fuel consumption with E10 than with straight petrol. Recent written advice from the Technical Manager of Hyundai Motor Company Australia indicated that fuel consumption with E10 could be approximately 3-8 per cent higher than if petrol were used.

The Biofuels Task force commented that the increase in fuel consumption it referred to should translate into E10 pump prices that are 2-3 per cent lower. The results of a wider range of credible studies than cited by the Task Force would suggest that E10 prices should be 2.5 per cent to 5 per cent lower than petrol prices. Hyundai's advice suggests that E10 price discounts should be bigger still.

However, E10 pump prices are typically the same as ULP prices, although some independents have offered discounts for E10. The Task Force suggested a pricing strategy compensating for higher fuel consumption with E10 would assist in encouraging uptake. This suggestion is similar to that put to ethanol lobbyists by RACQ.

Economic Issues

The Biofuels Taskforce concluded, with the aid of economic modelling by ABARE, that the cost to GDP of meeting the biofuels target of 350 million litres per year was expected to be about $90 million per year (2005 prices) in 2010 and $72 million per year (2005 prices) post-2015.

The economic cost (GDP loss) of each direct biofuel related job in 2010 is estimated to be about $417,000. The cost in government expenditure is estimated to be about $545,000.

These economic costs were higher than estimated by the earlier report by CSIRO, ABARE and BTRE.

The Task Force demolished balance of payments arguments for subsidising biofuels.

The federal government's biofuels target is only about ten per cent of the production required if the government mandated 10/90 per cent ethanol/petrol blends. The economic costs would be much more than 10 times those involved in meeting the 350 million litre target (much more than $900 million) because of rising marginal social costs of production as the 10 per cent ethanol figure is approached.

The economic costs of propping up Australian biofuels production are very high.

Energy Security/Self Sufficiency Issues

The Task Force demolished energy security/self sufficiency arguments for subsidising biofuels.

Environmental and Health Issues

The Biofuels Task Force explained that life cycle analyses of emissions from E10 production and use indicate that compared to straight petrol:

- carbon monoxide emissions fall significantly;
- emissions of oxides of nitrogen (NOx) increase significantly;
- there is little change in emissions of volatile organic compounds;
- carbon dioxide emissions fall slightly;
- emissions of some air toxics fall while others rise.

So, there is a small reduction in emissions of greenhouse gases, a significant increase NOx emissions, which could increase smog formation with attendant respiratory health issues, and uncertainty regarding the overall effect on air toxic emissions. None of this is new. It is consistent with the findings of the report by CSIRO, ABARE and BTRE in 2003. Also, it is broadly consistent with results of research in the United States.

Although particulate matter (PM) is not a regulated pollutant for petrol vehicles in Australia, it has become a matter of concern because of recent studies indicating adverse health effects from fine PM.

The Task Force's discussion of PM emissions differs from that in the CSIRO/ABARE/BTRE report. The Biofuels Task Force considered that the assumption of negligible impact of E10 on PM tailpipe emissions in the 2003 report needed to be revisited because of results of three small studies in USA and UK, indicating tailpipe PM emissions could fall significantly with E10. However, the Task Force pointed out that two of the three studies were conducted at near zero temperatures and three small studies do not provide a basis for a robust result. Also,

the Task Force report explained that agricultural and processing activities to produce ethanol significantly increase PM emissions on a life-cycle basis, unless energy for processing is provided by co-generation.

The Biofuels Task Force proposed that comprehensive experimental work be undertaken on PM emissions under Australian conditions.

Secondary particles make up about 30 per cent total PM in Australian cities. Research in California indicates secondary particles may rise with E10 use because E10 yields higher emissions of NOx. Once again the Biofuels Task Force concluded that research is required in Australian conditions.

The Biofuels Task Force explained that, on a life-cycle basis, pure biodiesel (B100) yields significantly lower carbon monoxide, volatile organic compounds and PM emissions than extra lower sulphur diesel (XLSD) to be introduced in 2009, especially with waste cooking oil as the feedstock for biodiesel. But NO_x emissions increase by between 16 and 30 per cent.

The benefits of the 5 per cent biodiesel blend (B5) diminish against increasingly lower sulphur diesel, with PM emissions from B5 even increasing slightly over XLSD.

Life-cycle analysis indicates B100 from waste cooking oil produces 90 per cent less greenhouse gas emissions than XLSD. Biodiesel from tallow or canola reduces emissions by less than 30 per cent. There are negligible benefits for canola and tallow-derived B5 against XLSD, though waste cooking oil derived B5 achieves a 3 per cent reduction.

There are insufficient data at the present time to assess the air toxic emissions from biodiesel.

The Biofuels Task Force pointed out that any air quality benefits from using biofuels needed to be evaluated side by side with the costs and benefits of other approaches to reducing emissions, such as tightening emission standards.

The Task Force explained that changes in fuel standards alone, including those to apply from 1 January 2006, are expected to reduce key pollutants to 20-40 per cent of year 2000 levels by 2020. For example, fine PM and carbon monoxide emissions are expected to fall to around 20 per cent of 2000 emission levels by 2020 as a result of tightening fuel standards.

The Task Force said reductions in greenhouse gas emissions from meeting the 350 million litre biofuels target would cost $204 per tonne of carbon dioxide in terms of reduced GDP and $267 per tonne in terms of cost to government, compared to the $15 per tonne capped abatement cost under NSW and Australian Government abatement schemes.

The Task Force said studies have shown that E10 increases the risk of groundwater contamination compared to straight petrol.

It is clear that an environmental case for E10 and biodiesel has not been made, notwithstanding claims by some politicians and the ethanol, sugar and grain industry lobbies. Reductions in emissions from using E10 and biodiesel would be bought at a very high cost relative to other methods of abatement.

Queensland's Share of Road Funding [tor (e)]

Only 15 per cent of Commonwealth revenue from excise and customs duty on petrol and diesel is provided to state and local governments for roads.

In addition, anecdotal evidence (eg, *AusRAP* risk assessments and the funding backlog) suggests that Queensland's has been treated poorly relative to other states/territories in respect of National Network road funding. A package of relevant, valid measures needs to be developed to support presentation of this view. These measures would take into account the condition of National Network roads, risk assessments (eg *AusRAP*), congestion issues, population density, dispersion and growth, decentralisation, estimates of expenditure to lift segments to an acceptable standard, etc.

It is estimated that about $8.8 billion would be required to upgrade the road National Network in Queensland to an acceptable standard (but still less than in Victoria), while Commonwealth capital funding for Queensland National Network roads during the current five year *AusLink* funding period is less than $1.5 billion. Because of growth of population and car and truck traffic, declining maintenance allocations from the Commonwealth in real terms, a more rapid worsening of congestion in Brisbane than in other metropolitan areas, and the Commonwealth Government's policy of shifting responsibility for urban traffic congestion to state and local governments, the capital funding gap is likely to widen over time unless Commonwealth funding for Queensland is increased substantially.

The increase in GST collections during a period of higher petrol prices raises the question of whether the Queensland Government, as a recipient of a share of national GST collections, should be directing this revenue back into its roads expenditure.

It has not been possible for RACQ to ascertain accurately how much additional *nett* GST revenue the Queensland Government may be entitled to receive as a result of recent high fuel prices, especially when input credits from considerable business-related consumption of petrol and diesel are taken into account.

Of far greater significance is the marked contrast between Commonwealth and Queensland Governments' efforts to tackle the capital funding gap on major arterial roads, having regard to growth of population. Over the period, 1996-97 (which included Pacific Motorway construction) to 2006-07, federal funding grew by 23.5 per cent from $68 to $84 per person in real terms, while state funding grew by 77.5 per cent from $213 to $378 per person in real terms. In addition, the Queensland Government provides fuel subsidy payments of about $500 million per year, which are estimated, albeit with limited information, to exceed petrol's and diesel's contributions to GST revenues received from the Commonwealth.

This does not absolve the Queensland Government from responsibility for its poor track record in provision of funding for arterial roads in the Brisbane/Ipswich/ Sunshine Coast/Gold Coast region, and in Brisbane in particular. The contents of the *South East Queensland Regional Plan* and *South East Queensland Infrastructure Plan and Program* (SEQIPP) indicate that this neglect is likely to continue.

For example, while both documents extolled the virtues of orbital and by-pass roads as a means of alleviating congestion in Brisbane, the plans failed to deliver. The only firm proposals for by-pass roads are a partial upgrade of the Gateway Motorway (an eastern by-pass) and the North-South By-Pass, which is one of BCC's inner-suburban by-pass tunnels. Both will be tolled.

The only other reference to genuine orbital/by-pass links relates to "investigations to improve orbital and by-pass road networks in western Brisbane." This includes a western by-pass, which would complete an outer ring-road system, if properly located. But, if built, it will be tolled.

The Queensland Government has no plans for an equally important intermediate orbital road network.

Failure to plan completion of inner, intermediate and outer ring-roads is a major deficiency of the strategy for tackling Brisbane's looming congestion crisis. Tolling of ring-road segments is another serious flaw, as explained by RACQ elsewhere.[5]

A careful analysis of SEQIPP revealed that about 60 per cent of government (all levels) investment in arterial land transport in the Brisbane metropolitan area over the next 20 years is to be allocated to capital subsidies for public transport. If operating subsidies to public transport are added-in, the public transport subsidy figure rises to about 80 per cent of government arterial land transport budgets in the area, while less than 20 per cent is to be allocated to arterial roads.

[5] Willett, Ken, *The Economics, Ideology and Politics of Anti-Congestion Policy for Brisbane*, paper delivered to "Roads 2005" Conference, Brisbane: RACQ, 30 August 2005.