NTC AUSTRALIA

National Transport Commission

1 June 2015

Mr John Fraser
Secretary
The Treasury
Langton Crescent
Parkes ACT 2600

(submitted via bettertax@treasury.gov.au)

Dear Mr Fraser

National Transport Commission's submission to the Tax Discussion Paper

The National Transport Commission (NTC) welcomes the opportunity to make a submission on the Australian Government's Tax Discussion Paper.

We are an independent agency that advises transport ministers from the state, territory and Commonwealth governments on land transport reforms, including road pricing. Our role is to develop national reforms and implementation strategies for road, rail, and intermodal transport.

Transport is the 'engine room' of Australia's economy. The transport system gives people access to jobs, goods, services, education, healthcare and leisure. The transport system is also essential for importing and exporting the goods that underpin Australia's economic wellbeing.

As transport is so vital to the Australian economy, it is important that it works efficiently. Our roads are becoming more congested, public finances are being stretched, and the fuels that propel our vehicles are becoming more diverse. These are significant challenges for the current road tax arrangements.

Our submission contains new information about the declining future revenues collected by fuel excise. These revenues are projected to decline over time because vehicles are becoming more fuel-efficient and in the future more vehicles will run on fuels that pay lower or no fuel excise. As the revenues from fuel excise decline over time, there will be less funds available for the transport system and other areas such as health and education. Given it is predicted that transport demand will grow around 80 per cent by mid-century, declining revenues from fuel excise are a significant challenge in how to fund new transport infrastructure.

Australia's approach to road reform to date has been focused on heavy vehicles. While this partial market reform approach will have benefits, we argue there are greater benefits in a full market approach to road reform, taking into account passenger cars, light commercial vehicles and heavy vehicles.

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We recognise that road pricing reform is tough without public acceptance. Our previous work has found that the community does not have a good understanding of how the current road taxes and charges system worked.[1] But the work also found that the community is willing to discuss ways to improve the current taxes and charges for motor vehicles that can lead to a better overall transport system.

A potential way forward is:

- better planning and investment decisions achieved through supply-side reform
- recognising the need for a community discussion about the problems with the current road tax arrangements. Defining the problem with the Australian community and gaining acceptance of the need to solve this problem is the first essential step in road pricing reform.

Our submission provides more details on these matters. If your officers wish to discuss this submission, they can contact Ramon Staheli, Project Director Pricing, on (03) 9236 5028, or rstaheli@ntc.gov.au.

Yours sincerely

Michelle Hendy
Acting Chief Executive Officer

[1] NTC (2011). Exploring the opportunities for reform: discussion paper.

NTC's Submission to the Tax Discussion Paper

Full market road reform with better planning and investment decisions for road user charging

Key points:

- We support moves towards cost reflective road user charging for all vehicles: passenger cars, light commercial vehicles, and heavy vehicles. This full market approach offers greater overall benefits than a partial market solution (i.e. heavy vehicles only).
- Both road user charging and supply-side reform supporting better planning and investment decisions need to be addressed in a coordinated and appropriately sequenced manner.
- Government support is a fundamental requirement for reform.
- Technological and privacy issues need to be addressed.

The current focus of road reform is on heavy vehicles which is a partial market reform. While reform on this basis is possible, it is possible that the additional complexity and diluted incentives will reduce, or eliminate the benefits of the reform. We believe greater benefits will be realised through a full market approach to road reform, includeing passenger cars, light commercial vehicles and heavy vehicles.

We support cost reflective road user charging as one of the key components of road reform to achieve the discussion paper's overarching goals of fairness and efficiency. We believe that both road user charging and supply-side reform need to be addressed in a coordinated and appropriately sequenced manner.

Supply-side reform can improve the fairness and efficiency of planning and investment decisions for road building and maintenance by improving information on:

- the level of funding needed to maintain an appropriate service level
- the specific parts of the network where funding is needed the most
- priorities for investment, taking into account asset condition and road user needs and priorities.

Together with governments, we have identified a range of no-regrets supply-side reform steps that can result in significant benefits. These steps include:

1. conducting a national road network condition audit
2. defining the desired road condition or service standard to be provided
3. determining the shortfall between desired and actual road condition or service standards
4. engaging industry and the community to determine asset works priority
5. developing a project investment pipeline.

Supply-side reform is likely to have community and industry support if appropriate engagement mechanisms are developed to allow these groups to have a direct input into investment prioritisation.

Previous work in developing reform pathways has assumed that governments will support a move from tax-based funding of roads to a direct fee for service arrangement where revenue flows directly to the road provider. Government support is a fundamental requirement for reform, but governments' willingness to support such a change has not been thoroughly tested.

We also acknowledge that there are technological and privacy issues that need to be addressed, and that different solutions come with different infrastructure and administrative

costs. We have undertaken significant policy work in developing a telematics framework to help address many of these concerns. The Compliance and Enforcement Framework for Heavy Vehicle Telematics establishes principles relating to privacy, minimum standards, regulatory efficiencies and consistent application. These principles may be extended to apply to a future road user pricing system. A summary of the key technological and privacy issues is provided in the appendix.

The reform process is likely to be a long journey, requiring significant commitment and effort from all levels of government. If longer-term reform is to be successful, a comprehensive review of the lessons learned on efforts to date is necessary. Future reform would also benefit from an evaluation of international best practice.

Better understanding of fuel excise revenue projections

Key points:

- Improved fuel efficiency and increased adoption of electric vehicles are key drivers expected to reduce future fuel excise revenues.
- Future fuel excise revenues are expected to fall well short of the future road investment expenditure needed to meet increased transport demand.

The tax discussion paper outlines the revenue from fuel tax was $18.3 billion in 2014 and is the largest source of revenue raising from indirect taxation on a specific product. Road transport contributes around $9 billion. Aviation, off-road transport, stationary energy, and other fuel users represent the rest.

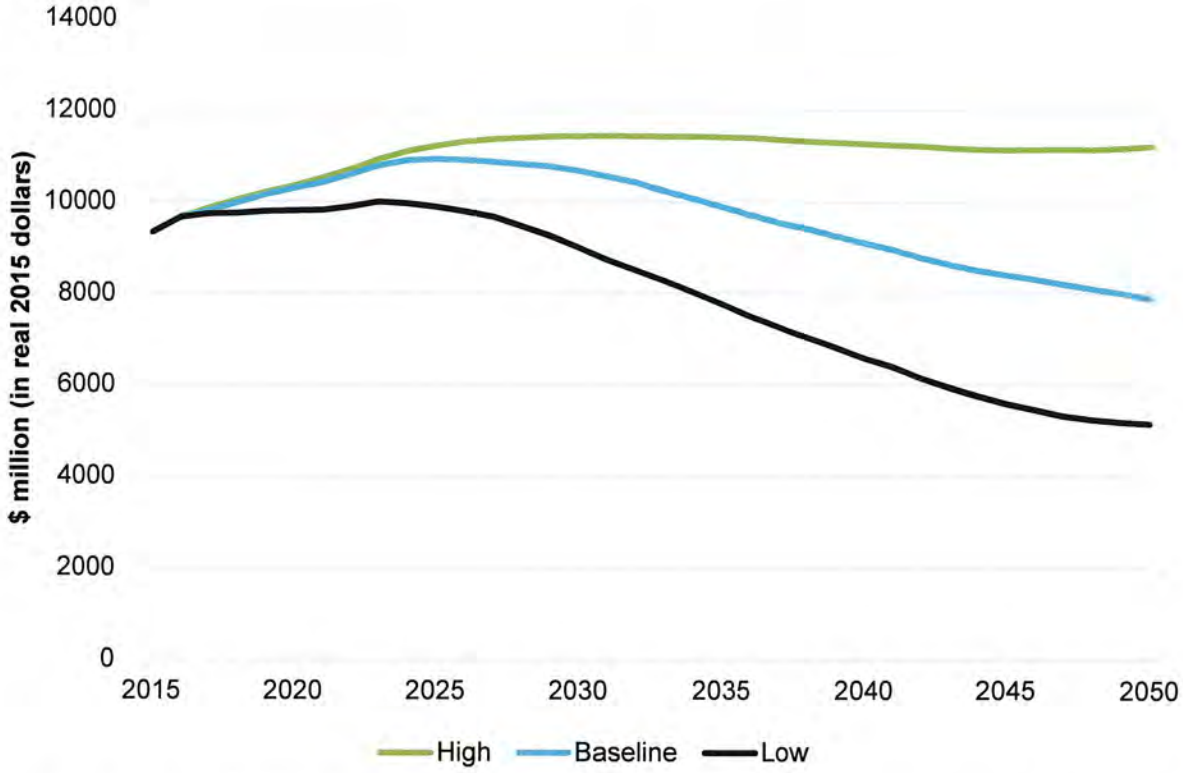
As noted in the Productivity Commission's inquiry into public infrastructure, revenue from fuel excise is declining in real terms. To better understand future trends, in 2012 we commissioned the CSIRO to model future revenues from fuel excise and registration charges. In 2015 we asked the CSIRO to update its projections.

The CSIRO modelled three future scenarios; low, baseline, and high. Each scenario incorporated projections of fuel price, vehicle kilometres travelled, and available fuel types. The baseline scenario includes moderate fuel prices, moderate growth in transport use and a switch to using more alternative fuels (such as LPG/CNG, biodiesel and electricity). The low and high scenarios have been built to provide alternatives around the baseline scenario.

The modelling assumes an 80 per cent growth in transport demand by 2050 under the baseline scenario. Under this scenario, the modelling projects that real fuel excise revenues will decrease by 16 per cent. The low and high scenarios resulted in a 45 per cent reduction and a 20 per cent increase, respectively.

The figure below shows the projected fuel excise revenues to 2050 for the baseline, low and high scenarios.

Projected fuel excise revenues to 2050 for the baseline, low and high scenarios



We note that the CSIRO's projections are reliant on a number of assumptions and if any of these assumptions were to change in the modelling or in real terms, the results would be different. We can provide the CSIRO report upon request.

The re-indexation of fuel excise in 2014 significantly improved the outlook for road revenue. Without this change, the real value of the excise rate would have declined by 60 per cent by 2050 under the baseline scenario.

The modelling finds that adoption of electric vehicles is the strongest revenue reducing factor, both improving vehicle energy efficiency per kilometre and using a fuel source that does not attract fuel excise tax.

Historically, fuel excise revenues have been closely linked to transport demand. While this relationship still exists, improvements in fuel efficiency, and the increased adoption of zero or lower excise rate alternative fuels are major factors that could increasingly reduce fuel excise revenues relative to transport demand.

The key risk for governments is that, in the future, they may find themselves in the position of facing significant additional demands for investment in the road network driven by increased transport demand while fuel excise revenues remain static or decline. This is something that a well-designed road user charging regime could help avoid.

The discussion paper notes that a number of alternative fuels, such as LPG, CNG, LNG, biofuels and ethanol, are taxed, albeit at a discounted rate. However, the current tax system has no cost recovery mechanism for electric vehicles. We highlight this gap as a potential risk to future fuel tax revenues, but note there are further policy objectives, such as reducing carbon dioxide emissions and reliance on imported fuels, that need to be balanced.

Our own analysis (included in the appendix) shows annual fuel-based revenues lost from the small, but growing; fleet of electric vehicles in Australia was around $350,000 for the 948 electric vehicles sold in 2014.

If the proportion of electric vehicles grew to two per cent of all light vehicles sold, over $8 million of fuel-based tax revenue would be lost per year, for those vehicles sold in the year. The amount of lost revenue would continue to grow as the electric vehicle fleet increases. Additional data points and assumptions are shown in the appendix.

Appendix

Summary of technological and privacy issues to be addressed

Based on our experience in transport technology projects we suggests that the following factors be taken into account when considering the use of technology for road pricing schemes:

1. Identify policy settings prior to examining technology options.
2. Consider mandatory and voluntary options for systems that require the installation or carriage of technology, and the potential for incentives for uptake.
3. Establish a privacy framework for data collected from a technology application to clearly define the purpose of collection, which parties the information may be disclosed to, and processes to ensure that individuals are notified of the collection.
4. Establish open technology standards to enable the most efficient technology solution and billing structure.
5. Consider potential infrastructure and administrative costs for road pricing solutions.

The full report on the Compliance and Enforcement Framework for Heavy Vehicle Telematics can be found at:

http://www.ntc.gov.au/Media/Reports/(C5F39CEF-3F43-490C-8D2B-569185379C55).pdf

Foregone fuel-based revenue projections from electric vehicles

Percentage of total new vehicles sold (2014 base year)	Number of electric vehicles sold per year	Fuel-based revenue foregone within a single year
0.09%	948*	**$351,674**
1%	10,810	**$4,009,948**
2%	21,619	**$8,019,897**
5%	54,048	**$20,049,742**
10%	108,095	**$40,099,483**
25%	270,238	**$100,248,708**

Source: NTC 2015

Assumptions and calculations

The analysis is limited to new light vehicles sold in 2014. Therefore, calculations do not include fuel consumption values for the existing vehicles in operation before 1 January 2014.

To determine the amount of fuel base tax revenue forgone we need to know:

- number of light (passenger and light commercial) vehicles and electric vehicles sold in 2014
- average vehicle kilometres for all light vehicles
- average fuel consumption for light vehicles and electric vehicles
- average fuel use for light vehicles and electric vehicles
- average fuel tax revenues for light vehicles and electric vehicles.

Number of light vehicles and electric vehicles sold in 2014

Of 1,080,952 new light vehicles sold in Australia in 2014, 948 were electric vehicles, representing 0.09 per cent of the new light vehicle fleet.

Electric vehicles are primarily powered by an electric motor. Some electric vehicles are powered solely by an electric motor and use no taxable fuel. Others have a secondary petrol or diesel engine to extend their driving range and have a component of taxable fuel use.

Hybrid vehicles, have electric motors, but are not defined as electric vehicles because they are primarily powered by a petrol or diesel engines. Increasing adoption of hybrid vehicles contributes to the overall fuel efficiency, which also impact fuel-tax revenues.

(NTC, Carbon Dioxide Emissions Intensity for New Australian Light Vehicles 2014: Information Paper (2015) http://www.ntc.gov.au/Media/Reports/(28DF073D-71D6-40BB-8FC4-C358C475A2B3).pdf)

Average vehicle kilometres

The ABS's Survey of Motor Vehicle Use data shows that average passenger vehicle kilometres travelled in 2012 was 13,700 km and 17,400 km for light commercial vehicles. Our calculations used a weighted average of 14,625 km for both passenger and light commercial vehicles.

(ABS, 9208.0 - Survey of Motor Vehicle Use, Australia, 12 months ended 30 June 2012, http://www.abs.gov.au/ausstats/abs@.nsf/mf/9208.0/)

Average fuel consumption

We calculated average rate of fuel consumption for light vehicles sold in 2014 by converting the average carbon dioxide emissions value into a litres per 100km value. (NTC, Carbon Dioxide Emissions Intensity for New Australian Light Vehicles 2014: Information Paper (2015) http://www.ntc.gov.au/Media/Reports/(28DF073D-71D6-40BB-8FC4-C358C475A2B3).pdf).

We calculated that average fuel consumption for light vehicles sold in 2014 was 8.5 litres per 100 kilometres and average fuel consumption for the 948 electric vehicles sold in 2014 was 1.85 litres per 100 km.

Average fuel use

Average fuel use is a function of average vehicle kilometres and average fuel consumption.

Average fuel = Average fuel consumption / 100 x Average vehicle kilometres

For light vehicles, average fuel use was 8.5 litres / 100 x 14,625 km = **1243 litres per vehicle**.

For electric vehicles, average fuel use was 1.85 litres / 100 x 14,625 km = **271 litres per vehicle**.

Average fuel tax revenue

Average fuel tax revenue is average fuel use multiplied by the fuel excise rate that was used throughout 2014 (Australian Tax Office).

For light vehicles, average fuel tax was 1243 litres x $0.38143 = **$474.17 per vehicle**.

For electric vehicles, average fuel tax was 271 litres x $0.38143 = **$103.20 per vehicle**.

Fuel based revenue forgone

The amount of fuel based revenue forgone for each electric vehicle sold is the difference between average fuel taxes of light vehicles and electric vehicles,

i.e. $474.17 - $103.20 = **$370.96.**

The table above shows calculations of forgone fuel tax revenues for various electric vehicles sales scenarios, by proportion of vehicles s