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21 April 2008

Garnaut Review Secretariat  
Level 2, 1 Treasury Place  
East Melbourne VIC 3002

Dear Professor Garnaut

Thank you for the opportunity to comment on Issues Paper - Forum 5 Transport, Planning and the Built Environment.

By way of background, TTF Australia is a member of the Australian Government's Tourism and Climate Change Taskforce and the Emissions Trading Scheme (ETS) Industry Roundtable. TTF Australia also chairs the Tourism and Transport Climate Change Roundtable which comprises 20 members from the tourism, land transport and aviation industries.

Climate change is an important issue for TTF Australia.

The Australian tourism industry is committed to working with the aviation industry to reduce air travel carbon dioxide (CO<sub>2</sub>) emissions.

TTF Australia recognises all segments of the aviation industry are working towards minimising their environmental impact including aircraft and engine manufacturers, air traffic management, airlines and airports.

#### Aircraft and Engine Manufacturers

Aircraft manufacturers, including Boeing, have made tremendous progress in reducing the environmental effects of its aircraft. Today's next-generation jet aircraft have a 30dB noise improvement and consume 70 per cent less fuel and emit less CO<sub>2</sub> compared to early jet aircraft.

Next-generation aircraft are significantly more environmentally friendly than their predecessors, through advanced airframe design. The Boeing 787 for example, will consume 25 per cent less fuel than its predecessor, the Boeing 767.

Engine manufacturers, including Rolls-Royce, have also made tremendous progress in reducing their environmental impact. Rolls Royce's Trent 1000 engine, for example, is 15 per cent more fuel efficient than its Trent 800 series (typically used on Boeing 777s).

Rolls-Royce continues to heavily invest in research with an aim to further reduce its environmental impact. Two-thirds of Rolls-Royce's annual \$1.6 billion research and technology budget is dedicated to this – a phenomenal commitment.

#### Alternative Fuels

Second generation biofuels have the real possibility of reducing aviation emissions. Second generation biofuels are more efficient and sustainable energy sources than first generation biofuels. Air New Zealand plans to test one of its Boeing aircraft with biofuel later this year in conjunction with Boeing and Rolls-Royce.

Qatar Airways undertook the first flight using synthetic liquid fuel in February 2008. The test flight was undertaken in conjunction with Shell and Rolls-Royce.

#### Air Traffic Management

Airservices Australia is working to address inefficiencies in the current air traffic management system by attempting to restrict aircraft delays to the ground, introducing more direct flight paths using state-of-the-art navigation technology and implementing flexible tracking.

#### Airlines

Airlines, including Jetstar, Qantas and Virgin Blue, are investing substantial amounts of capital in new next-generation aircraft that will be significantly more environmentally friendly than their predecessors.

Qantas aims to reduce its CO<sub>2</sub> emissions by 2 million tonnes and improve fuel efficiency by 7.5 per cent by 2011. Qantas' fuel efficiency program has already produced fuel consumption reductions equivalent to removing 30,000 cars from Australia's roads each year.

Jetstar, Qantas and Virgin Blue have also implemented carbon offset schemes. In addition to the offering to passengers, Virgin Blue also offsets the travel of its staff and crew at a cost of \$2.5 million. Virgin Blue continues to improve the fuel efficiency of its fleet (through winglets, reduced aircraft weights and better flight planning) and is implementing eco-efficiency initiatives such as waste minimisation and recycling strategies for its aircraft, terminals and offices.

#### Airports

Airport operators are also taking steps to reduce their impact:

- A number of Australian airports are participating in the Department of Climate Change's Greenhouse Challenge programme. Participating airports submit annual reports to the programme outlining their greenhouse gas emissions and savings for the year.
- Sydney Airport uses hybrid vehicles on the tarmac and offsets the emissions from these vehicles through its Greenfleet programme. The airport has constructed an on-site water treatment plant that will save up to one million litres of water each day. Meanwhile, the airport's Energy Savings Action Plan has resulted in greenhouse gas savings of approximately 6,265 tonnes of CO<sub>2</sub> each year.

- Since January 2007, Brisbane Airport has hosted a Required Navigation Performance project with Qantas and Airservices Australia which has shown encouraging results in reducing aircraft emissions.

Whilst more can be done, TTF believes industry action to date has been significant.

Collectively, the aviation industry has acted responsibly in responding to climate change and the Australian tourism industry strongly supports the aviation industry's commitment to this important issue.

TTF also believes that future industry action needs to be supported by government.

In relation to section 3.3.1 and information barriers, travellers should consider emissions intensity when comparing their transport options.

Virgin Blue for example notes that next generation 737 aircraft have lower emissions intensity per passenger compared to one person travelling in an eco-friendly vehicle over medium to long distances.

TTF acknowledges that under an ETS, as proposed in the Garnaut discussion paper, a price on emissions will force travellers to do this. The price of emissions intensive transport will rise more than other transport, inducing travellers to switch.

However, TTF believes there is a role for government in providing information to the public about the differences in emissions intensity between transport modes now - in the lead up to the ETS.

This would allow travellers to make informed decisions about the efficiency of each particular mode of transport they choose to use.

In doing so, government would address the current information asymmetry travellers have, which represents a significant market failure.

In relation to section 3.5 and barriers to low emissions opportunities in aviation:

1. TTF Australia does not support government policies which single out aviation such as an aviation tax.

Research by Australia's pre-eminent academic in tourism economics Professor Peter Forsyth (Monash University) demonstrates that government policies which single out aviation, such as a tax on aviation fuel, would not reduce emissions and only add to the cost of achieving targets.

In some circumstances, such policies may even result in increased emissions.

Professor Forsyth's full unpublished analysis of imposing a tax on aviation is provided in Attachment A.

2. TTF Australia strongly supports accelerated aircraft depreciation in order to encourage the use of newer aircraft.

Currently, Australia's aircraft depreciation rules allow airlines to write-off the value of aircraft over ten years. Regional competitors however are able to update their fleet more regularly. Singapore for example has a write-off period of three years, while Hong Kong has a write-off period of five years.

Notwithstanding issues of competitive neutrality, accelerated aircraft depreciation would provide financial incentives to Australian carriers to reinvest in new aircraft.

While accelerated depreciation would not reduce emissions under the ETS, given emissions are set at a cap, it would lessen the cost of achieving this target.

3. TTF Australia considers the Australian Government's policy to reduce the impact of aircraft noise on communities to be a barrier to low emissions opportunities in aviation.

In TTF's view, aircraft noise policy is one of the most significant threats to achieving lower emissions in the aviation industry. It directly conflicts with aviation emissions policy.

#### Cairns case study - 2007

In September 2007 trials were conducted at Cairns Airport which required aircraft to use a more direct, fuel-efficient flight path. The new approach offered significant environmental benefits by reducing aircraft CO<sub>2</sub> emissions. However, the trial also increased the number of people exposed to aircraft noise.

Following a public outcry by local residents, the trial was abandoned.

Airservices Australia gave an undertaking that in all possible cases, aircraft landing at Cairns Airport would approach over water, diverting aircraft several kilometres away from populated areas – the outcome ultimately increased aircraft CO<sub>2</sub> emissions.

Given Cairns Airport is Australia's fifth busiest international airport accommodating over 130,000 aircraft movements per annum – this will lead to a material increase in CO<sub>2</sub> emissions as a direct result of Airservices Australia's policy.

The Cairns case study demonstrates the extent to which government policy on aircraft noise can be a significant barrier to low emissions opportunities in aviation.

Air traffic management is the cornerstone of the aviation industry's response to climate change.

An inefficient air traffic management system will ultimately reduce the benefits of the aviation industry's progress towards achieving a more efficient aircraft fleet.

If current aircraft noise policy persists, Airservices Australia, who manages 11 per cent of the world's airspace, will not be able to deliver an optimally emissions efficient air traffic management system.

4. TTF Australia strongly supports increased government funding for research and development into more efficient aviation operations, technology, and alternative fuels.

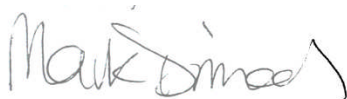
Research and development into environmentally friendly aviation technology will create positive externalities. For example, investors in research and development would not be able to capture all the gains from their spending – competitors may simply copy their initiatives.

Research and development in this field should therefore attract government support to correct the externality.

I note that the Garnaut Review is seeking submissions on the proposed Emissions Trading Scheme more broadly. The Sustainable Tourism Cooperative Research Centre's (STCRC) Centre for Tourism Economics and Policy Research has recently undertaken an analysis of the ETS' impact on tourism which is provided for information at Attachment B.

Should you wish to discuss TTF Australia's submission, please contact me on (02) 9240 2015 or at [mdimech@tff.org.au](mailto:mdimech@tff.org.au).

Yours sincerely



DR MARK DIMECH  
National Manager

Taxing Aviation Fuel?  
Peter Forsyth  
April 2008

With climate change being such a live policy issue, new proposals for reducing Greenhouse gas (GHG) emissions keep flowing. Don Henry, of the Australian Conservation Foundation, has recently proposed taxing aviation fuel as a means of reducing GHG emissions, at the same time as raising nearly \$1bn for the federal government. This appears to be a clever idea, but it has not been carefully thought out, and it is unlikely to succeed in its objective of reducing emissions.

Australia is set to implement an emissions trading scheme (ETS). Before the scheme comes into operation, taxing aviation fuel will have the effect of reducing emissions from aviation, since it will discourage the use of air travel. The impact on overall emissions will be less than the impact on aviation emissions since, to extent, it will encourage travellers to use substitute modes, such as cars, which also produce emissions.

However, the ETS is expected to come into operation within a few years, and when it does, taxing aviation fuel will cease to have any effect in reducing overall emissions. This is because of the way an ETS works. Aviation emissions will reduce, but this will free up permits for sale to other industries, which will use them. Emissions will remain at the overall limit, at whatever level that is set in the Scheme. All that is changed will be which industries are producing the same total emissions.

It might be argued that emissions from aviation are more damaging than other emissions, and that a reduction in the share of aviation in total emissions is desirable. There is some evidence for the proposition that emissions from aviation are more damaging than others, though it is not clear to what extent this is so. However, if it is accepted that this is the case, a more effective way would be to allow for it in the design of the ETS. Thus, if aviation emissions were assessed to be twice as damaging as other emissions, the Scheme could require aviation to have twice as many permits per tonne of emissions. This would achieve GHG emissions reduction targets at least cost.

Paradoxically, taxing aviation fuel could actually lead to an increase in GHG emissions. There has been some discussion of leaving motor vehicle fuels out of the ETS (this option has been canvassed by the Assistant Treasurer). Some consider it regressive to raise the cost of motor vehicle fuel, and other means of reducing emissions might be used.

For example, emissions from motor vehicles might be reduced by imposing strict emissions controls on new vehicles. If this is the case, additional use of motor vehicles will lead to additional GHG emissions. If aviation is taxed, travellers will, to an extent, switch to cars. When the ETS is in operation, the taxation of aviation will result in no reduction in overall emissions, because it frees up permits for use elsewhere, but the extra use of cars will add to emissions. All up, there will be an addition to Australia's GHG emissions.

Taxation of intermediate inputs is questionable from an economic efficiency perspective, since it distorts production choices - it is more efficient to raise the same amount of revenue from final goods or income taxation. An aviation fuel tax is a tax on an intermediate input. There could be a justification for such a tax if it were levied to correct an externality. If there is no ETS, then GHG emissions are an externality, and levying a tax to correct for this externality would be efficient. However there is no reason why this tax should be exactly equal to the tax on petrol, at 38 cents per litre - the efficient level of tax could be well above or well below this. This could only be a valid argument for taxing aviation fuel in the short term- when the ETS is in operation, and if aviation is included at the appropriate level in it, this justification for the tax disappears, since the ETS internalises the externality.

Taxing petrol but not taxing aviation fuel to anything like the same extent might seem to be an anomaly and a distortion. However there is more to it. Petrol tax is also an implicit price for using roads. Governments invest in roads but it is difficult to price their use, and thus the government allows motorists to use them free of charge. Thus motorists pay for roads through the petrol tax. There is some net tax levied by governments on fuel, because the revenues received exceed the expenditure on roads. By contrast, aviation pays directly for its infrastructure- airlines pay airport charges, and for air traffic control services. Taxing aviation fuel at the same amount per litre as petrol would not correct the apparent anomaly.

The real objection to proposals, such as taxing aviation fuel, is that they are missing the point of an ETS. When an ETS is in place and it covers an industry, additional measures to reduce GHG emissions from that industry are worse than useless- they add to costs but do not reduce aggregate GHG emissions. Furthermore, the more effort that governments put into ineffective "supplementary" measures, the less they can devote to the main game, that of resolving the many problems in ensuring that the ETS works well.

In summary, aviation does produce GHG emissions, and thus it should be incorporated in policies, such as the ETS, designed to reduce these emissions. Ad hoc policies, such as taxing aviation fuel at the same apparent rate as petrol, simply do not contribute to the solution. When the ETS is in place, they will not reduce emissions, and could, under some circumstances, actually increase them. At best, these policies will simply add to the cost of achieving the targets.

An Emissions Trading Scheme- What does it mean for Tourism?  
STCRC Centre for Tourism Economics and Policy Research

Emissions Trading Schemes

An emissions trading scheme (ETS) could be implemented in Australia, and it could take the form of a “cap and trade” scheme.

Such a scheme would involve limiting greenhouse gas emissions (GGEs) to some level, and issuing permits to create emissions up to this limit. Firms would be allocated permits which they could trade. Most likely, permits would be issued to firms which produce the emissions, though it could be feasible to issue permits to customers who use the products of these firms. The permits would command a price because they would be limited. Tight limits would lead to high permit prices.

The impact on businesses would depend on how the permits are allocated- by auction, by sale at a below market price or free of charge.

Businesses would do well if there is free allocation, especially if limits are tight and the value of permits is high. In most situations profits of firms which participate will be higher than without the ETS.

The value of permits will be incorporated into the prices of the goods and services the businesses sell- prices of goods or services which entail considerable production of GGEs, such as electricity, will rise most.

An ETS does involve non trivial administrative costs, in setting up allocations and trading and in monitoring emissions or fuel use. Thus it is likely to be limited to larger enterprises. Carbon taxes, for example linked to fuel use, might be used where it is not feasible to incorporate a firm or industry in an ETS.

Carbon taxes set at the same level can have the same effect on prices to customers as an ETS, however it is possible that businesses will not pass on the full value of a permit to customers if they obtain permits free of charge. This is an issue which warrants further modelling research.

Tourism and Emissions Trading Schemes

Tourism produces GGEs directly and indirectly (e.g. through the use of electricity), though the largest effect is likely to be indirect. This limits tourism industry participation in an ETS.

Tourism is a direct producer of GGEs, and thus potential participant in a ETS, in several ways:

- Through aviation emissions;
- Through land transport emissions; and
- Through fuel use by tourism businesses (e.g. a hotel with gas central heating).

Of these, aviation is the easiest to include in an ETS (this is already foreshadowed in the EU).

Negative impacts on the tourism industry would be minimised if tourism sectors such as aviation are included in a general economy-wide ETS rather than an aviation specific ETS.

Many producers in land transport are small (bus companies, family cars) and incorporation of these in an ETS, though feasible, would be administratively costly.

If land transport and fuel using tourism businesses are included in a climate change mitigation policy, this would most likely be through a carbon tax linked to fuel purchases.

Implementation of an ETS in Australia would raise tourism industry costs, e.g. through the cost of electricity and other inputs. The full extent of the cost implications depends on tourism's direct and indirect contribution to GGEs, and estimating this requires a modelling study.

#### Domestic Tourism

Inclusion of domestic aviation in an ETS would raise air fares. The prices of surface travel would increase if it is included in an ETS (unlikely) or subjected to a carbon tax.

Domestic tourism will generally become more expensive, and it will lose some demand, though substitutes for tourism will also become more expensive. The domestic aviation sector of the tourism industry would gain, however, if there is free allocation of permits.

#### International Aviation and Tourism

The incorporation of international aviation in an ETS poses problems, though these can be solved. The EU plans to include long haul international aviation in its ETS.

Foreign airlines, as well as Australian international airlines can be included in an Australian ETS. Including them will mean that competitive neutrality between Australian and foreign airlines can be preserved.

Airlines will gain from being part of an ETS with free allocation of permits, but international air fares will rise. The extent to which this happens can be studied in further modelling work.

The rise in air fares will have a larger negative impact on inbound tourism than on outbound tourism if international routes to competitive destinations are not subjected to climate change mitigation policies. Assessment of impacts is a possible task for modelling work.

There will be similar impacts on inbound and outbound tourism if routes to Australia and competitive destinations are subjected to similar climate change mitigation policies. Assessment of impacts is a possible task for modelling work.

Broadly speaking, the aviation sector will gain from the implementation of an ETS in which it participates, though the ground component sector of tourism will experience lower demand because of the impacts on air fares.

Several forces will affect the international price competitiveness of the Australian tourism industry. While an ETS will raise the costs of the industry, and hence the prices it charges, it will also raise the costs of other exports, possibly by a greater margin. This will put downward pressure on the \$A, which will counteract the effect of higher costs.

#### Summing Up

Implementation of an ETS in Australia will raise costs for the tourism industry, and passing on these costs will lower demand for tourism. Inbound and outbound international tourism will be negatively impacted through higher air fares.

An ETS has a definite upside for firms which participate directly in it, but aviation is likely to be the only sector of the tourism industry which will be able to do this.