



Tourism & Transport Forum (TTF)

## Carbon tax and tourism & travel – Trade and global warming exposed

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**TOURISM & TRANSPORT FORUM**

The Tourism & Transport Forum (TTF) is a national, Member-funded CEO forum, advocating the public policy interests of the 200 most prestigious corporations and institutions in the Australian tourism, transport, aviation, and investment sectors.

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## Executive Summary

Tourism is a vital industry within Australia employing more than 500,000 Australians. The 2020 Tourism Industry Potential, as endorsed by the Australian and state and territory government tourism ministers, highlights the opportunity for the tourism industry to create a further 56,000 to 152,000 jobs by 2020. However, for this tourism industry potential to be realised during the shift to a lower carbon economy a range of supportive policies for tourism and travel will be required.

Tourism's reliance on Australia's natural estate means that the industry is concerned about the threat of climate change. We believe that climate change is real, that humans are contributing to it and that steps must be taken to reduce Australia's carbon emissions. Without decisive action, we are putting our natural assets like the Great Barrier Reef, Kakadu and the Australian Alps at risk as well as our core clean/green image.

At the same time, in this submission we estimate real costs to the tourism and travel industry and significant job losses from the introduction of a carbon tax, even with most households fully compensated. Tourism and travel jobs are expected to be the first lost among trade exposed sectors under a carbon tax. This submission suggests transitional measures to reduce tourism and travel job losses, particularly in regional areas.

However, a carbon tax alone is not enough to reduce our greenhouse gas emissions by the required amount. It will take a raft of complementary measures to make a material difference and the sooner we begin the transition to a low-carbon economy, the better. Our support for a carbon tax is reliant on effective transitional and complementary measures being provided by the government. The consensus position of our membership is that our industry needs to move to reduce emissions as a core aspect of improving our long term competitiveness.

**In formulating this submission, TTF consulted with its Members and has drawn on extensive previous TTF research in this area, as well as commissioning new analysis. The following points summarise the view of TTF:**

1. **The science shows that mankind induced climate change is real** and greenhouse gases are major contributors. This is leading to global warming and more frequent major weather events, including high impact storms and tempests, constitute growing risks to Australia's economy;
2. **Australian tourism and travel is dependent on the natural environment** and therefore heavily at risk in the continued failure to achieve faster global progress to reduce greenhouse gas emissions – our sector, as much as agriculture, relies on the natural environment;
3. **Australian Government action is overdue** as Australia is currently the highest emitter per capita among developed countries – waiting for other countries to move first ignores Australia's poor position relative to other developed countries;
4. **Australian tourism and travel will be the first trade-exposed sector hit by imposition of a carbon tax** – reflecting the speed with which overseas consumers and Australians can change their purchasing in response to price signals, compared to industries with long-term contracts and higher profit margins. **The impact on Australian tourism of the carbon tax will involve significant job losses** related to tourism business financial losses and will be concentrated in regional areas;
5. The **two industry sub-sectors of domestic aviation and tourist accommodation** will be impacted most directly by the carbon tax;

6. Reflecting the expected impacts of the carbon tax on Australian tourism and travel as our second largest employing trade-exposed sector (after manufacturing), **the Australian Government should provide transitional assistance to this industry;**
7. **The expected carbon tax will lead to additional global greenhouse gas emissions from Australian tourism** as it increases the cost and hence prices of the domestic tourism sector but not the cost of travel overseas. Outbound tourism is expected to grow significantly due to the carbon tax;
8. **A carbon tax alone is not a sufficient Australian Government policy response to cut greenhouse gas emissions** from domestic tourism and inbound international tourism to Australia;
9. **Other complementary measures that more directly deliver new technologies and accelerate investment in lower emission processes are required** for Australia if we are to most cost effectively reduce emissions; and
10. **The carbon tax should not discourage use of public transport**, by making petrol tax-free while imposing increased costs on public transport.

### **Australian tourism and travel produces a share of greenhouse gases equivalent to its share of GDP**

Tourism and travel in Australia produce the same share of greenhouse gases as its share of GDP, but a lower share of greenhouse gas emissions than its share of employment due to its labour intensive nature. As a result this sector, including its air and land transport needs, should not be targeted by environmentalists who normally focus on sectors whose share of GDP or employment is much lower than their share of emissions, nor should it be among the lowest priority sectors for changing production methods to reduce emissions.

### **The carbon tax will impose costs on the Australian tourism and travel industries**

In the initial stages, TTF anticipates a carbon tax of between \$20 and \$30 per tonne. This paper assumes a carbon tax of \$25 per tonne to simplify presentation of results. Similarly, this paper addresses impacts of a carbon tax, but recognises the government's intent to move to carbon pricing through a trading scheme after a transition period.

A \$25 per tonne carbon tax will impose around \$600 million in additional costs on the Australian tourism and travel industries. If, after the initial transition period, petrol for private vehicles is included in the pricing of carbon, this will impose around \$865 million in additional costs on the Australian tourism and travel industries.

The general position of TTF is that the government in introducing a carbon tax should provide as few exemptions and concessions to emission intensive industries as possible to provide lowest cost emission reductions and minimise the distortions on lower emission sectors and the economy as a whole.

### **The impact of compensation to households will have a mixed impact on Australian tourism and travel**

Expected assistance to low/middle income Australian households will offset some of the impacts from income changes on domestic tourism and travel, but relative price changes due to the carbon tax favouring overseas destinations for both Australians and potential foreign visitors will continue to hurt the sector.

The industry receives around one third of its revenue from domestic travel from higher income Australians (household incomes above \$150,000). Outbound travel, being carbon tax-free, will be further advantaged as more Australians substitute outbound trips for domestic trips. In addition, no compensation has as yet been proposed for inbound international travel to Australia.

After allowing for household compensation and the price sensitivity of travellers, the expected impact on net revenues for the tourism and travel industry will be a fall of around \$731 million if

petrol is not subject to carbon tax and a fall of around \$1.16 billion per annum if petrol is subject to carbon tax. These impacts will be stronger for inbound tourism than domestic tourism. The estimated fall in annual international inbound arrivals is 114,000 (if petrol is excluded) and 138,000 (if petrol is taxed).

Negative impacts of the carbon tax for tourism and travel will be concentrated in regional Australia. Areas like Cairns, Tasmania and the Red Centre are more reliant on domestic airlines for inbound visitors, more directly compete with outbound destinations for Australians' travel and are less reliant on business travel, which should be less affected by the introduction of the carbon tax.

### **Tourism and travel businesses will pass on additional costs to consumers**

As they face increased costs, tourism and travel businesses will seek to pass on these costs to consumers. This will require a fall in the supply offered, with some businesses leaving the industry and others reducing costs by cutting staff or marketing and other expenses. As many industry sub-sectors are highly competitive and have low profit margins, there is less capability for absorbing the carbon tax without cutting employment.

### **The carbon tax will reduce Australian tourism and travel industry revenues, resulting in job losses**

The net impact expected for tourism operators is a loss of between 0.7 per cent and 1.2 per cent as a share of total sales revenue. However, owing to low margins in tourism businesses, this reduction in net revenues has a magnified impact on net profits. With average gross operating surplus at 12 per cent of gross revenues (Tourism Satellite Account, 2006-07, ABS), the carbon tax threatens to reduce industry net profits by up to 10 per cent. This will result in some businesses closing their doors, while others will reduce costs by cutting staff, marketing initiatives or other expenses. We estimate this will lead to job losses of between 3,600 and 6,400.

One of the dangers for the tourism and travel sector is the risk of alarmist projections about the impact of the carbon tax leading to inflated consumer perceptions of the price impact on this industry. If some commentators argue that the sky will fall for this industry, this will impose real additional costs on the sector.

### **The domestic aviation and accommodation sectors will be most directly impacted by the carbon tax**

Domestic aviation will be one of the most heavily affected areas of the Australian tourism and travel industry, especially in the transitional period when petrol is assumed to be tax-free. Tourism accommodation will also face significant challenges in responding to a carbon price. As buildings contribute around 30 per cent of greenhouse gas emissions, a focus on complementary measures will be necessary to accelerate the replacement of less efficient building equipment and buildings, especially with the common separation of owner and building manager.

TTF is looking for the Australian Parliament to develop a balanced package of:

- a carbon tax;
- complementary measures to further reduce greenhouse gas emissions cost effectively; and
- fair assistance to a trade-exposed sector that, even before the carbon tax, already faces a crisis in maintaining its half a million jobs and central contribution to many regional economies.

TTF welcomes the opportunity to enlarge upon this submission or otherwise contribute to the development of a balanced strategy for shifting Australia to a less carbon-intensive economy.

## **Recommendations for transitional & complementary measures**

TTF has reviewed a wide range of possible measures that would reduce job losses in tourism in the early years of carbon pricing and further reduce emissions from this sector beyond that possible with a carbon tax alone. With effective transitional and complementary measures, the tourism and travel industry in Australia should go from a medium-emission, trade-exposed sector to a low-emission, trade-exposed sector – setting it up for faster long-term growth.

The following measures are designed to be highly targeted, practical and cost effective for the government.

### **Reducing the impact from carbon tax on tourism employment as a highly trade-exposed sector**

#### **Recommendation 1**

The current GST-free status for international airfares to Australia and business event package travel to Australia from overseas should be extended to leisure travel packages.

#### **Recommendation 2**

Regional tourism destinations should receive additional marketing support from Tourism Australia. An additional \$25 million per annum should be spent on domestic tourism marketing. In addition, increased funding of \$10 million per annum should be provided to Tourism Australia to increase marketing of Australia in key inbound source markets.

#### **Recommendation 3**

The government should urgently reform air traffic control at Australian airports to reduce fuel burn and emissions by airlines. New GPS-based technologies, in partnership with continuous descent approaches, will improve airline costs, noise for nearby residents and the safety of airline operations. The carbon tax makes this overdue reform more urgent.

### **Complementary measures to the carbon tax to more cost effectively reduce greenhouse gas emissions**

#### **Recommendation 4**

The Australian Government should confirm as soon as possible the following details of the Tax Breaks for Green Buildings Scheme:

- Reflecting the higher greenhouse gas emissions from hotels than commercial buildings per square metre, hotels should be a priority for funding under this program and criteria for qualifying for this scheme should be drawn up to recognise the features of the hotel sector;
- Hotels should receive quarantined funding within this program, so that hotel applicants only compete against other hotel applicants; and
- Funding under the program should not require a move from NABERS rating 2 to NABERS rating 4, but rather be competitively assessed on the basis of actual reduction in CO<sub>2</sub> emissions per room as assessed by NABERS.

**Recommendation 5**

The Australian Government should amend as soon as possible the ATO tax depreciation schedule for tourist accommodation buildings and building plant and equipment:

- The effective life for new buildings used for tourist accommodation that achieve a 4 star or above NABERS rating should be 15 years rather than 25 years as currently; and
- Installation of new and replacement heavy energy consuming plant and equipment into tourist accommodation buildings (including air conditioning systems, lift systems, swimming pools and kitchens) that achieve a high energy efficiency rating should receive a 50 per cent depreciation bonus in the first year that operates in parallel with the existing effective life schedule.

**Recommendation 6**

The Australian Government should urgently review with the Sustainable Aviation Fuel Users Group (that includes Qantas, Virgin Blue, Air NZ and Boeing Australia) policy options for fast-tracking support for research and development of sustainable aviation jet fuel. Much of the revenue from the carbon tax on domestic airlines (around \$250 million per annum) should be invested into research and development of sustainable aviation jet fuel. Support for aviation jet fuel research and development should be a key complementary policy announced during the process of parliament passing the carbon tax legislation.

**Recommendation 7**

The Australian Government should reduce the effective life of aircraft for tax purposes as a complementary measure to the implementation of the carbon tax. Effective lives of aircraft for tax purposes should be reduced to three years to speed up the introduction of new generation aircraft, which commonly offer 15 to 20 per cent emissions savings.

**Recommendation 8**

The Australian Government should ensure:

- That the package of measures aimed at reducing greenhouse gas emissions that includes the carbon tax also includes further tax incentives for individuals to increase their public transport use, for businesses to increase rail freight use and to offset price impacts on public transport fares to an equal or greater extent than they do for private car use; and
- The public transport industry should receive increased incentives for energy efficiency, research and development and accelerated asset depreciation rates.

## **Global warming – a growing threat to Australian tourism & travel**

TTF believes that the science shows that human-induced climate change is real and greenhouse gases are major contributors – that global warming due to greenhouse gas emissions is occurring and accelerating.

### **The risks to tourism and travel from global warming**

Tourism and travel faces a wider range of risks from global warming than other trade-exposed Australian industry sectors.

TTF considers that Australian tourism is very heavily reliant on conserving our natural environment as a core asset. With significant environmental damage occurring around the world, and particularly in developing Asia, Australia's clean and green image is a vital productive as well as marketing asset.

The threat of global warming is most obvious for key natural visitor attractions such as the Great Barrier Reef, Kakadu, and the Australian Alps.

Compared to sectors like coal mines or agriculture, tourism bears more exposure due to enduring commercial damage, as destination reputation takes longer to recover from natural disasters like the recent flooding and cyclone in Queensland than the next crop or disruption to mines.

Australian tourism businesses also face major costs of mitigating risks such as sea level rises or more extreme weather, with a report commissioned by the Intergovernmental Panel on Climate Change, due out later this year, supporting previous findings that global warming is contributing to the increasing frequency and intensity of natural disasters around the world.

There is a major additional risk to Australian tourism from potential consumer boycotts by environmentalists of long-haul travel and misguided policies of other governments. European travellers provide around 40 per cent of the export value of leisure visitors to Australia. This export contribution of more than \$5 billion per annum to the Australian economy is at risk from European environmentalists lobbying against long-haul travel. Similarly, some European governments such as the UK have aggressively targeted long haul aviation for punitive taxes, out of proportion to its greenhouse gas contribution. A focus by environmentalists against long-haul aviation ignores that only around two to three per cent of global greenhouse gas emissions are due to aviation and less than one per cent due to long-haul aviation.

Australia's ranking as the number one emitter on a per capita basis among developed countries further exposes Australian tourism (and agriculture) to growing risks of overseas consumer boycotts.

Finally, tourism and travel businesses in Australia face the risk of inaccurate and alarmist political commentary on the effect of the carbon tax on costs for, and sales by, our industry. If some consumers believe that prices of domestic tourism will increase very strongly in response to the carbon tax, outbound tourism will be even stronger and the loss of Australian jobs greater.

### **The contribution of tourism and travel to Australia's greenhouse gas emissions**

A useful starting point for considering the role of tourism and travel in generating greenhouse gas emissions is to recognise the contribution of travellers to Australia's population. On average visitors staying overnight in Australia from overseas and elsewhere in Australia represent six per cent of the total nights in a year of the Australian resident population. However the distribution of the traveller



population is highly uneven, with visitors in inner city areas and high-profile regional tourism destinations being a much higher estimated share of total resident populations.

**Table 1: Tourists as a share of resident populations in Australian regions**

<b>Visitors as a share of resident populations by Australian regions in 2009-10</b>					
	International Visitor nights	Domestic Visitor nights (000)	TOTAL Visitor NIGHTS	Estimated Resident Population (000)	Visitors share of nights by residents
	YE June 2010	YE June 2010			
<b>New South Wales</b>	<b>63,240,877</b>	<b>76,966,000</b>	<b>140,206,877</b>	<b>7,134,421</b>	<b>5%</b>
Sydney	53,245,927	19,266,000	72,511,927	4,504,469	4%
Sydney (C) - Inner	24,530,130	8,770,000	33,300,130	350,380	26%
Snowy Mountains	126,021	2,278,000	2,404,021	21,092	31%
Hunter	1,956,793	5,525,000	7,481,793	644,279	3%
Blue Mountains	280,386	1,484,000	1,764,386	77,784	6%
<b>Victoria</b>	<b>40,950,401</b>	<b>50,255,000</b>	<b>91,205,401</b>	<b>5,443,228</b>	<b>5%</b>
Melbourne	36,127,459	18,233,000	54,360,459	3,995,537	4%
Melbourne (C) - Inner	12,072,905	10,304,000	22,376,905	317,627	19%
<b>Queensland</b>	<b>39,010,663</b>	<b>70,814,000</b>	<b>109,824,663</b>	<b>4,425,103</b>	<b>7%</b>
Gold Coast	8,053,738	13,898,000	21,951,738	515,157	12%
Brisbane	15,813,902	13,639,000	29,452,902	2,004,262	4%
City - Remainder (Brisbane)	7,011,085	6,078,000	13,089,085	94,883	38%
Sunshine Coast	2,496,447	10,602,000	13,098,447	323,423	11%
Tropical North Queensland	6,090,725	8,657,000	14,747,725	269,650	15%
<b>South Australia</b>	<b>8,196,201</b>	<b>18,082,000</b>	<b>26,278,201</b>	<b>1,623,590</b>	<b>4%</b>
Adelaide	7,067,687	7,727,000	14,794,687	1,187,466	3%
Adelaide (C)	3,910,469	4,691,000	8,601,469	19,444	121%
Flinders Ranges	104,127	1,368,000	1,472,127	20,543	20%
Kangaroo Island	105,946	375,000	480,946	4,612	29%
<b>Western Australia</b>	<b>21,079,208</b>	<b>21,997,000</b>	<b>43,076,208</b>	<b>2,245,057</b>	<b>5%</b>
Perth region	16,745,379	9,042,000	25,787,379	1,658,992	4%
<b>Tasmania</b>	<b>2,669,178</b>	<b>8,739,000</b>	<b>11,408,178</b>	<b>503,292</b>	<b>6%</b>
Greater Hobart	1,594,055	3,171,000	4,765,055	212,019	6%
<b>Northern Territory</b>	<b>3,940,411</b>	<b>6,365,000</b>	<b>10,305,411</b>	<b>225,938</b>	<b>12%</b>
Darwin	1,937,647	3,413,000	5,350,647	75,908	19%
Petermann	488,405	556,000	1,044,405	1,205	237%
Alice Springs	968,282	1,015,000	1,983,282	27,877	19%
<b>Australian Capital Territory</b>	<b>3,051,124</b>	<b>5,443,000</b>	<b>8,494,124</b>	<b>352,189</b>	<b>7%</b>
<b>AUSTRALIA</b>	<b>182,138,063</b>	<b>258,661,000</b>	<b>440,799,063</b>	<b>21,952,818</b>	<b>6%</b>

Sources: Tourism Research Australia, IVS and NVS and ABS regional population estimates

Other than a higher requirement for transport, like the Australian resident population, there is a diverse range of direct and indirect greenhouse gas emissions due to the demands of overnight visitors within Australia.

The former Sustainable Tourism Co-operative Research Centre (STCRC) has led research into the contribution of Australian tourism and travel to greenhouse gas emissions, ensuring that Australia has a more accurate view of this issue than most other countries. In 2008, the STCRC published "The Carbon Footprint of Australian Tourism" which utilised Tourism Satellite Account data, the Monash Multi-Regional Forecasting model-Green database, the Bureau of Transport and Regional Economics database and the Department of Climate Change estimates of industry and household greenhouse gas emissions. The resulting estimates were for 2003-04, which was the latest year for which detailed industry greenhouse gas emission data were available.<sup>1</sup>

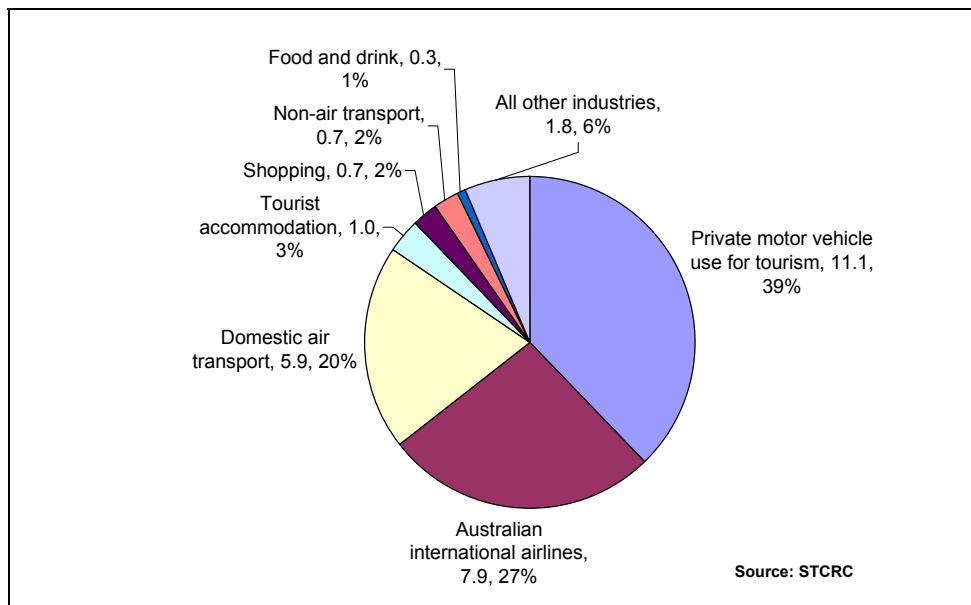
Total greenhouse gas emissions arise from both direct emissions by the businesses interacting with the travellers and indirect emissions due to the inputs used in sales of these businesses to the travellers. Examples of direct emissions are diesel used by a boat on a reef trip or domestic airline

<sup>1</sup> Forsyth, P. Hoque, S. Dwyer, L. Spurr, R. Van Ho, T. and Pambudi, D. (2008), 'The Carbon Footprint of Australian Tourism', the Centre for Economics and Policy for the Sustainable Tourism Co-operative Research Centre. The pie charts in this section use a consumption oriented concept of tourism contribution to greenhouse gases, as it includes an estimate of direct greenhouse gas emissions due to international airlines bringing foreign visitors to Australia. If instead a production focus had been taken, only the carriage by Australian international airlines of both inbound and outbound travellers would have been included (4.7 million tonnes versus 7.9 million tonnes).

fuel needs. Examples of indirect emissions are electricity from a coal-fired power station used by a hotel to run air conditioning or energy used to refine sugar as used in food and beverages consumed by tourists.

Direct greenhouse gas emissions in 2003-04 due to tourism summed to 29.5 million tonnes. Of this total, the largest share of 11.1 million tonnes, or 39 per cent, was due to private motor vehicle use for tourism. This represented one quarter of the total greenhouse gas emissions related to residential transport.

**Figure 1: Direct greenhouse gas emissions due to Australian tourism in 2003-04 (million tonnes)**



It is expected that international aviation will remain outside the Australian Government’s carbon pricing rules in both the short and long term as this sector requires a global mechanism for reducing emissions. International aviation was similarly excluded from the Kyoto accounting rules.

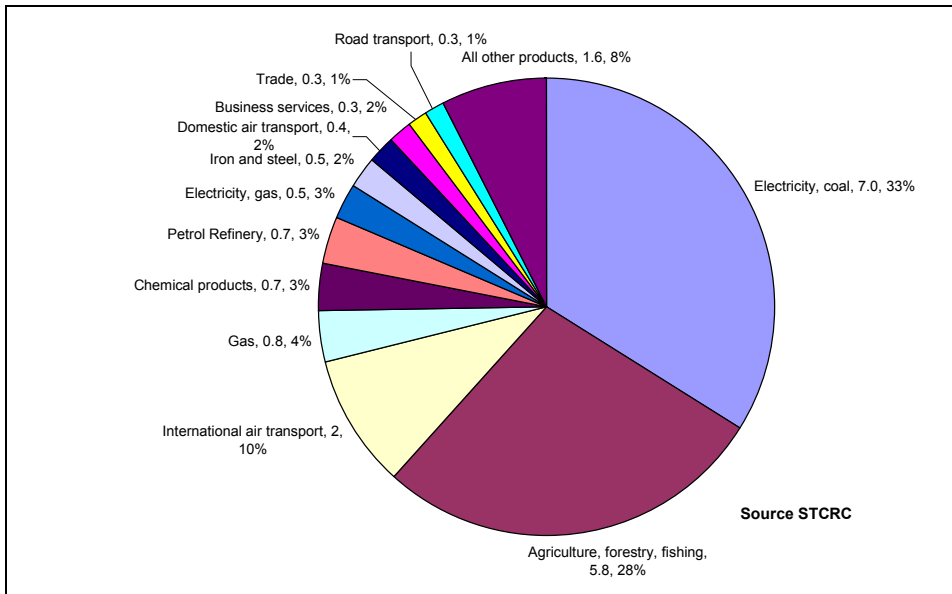
Excluding international aviation, direct greenhouse gas emissions due to Australian tourism in 2003-4 at 21.6 million tonnes represented 3.9 per cent of total direct emissions from Australian industries, including residential transport. In 2003-4, tourism, according to the ABS Tourism Satellite Account, was directly responsible for 3.9 per cent of gross domestic product and 5.6 per cent of total employment.

Direct greenhouse gas emissions from electricity and gas supply were estimated at nine times the direct emissions due to Australian tourism in 2003-04. Similarly, the direct greenhouse gas emissions from agriculture, forestry and fishing were estimated at six times the direct emissions due to Australian tourism in 2003-04.

It is expected that in the transition phase in introducing a carbon tax petrol prices will not be affected. In the longer term, it is expected that petrol for private vehicles will be subject to carbon pricing.

Indirect greenhouse gas emissions due to sales to tourists in Australia in 2003-04 summed to 20.8 million tonnes. Given the focus of the proposed carbon tax on domestic production, this calculation ignores the additional 12.5 million tonnes of greenhouse gas emissions due to sales of imported goods to tourists in Australia and the emission cost of importing these goods.

**Figure 2: Indirect greenhouse gas emissions due to tourism in 2003-04 (million tonnes)**



Indirect greenhouse gas emissions produced in burning coal for electricity used by the tourism industry are similar in scale to the direct emissions burnt by international airlines transporting inbound tourists to Australia. Additionally, indirect greenhouse gas emissions produced in the agriculture, forestry and fishing industry for products sold by the tourism industry are similar to the direct greenhouse gas emissions from domestic airlines. All four of these sources of emissions from tourism are far smaller than the emissions from private motor vehicles when used for tourism purposes.

In total, there were an estimated 50.3 million tonnes of greenhouse gas emissions with direct and indirect emissions related to tourist purchases in Australia in 2003-04. If we exclude direct and indirect international aviation emissions for bringing international tourists to Australia (9.9 million tonnes), and indirect emissions from agriculture, forestry and fishing (5.8 million tonnes) this leaves 34.6 million tonnes. If we also exclude direct emissions due to fuel used by private vehicles for tourism use (11.1 million tonnes) this leaves 23.5 million tonnes.

## **Carbon tax – more costs for Australian tourism & travel at a bad time**

The expected shielding of emissions-intensive, trade-exposed (EITE) sectors in the transition period will increase the relative costs for medium-emission, trade-exposed sectors, of which tourism and travel is far and away the largest employer.

After the transition period, when EITE sectors have to face their full emission costs, it is possible that tourism and travel will be less harshly treated, as the exchange rate may adjust to the falling competitiveness of EITE sectors.

### **More costs for tourism and travel**

If, in the first stage of carbon pricing in Australia, fuel for private vehicle use is excluded, as are the emissions of the agriculture, forestry and fishing sector, this leaves an estimated 23.5 million tonnes of greenhouse gas emissions due to tourism subject to the carbon tax. Assuming a carbon tax rate of \$25 per tonne, this equates to additional costs for the tourism and travel sector of \$588 million per annum. Allowing for some growth in tourist activity since 2003-04 suggests additional costs for sales to tourists of just over \$600 million per annum in 2012-13.

Beyond the initial transitional stage of carbon pricing, it is expected that fuel for private vehicle use will be subject to carbon pricing. In 2003-04, the tourism use of private vehicles produced 11.1 million tonnes. Assuming a \$25 per tonne carbon price, this implies an increase in the annual cost of carbon pricing on sales to tourists to around \$865 million per annum.

### **A bad time for more costs for the tourism and travel sector**

The tourism and travel sector currently faces two major challenges. The first is the high value of the A\$. This is impacting on both international visitation to Australia and encouraging more Australians to go outbound rather than travel domestically.

Outbound travel is currently growing at around 12 per cent per annum, while inbound travel is growing at three per cent. In 2010, for every dollar spent on domestic overnight tourism, Australians spent nearly 75 cents on outbound tourism. The rapid growth in outbound tourism in the last decade has meant that Australia now runs a significant deficit on the balance of trade in tourism.

The second challenge is increasing fuel costs. Rising oil prices are leading to a return to very high fuel surcharges by international airlines that influence demand most heavily against long-haul destinations. Over time, we can expect that Australia's growth in international seat capacity will slow compared to other countries as foreign carriers switch capacity to less fuel-cost-affected, medium-haul routes. Increased petrol prices also impinge on regional touring, which is a mainstay of many regional tourism destinations.

An implication of these challenges is that profit margins for most tourism businesses in Australia are at low levels. This implies a limited capacity to absorb additional costs from carbon tax without cutting employment.

Of Australia's trade-exposed sectors, tourism and travel is the second largest employer (after manufacturing). Whereas the steel industry has been highly vocal about the carbon tax and faces a larger impost as a share of revenues (though being set to gain generous transitional assistance), tourism and travel provides 20 times more jobs. Other commodity-based export sectors are currently enjoying record commodity prices that insulate them from major damage from the carbon tax.

In the transition period with the introduction of the carbon tax, tourism and travel will face a rapid demand response. Most tourism and travel companies, being in highly competitive sectors have a low capacity to absorb the cost increases so prices will rise comparatively quickly. The resulting relative price changes will be acted on rapidly by Australian and potential overseas consumers. Compared to other trade-exposed sectors that commonly have longer-term contracts, tourism and travel employment will be an early casualty of the carbon tax. It takes far longer to move an aluminium smelter than for a lot of travellers to change their intended destination.

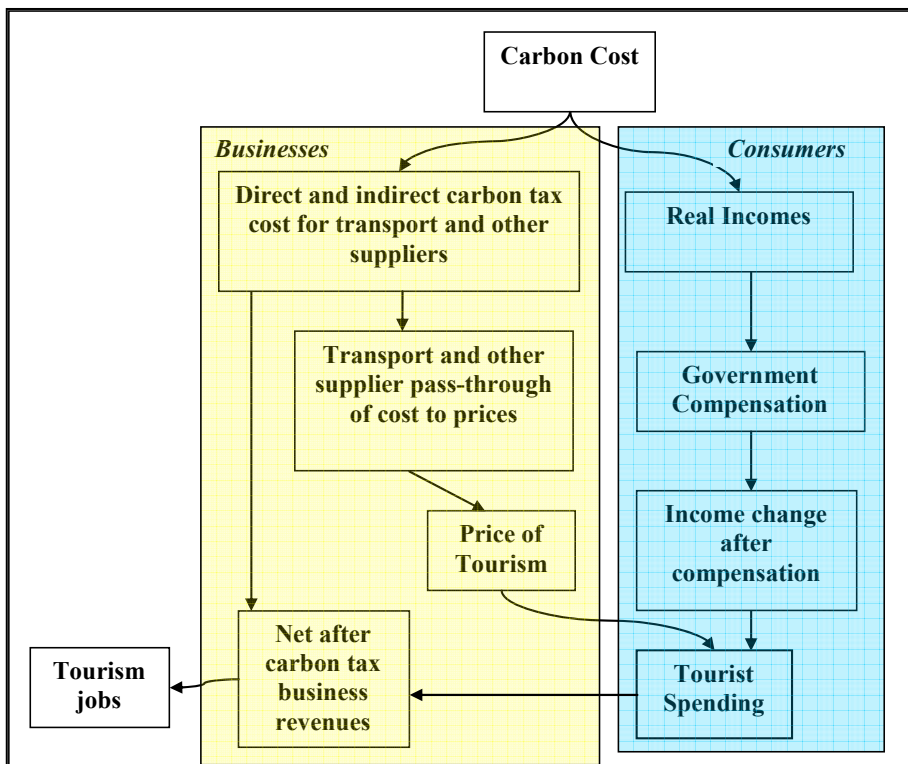
**What is the impact of the expected carbon tax on tourism spending in Australia?**

TTF commissioned Dr Tony Webber, the former Chief Economist at Qantas Group, to provide estimates of the impact of the potential carbon tax on:

- inbound international tourism to Australia;
- domestic overnight tourism; domestic day trip; and
- outbound Australian tourism.

This section draws on a more detailed report to TTF from Dr Webber.<sup>2</sup> Figure 3 indicates that a carbon cost has both a price and income (or indirect) effect. The price effect is through both transport and other tourism and travel suppliers when the cost of carbon is ‘passed-through’, at least in part, to higher prices. Dr Webber modelled the expected pass through of the carbon tax into higher prices for tourism and travel. In response to a higher price of tourism, there is a reduction in the consumption of tourism in line with price elasticity of demand estimated by Dr Webber. For domestic overnight tourism - as outbound tourism is carbon tax-free - there is substitution of outbound for domestic overnight tourism.

**Figure 3: How the expected carbon tax will impact on Australian tourism spending and jobs**



Source: Webber Quantitative Consulting (2011) for TTF.

<sup>2</sup> Dr Tony Webber is now the Managing Director of Webber Quantitative Consulting, having worked previously at Qantas for almost seven years and Network Economics Consulting Group (later to be called Concept Economics) for two years. This report is confidential at this stage.

The consumer income (or indirect) effect says that the carbon cost reduces real income levels in Australia because Australians now pay higher prices for a number of goods, the production of which requires the production of greenhouse gas emissions. For example, Australians will pay higher prices for electricity and road transport. As these goods are typically demanded inelastically, meaning that demand for these goods falls by proportionately less than the price increase (that caused it), then spending on these goods rises as their prices increase. If spending increases on these goods then, for a given level of nominal income and savings or wealth, the consumer will reduce consumption of all other goods. The component of all other goods that is affected most is the discretionary component. Leisure travel is likely to be high on the list of discretionary goods most impacted by the reduced consumption of all other goods.

### How will household compensation affect the tourism and travel industries?

In estimating the income effect, Dr Webber allowed for full compensation for the impact on household incomes of the carbon tax for households with incomes of less than \$150,000. Data from Tourism Research Australia indicates that around 66 per cent of domestic overnight tourism spending is from individuals in households with incomes below \$150,000, while 60 per cent of outbound tourism spending is from Australians in households with incomes below \$150,000. The provision by the government of compensation for these households is assumed to eliminate the income effect when assessing their domestic travel demand under the carbon tax. However, household compensation implies a positive income effect for outbound travel, further increasing the growth in outbound tourism due to the shift in relative prices in favour of outbound over domestic overnight tourism.

For households with incomes above \$150,000, it is recognised that a much lower share of total income will be spent paying for the carbon tax than for less wealthy households. This reflects that the carbon tax will have its major impact on the price of necessities like power and transport.

Dr Webber calculated the impact of the carbon tax on tourism spending for two scenarios. The first is with petrol and agriculture excluded from the carbon tax, to reflect the expected first stage of carbon pricing in Australia. The second is with petrol included in carbon pricing but agriculture still excluded, to reflect the second stage of carbon pricing in Australia.

Table 2 shows the estimated impacts on international inbound, domestic overnight and domestic day trip expenditure from the carbon tax for an assumed \$25 per tonne tax, in the absence of compensation to households.

**Table 2: Change in total tourist spending including carbon tax for key forms of tourism and travel**

	Without carbon tax on petrol	With carbon tax on petrol
	(\$millions)	
International inbound	-\$377	-\$457
Domestic overnight	-\$223	-\$338
Domestic day trip	-\$205	-\$278
Total Australian tourism & travel	-\$805	-\$1073
Outbound	+\$135	+\$266

Compensation for households with incomes less than \$150,000 provides partial offsetting benefits for domestic tourism, further encourages outbound tourism, but has no effect on inbound tourism. After allowing for the impact of compensation for households, Table 3 shows the net impact on revenues for tourism and travel businesses, prior to considering how much their costs increase due to the impact of

the carbon tax on their direct and indirect costs. Obviously, if household compensation is reduced by cutting the incomes at which it expires, or exhausts on a sliding scale, the impacts on the tourism and travel industry would be noticeably greater than shown in Table 3.

**Table 3: Net change in total tourist spending (including carbon tax) due to the combination of carbon tax and household compensation**

	Without carbon tax on petrol	With carbon tax on petrol
	(\$millions)	
International inbound	-\$377	-\$457
Domestic overnight	+\$222	+\$176
Domestic day trip	+\$24	-\$20
Total Australian tourism & travel	-\$131	-\$291
Outbound	+\$372	+\$719

In addition to the impacts on total tourist spending or business revenues, the tourism industry faces increased costs from the carbon tax which reduce its net revenue and ability to employ Australians and pay returns to owners. While domestic tourism spending is predicted to increase slightly under the expected carbon tax with household compensation, international inbound tourist spending falls by a greater amount. In addition, the businesses receiving these revenues also face cost increases of around four times the loss of net revenue.

The increased costs for the Australian tourism and travel industry include both direct and indirect costs and are estimated as:

- Carbon tax impacts on costs for tourism businesses from the tax on direct and indirect emissions excluding petrol of \$600 million; and
- Carbon tax impacts on costs for tourism businesses from the tax on direct and indirect emissions including petrol of \$865 million.

The net revenue loss for Australian tourism businesses after the imposition of the carbon tax is \$731 million if petrol is not taxed. This corresponds to 0.7% of the \$100 billion in total tourist consumption in Australia in 2009-10 estimated by the ABS in the Tourism Satellite Account. While this impact to net business revenues might sound small, it is significant in a low margin and labour intensive industry. Half (49%) of the overall fall in net revenue if petrol is not taxed occurs from regional-derived net revenue.

The net revenue loss for Australian tourism businesses after the imposition of the carbon tax is \$1,156 million once petrol is taxed. This corresponds to 1.2% of the \$100 billion in total tourist consumption in Australia in 2009-10 estimated by the ABS in the Tourism Satellite Account. If petrol is taxed, more than half the overall fall in net revenue will be in regional areas.

Outbound tourism is the big winner from the imposition of a carbon tax and payment of compensation to most households. With the carbon tax applying to petrol and correspondingly higher household compensation, spending on outbound tourism is predicted to increase by \$719 million, which is equivalent to a 2.6 per cent lift of outbound spending in 2009-10.

### **What is the impact of the expected carbon tax on Australian tourism jobs?**

Assessing the jobs impact of the carbon tax on employment due to changes in tourism spending is complicated by uncertainties around the estimation of inter-industry effects, as it is as not yet known how other industries will be partially shielded from the carbon tax.

This makes general equilibrium modelling of the impact of the carbon tax highly uncertain. For example, the government has indicated that EITE industries will be at least partially protected from the full impact of the carbon tax. As a result, the value of the Australian dollar is not expected to be much affected by the imposition of the carbon tax, at least in the short to medium term.

TTF has elected to take a simpler approach to estimating the jobs impact of changes in net tourist spending after allowing for the impact of the tax on tourist spending and the costs faced by tourism and travel businesses. TTF recognises that the current environment facing the Australian tourism industry, with a very high A\$ and fuel prices, implies that tourism employment will be more sensitive to changes in tourism spending than would be the case in more normal times.

The net impact expected for tourism operators is a loss of between 0.7 per cent and 1.2 per cent as a share of total sales revenue. However, owing to low margins in tourism businesses, this reduction in net revenues has a multiplier impact on net profits. With average gross operating surplus at 12 per cent of gross revenues (2006-07, ABS), the carbon tax threatens to reduce industry net profits by up to 10 per cent. This will see some businesses close their doors, while others will reduce costs by cutting staff, marketing initiatives, or other expenses. We estimate this will lead to job losses of between 3,600 and 6,400.

### **Proposed assistance for the heavily trade exposed tourism and travel industry**

TTF considered a wide range of possible mechanisms for transitional assistance to the tourism industry to help reduce the impacts on employment from the carbon tax, while preserving the incentives from this tax for the industry to reduce its emissions.

Given the greater risks to regional tourism employment, TTF concluded that the following three measures would be the most cost effective for the government in reducing job losses in tourism and travel.

#### **Recommendation 1**

The current GST-free status for international airfares to Australia and business event package travel to Australia from overseas should be extended to the accommodation and tour components of leisure travel packages.

This recommendation should reduce the net price impact of the carbon tax on the most price sensitive international inbound travellers to Australia - leisure package visitors. Without this reform, these visitors are less likely to travel to regional destinations such as the Great Barrier Reef, Uluru, Tasmania or Kangaroo Island, as prices for Australian ground content and domestic airfares increase.

International visitors to Australian business events such as conferences/conventions are able to buy GST-free packages to Australia.

Just under 20 per cent of leisure visitors to Australia package their international airfare with Australian ground content such as accommodation and tours. By making the non-internationally



purchased airfare component of this package also GST-free, the total saving to these international tourists would be around \$43 million per annum.<sup>3</sup>

## **Recommendation 2**

An additional \$25 million per annum should be provided to Tourism Australia to be spent on domestic tourism marketing. In addition, increased funding of \$10 million per annum should be provided to Tourism Australia to increase marketing of Australia in key inbound source markets.

A risk of the proposed carbon tax is that it will increase greenhouse gas emissions from Australian tourism, due to increased substitution of domestic by outbound tourism. Increased domestic tourism marketing should reduce the resulting risk. Increased funding of Tourism Australia for domestic and inbound tourism marketing promises to reduce tourism job losses in regional Australia.

The total cost of these three measures is estimated at \$93 million per annum or less than a sixth of the estimated \$600 million cost impost of the carbon tax to the tourism and travel industry in its initial phase.

## **Recommendation 3**

The government should urgently reform air traffic management at Australian airports to reduce fuel burn and emissions by airlines. New GPS-based technologies in partnership with continuous descent approaches will reduce airline costs and emissions, cut noise for nearby residents and improve the safety of airline operations. The carbon tax makes this reform more urgent.

Domestic airlines will be the most heavily impacted sector of tourism and travel in the introductory period of the expected carbon tax, especially if petrol is excluded, as this will influence mode choice for passengers and freight in favour of land-based and often more emission-intensive travel.

Progress in the implementation of modern air traffic management has been too slow and timid. While airlines won't get 100 per cent of the technically available fuel savings, owing to policies to continue noise sharing under existing arrangements, they will receive major savings. Local residents affected by aircraft noise will be the other major beneficiaries of this reform, as will the community from improved air safety. Continuous descent approaches offer noise savings of around 50 per cent on aircraft landings compared to current practices. GPS-based separation of aircraft can also guarantee more effective noise sharing and more respite periods, by distributing individual aircraft tracks within the flight path associated with a mode of runway operation. To ensure the noise outcome improves for local residents, a much more rigorous system of ground-based aircraft noise monitoring should be implemented as part of this reform.

In addition to the noise savings, modernising air traffic management offers a quantum leap in the safety of the system by ensuring much more accuracy in separating aircraft in the skies over major cities. This represents a second major benefit for the residents living close to airports.

Implementing this measure would not only offset much of the cost impost on domestic airlines of the carbon tax, but also lead to much larger emission reductions for the airline sector than promised by the carbon tax alone.

To fast track this reform, supplementary funding of at least \$15 million should be provided for the next three years to the transport portfolio to expedite community consultations and introduce ground-based noise monitoring and amend air traffic management practices.

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<sup>3</sup> The estimated \$43 million per annum benefit to travelers and cost to government, is based on spending on pre-paid packages by international leisure package visitors to Australia in 2010 from Tourism Research Australia's International Visitor Survey, assuming that 80 per cent of the cost of the packages is international airfares and included domestic airfares that are already GST free.

The net impact of these transitional assistance measures is to significantly reduce expected job losses in tourism and travel, especially in regional areas. These measures also promise to further reduce the net greenhouse gas emissions due to Australian tourism that would arise from the carbon tax without transitional assistance.

## **Complementary policies to make the Australian Government response to global warming better for the environment**

From the government's perspective, well designed complementary measures to a carbon tax offer faster and more cost effective reductions in greenhouse gas emissions than are possible with the carbon tax on its own. A carbon tax, unlike a carbon trading system, does not mandate a particular level of emission reduction, so a carbon tax with complementary measures can reduce emissions far faster than a carbon tax alone.

For example, research and development that delivers major initiatives like sustainable jet fuel offer large potential increases in greenhouse gas emission reductions. Given Australia's heavy reliance on long-haul airline travel, Australia has a strong national interest in leading global research and development of sustainable jet fuels, much as it has a strong interest in carbon capture and storage for coal-fired power stations. Government support for this R&D can overcome major market failures, including free rider problems that bedevil public interest research and development.

From the tourism industry's perspective, well designed complementary measures to a carbon tax offer enhanced cost competitiveness over time for Australia's tourism and travel industry, as the price of greenhouse gas emissions is expected to increase progressively in coming decades. With effective complementary measures, the tourism and travel industry in Australia could go from a medium-emission, trade-exposed sector to a low-emission, trade-exposed sector – setting it up for faster, sustainable, long-term growth.

This submission advocates the following complementary measures for government support, as important aspects of introducing a carbon tax:

1. Tax Breaks for Green Buildings Scheme
2. Depreciation of buildings and building plant and equipment such as air conditioning systems
3. Sustainable jet and other bio-fuels
4. Aircraft depreciation
5. Better treatment for public transport against petrol used in private vehicles under a carbon tax

### **1. Tax Breaks for Green Buildings**

TTF was disappointed to see the Tax Breaks for Green Buildings Scheme deferred for a year after extensive industry consultation. Hotel building modifications have a long lead and delivery time. To make greenhouse gas emission reductions to existing buildings in the medium term, the industry needs this tax break as soon as possible. Ideally, this program would have been in place well before a carbon tax is implemented.

Data from NABERS indicate that hotels use approximately double the energy on a per square metre basis than commercial buildings. This highlights the need for this tax program to have a strong focus on improving energy efficiency of hotels.

In most cases, hotels have a separate owner, management company and end user (i.e. hotel guest). This represents a more complex decision-making chain over energy use and energy saving investment than arises with commercial buildings where there is commonly an owner and a tenant. Hotels, with many sub-divided spaces, have additional costs in air conditioning and insulation compared to commercial buildings with their common open-plan designs.

Hotels, with their more common use of heritage buildings, have further challenges in making building modifications to improve energy efficiency. Many hotels using heritage buildings cannot practically increase energy efficiency to above a 4 star NABERS rating.

#### **Recommendation 4**

The Australian Government should as soon as possible confirm the following details of the Tax Breaks for Green Buildings Scheme:

- Hotels should receive quarantined funding within this program, so that hotel applicants only compete against other hotel applicants;
- Funding under the program should not require a move from NABERS rating 2 to NABERS rating 4, but rather be competitively assessed on the basis of actual reduction in CO2 emissions per room as assessed by NABERS; and
- Reflecting the higher greenhouse gas emissions from hotels than commercial buildings per square metre, hotels should be a priority for funding under this program and criteria for qualifying for this scheme should be drawn up to recognise the features of the hotel sector.

## **2. Depreciation of buildings and building plant and equipment such as air conditioning systems**

In practice, many tourist accommodation properties will not qualify for the Tax Breaks for Green Buildings Scheme despite their potential to make investments that provide worthwhile greenhouse gas emission savings.

As around 30% of total greenhouse emissions in Australia come from buildings, it is important that building owners invest in more energy efficient buildings and lower emission plant and equipment.

The introduction of a carbon tax will reduce the true effective lives of existing, less efficient buildings and the plant and equipment in buildings. It is important that the tax depreciation scales meant to reflect effective lives of these assets are adjusted to reflect this change. The last reviews of effective lives of air conditioners and lifts for tax purposes were in 2003. For tax purposes, hotel buildings have an effective life of 25 years, air conditioners 15 years and lifts 30 years.

Complicating this issue is the common separation of building ownership and management. For example, air conditioning is a major capital expense for the owners of tourism buildings. The power consumed by these air conditioners is a major expense for the operators of these buildings. A carbon tax will increase costs for operators, but not directly change the incentives facing building owners to invest in more emission-friendly air conditioning systems.

The previously proposed Tax Break for Green Buildings Scheme was very restricted in its assistance given that it requires a very large improvement in emission performance of the whole building.

Wholesale renovation of building emission performance will be rare compared to the opportunity to make meaningful emission reductions by replacing individual items of plant and equipment.

#### **Recommendation 5**

The Australian Government should as soon as possible amend the ATO tax depreciation for tourist accommodation buildings and building plant and equipment:

- The effective life for new buildings used for tourist accommodation that achieve a 4 star or above NABERS rating should be 15 years rather than 25 years as currently;
- Installation of new and replacement heavy energy consuming plant and equipment into tourist accommodation buildings (including air conditioning systems, lift systems, swimming pools and kitchens) that achieve a high energy-efficiency rating should receive a 50 per cent depreciation bonus in the first year that operates in parallel with the existing effective life schedule.

### **3. Sustainable jet fuel and other bio-fuels**

Fuel is the biggest single operating cost for the aviation industry and petrol used in tourists' own vehicles is the largest source of greenhouse gas emissions from the Australian tourism and travel industry.

There have been accelerating technology advances in producing sustainable jet fuel over the last three years. Fast-increasing world oil prices in the last six months are leading to growing private sector interest in developing bio-fuels. However, particularly in the area of aviation bio-fuels, Australian Government support will be necessary to foster research and development to gain large emission savings.

The largest single opportunity for significantly reducing greenhouse gas emissions from the aviation sector is the use of sustainable aviation fuels (SAF) derived from biomass (crops, plants, trees, algae and other organic matter). Australia is strongly positioned to incorporate sustainable aviation fuel into the aviation fuel mix. The scale of potential biomass production in Australia is well matched to the aviation fuel industry's needs, while domestic oil supplies are on the decline. However there are no significant supplies of SAF anywhere in the world at this time. Establishing a local commercially viable supply chain is the major challenge to be addressed.

Ongoing fuel tests, demonstration flights and proven refining technology have given the aviation industry confidence that bio-derived jet fuel blends can be created to meet the industry's stringent safety and technical fuel standards. Two classes of bio-derived jet fuels have already been certified for commercial airline use, with the second covering most biomass sources.

The aviation industry will have to compete with other industries for biomass feedstocks. Other transport modes, electricity generation and high-value product industries such as cosmetics will also be seeking to substitute some biomass derived outputs for their current fossil fuel inputs.

In particular, road bio-fuels are generally less expensive to produce than bio-derived jet fuels and receive higher per unit revenue (in part due to higher Australian government taxation on road fuels), making them a more likely target for market-led sustainable fuel supply, at least in the short term. In addition, there are existing programs to support ethanol development and delivery for surface transport.

In the last two months, aircraft maker Boeing reported results of a two-year study that show significant potential for sustainable aviation fuel based on jatropha-curcas, an oil-producing, non-edible plant. This Yale University study reveals that jatropha can deliver strong environmental benefits and greenhouse gas reductions of up to 60% when compared to petroleum-based jet fuel when planted on already cleared land.

Qantas has announced partnerships with two bio-technology companies to investigate production of jet fuel this year. Qantas has joined Solena to investigate using urban rubbish to create jet fuel, following a similar investment by British Airways in London. Qantas has also joined Solazyme to investigate using sugar cane or other plants to produce jet fuel. Both ventures will take two to three years to plan and construct facilities. As an early goal, Qantas anticipates replacing two to three per cent of its current jet fuel needs with sustainable jet fuel by 2015.

From a national interest perspective, a highly attractive opportunity exists for using the carbon dioxide released by coal-fired power stations to grow algae to produce bio-fuels. This could become a most commercially attractive form of carbon capture and storage.

Australian Government support of research and (particularly) development costs will be critical to achieving as rapid as possible an introduction of sustainable jet fuel.

Not only are Australian conditions extremely favourable for the cultivation of feedstock, such as algae, but Australia is also well placed to become a production base for much of Asia. A domestic bio-fuel industry could therefore see Australia turn from being an importer to a major exporter of aviation fuel, and would be vital to help Australian airlines manage their domestic and international carbon price risks.

This is a non-competitive issue for airlines and all Australian carriers are co-operating to help enable a sustainable bio-fuels industry. Industry will, however, struggle to achieve commercialisation on its own, as the Australian aviation market is relatively small and there is a need to bring many disparate players in a value chain together (eg. agriculture, airports, financiers, refiners, and airlines). Realising the full benefit of bio-fuel is therefore dependent on investment and support from the Commonwealth Government.

#### **Recommendation 6**

The Australian Government should urgently review with the Sustainable Aviation Fuel Users Group (that includes Qantas, Virgin Blue, Air NZ and Boeing Australia) policy options for fast-tracking support for research and development of sustainable aviation jet fuel. Much of the revenue from the carbon tax on domestic airlines (around \$250 million per annum) should be invested into research and development of sustainable aviation jet fuel. Support for aviation jet fuel research and development should be a key complementary policy announced during the process of parliament passing the carbon tax legislation.

#### **4. Aircraft depreciation**

The implementation of carbon tax will reduce the effective life of aircraft currently flying. Under ATO rules, the effective life for aircraft in Australia for tax purposes is 10 years, which is much greater than in major competing jurisdictions such as Singapore (three years). The longer effective life for tax encourages Australian airlines to hold aircraft longer and thereby produce greater greenhouse gas emissions compared to newer aircraft.

The introduction of the carbon tax will further spotlight the competitive disadvantage faced by Australian airlines due to much longer effective tax lives than in competing jurisdictions, as all airlines are pushed by carbon pricing to introduce more fuel efficient aircraft. A shift to a shorter effective life is a major incentive for Australian airlines that operate older aircraft fleets to more quickly introduce new generation aircraft which commonly offer a 15-25 per cent improvement in fuel efficiency per seat kilometre.

#### **Recommendation 7**

The Australian Government should reduce the effective life of aircraft for tax purposes as a complementary measure to the implementation of the carbon tax. Effective lives for aircraft for tax purposes should be reduced to three years.

### **5. Better treatment for public transport against petrol for private vehicles under a carbon tax**

In 2005, road transport accounted for 88 per cent of total transport emissions, with 62 per cent of this from passenger cars. Table 2 highlights the dominance of cars in emissions from the transport sector.

If Australia is to reduce transport-related greenhouse gas emissions, it is essential that more of the urban transport task is taken up by less polluting modes, such as public transport, rail freight, cycling and walking.

**Table 4: Emissions from the transport sector, 1990-2005 (Mt CO<sub>2</sub>-e)**

	1990	1995	2000	2005
Cars	35.2	37.7	41.3	44.0
Light Commercial Vehicles	7.5	8.4	9.5	11.1
Trucks & Buses	11.3	12.5	15.0	15.7
Motorcycles	0.2	0.2	0.2	0.2
TOTAL ROAD	54.3	58.9	65.9	71.1
Domestic Aviation	2.9	4.9	5.0	5.1
Domestic Shipping	3.0	2.8	2.4	2.4
Rail	1.7	1.6	1.6	2.1
Other	0.0	0.0	0.0	0.0
TOTAL TRANSPORT	62.1	68.2	74.9	80.8

In light of the scale of road transport emissions and the negative externalities attributed to urban traffic congestion (\$12.9 billion in 2011), the impacts of carbon tax on urban passenger transport mode choice must be considered carefully in implementing a carbon tax.

Furthermore, increased investment in urban public transport infrastructure will be essential to cope with the expected shift in consumer demand toward more environmentally efficient modes under an expected progressively increasing carbon price.

In order to promote a level playing field between public and private transport in the early years, compensatory measures should offset price impacts on public transport fares to an equal or greater extent than they do for private car use. The expected exemption of petrol from the carbon tax in the early years implies that public transport should receive at least similar treatment.

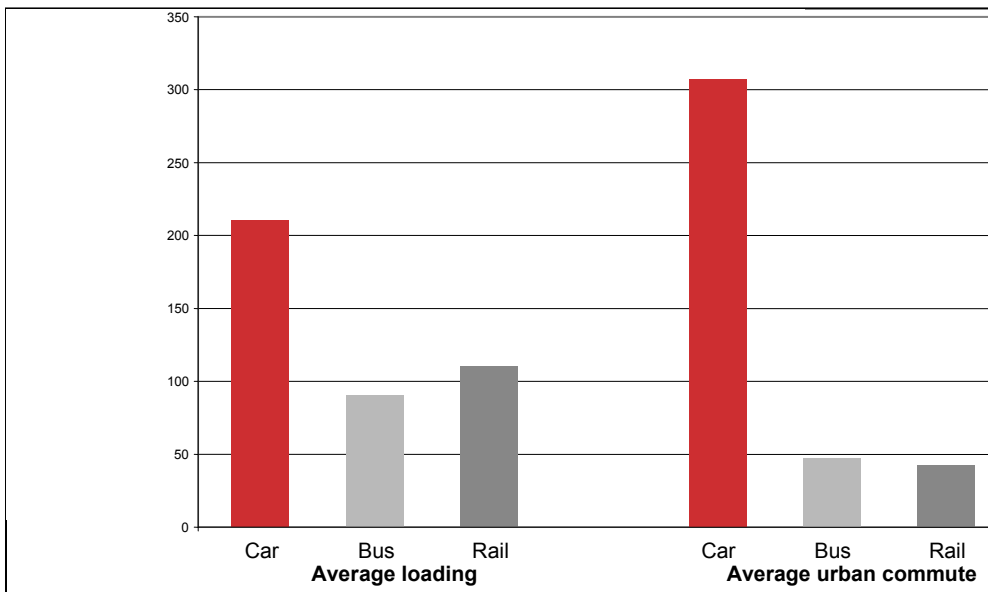
The design of the previously proposed CPRS, as detailed in Table 5, failed to recognise that the increasing use of public transport and rail freight are key greenhouse gas emission reduction opportunities.

**Table 5: Proposed CPRS Impact on Transport Modes**

Mode	Fuel Type	CPRS Impact
Car	Petrol/Diesel/LPG	Road users receive a fuel tax offset for three years.
	Diesel/Natural Gas	Heavy on-road transport business will receive a CPRS fuel credit payment for one year. The amount of the CPRS fuel credit will be equal to the fuel tax cut.
Ferry	Diesel	Increase in the price of diesel from the scheme's commencement.
Rail	Electricity	Increased electricity prices from the scheme's commencement.
Rail	Diesel	Increase in the price of diesel from the scheme's commencement.

Considering that bus and rail are approximately six times less emissions-intensive than cars for the average urban commute (see Figure 4), any household compensation measures that make private car use more economically viable than public transport would compromise the aim of reducing emissions.

**Figure 4: Emissions intensity of passenger modes, 2007 CO<sub>2</sub> emissions (grams) per passenger kilometre**



The package of measures around the carbon tax should include further incentives for public transport use. In addition, other measures to assist the public transport industry should include incentives for energy efficiency, research and development and accelerated asset depreciation rates.

**Recommendation 8**

The Australian Government should ensure:

- a. That the package of measures aimed at reducing greenhouse gas emissions that includes the carbon tax also includes further tax incentives for individuals to increase their public transport use by offsetting price impacts on public transport fares to an equal or greater extent than for private car use, and for businesses to increase rail freight use; and
- b. The public transport industry should receive increased incentives for energy efficiency, research and development and accelerated asset depreciation rates.

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