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Development of a National Aviation Policy Statement

The following comments are offered in relation to the Issues Paper (April 2008) and the development of a National Aviation Policy Statement.

1. The “growth forever” model for aviation and tourism, and its implications for climate change

Climate change is increasingly being considered as a global sustainability emergency (Spratt & Sutton, 2008). Serious climate change impacts are already happening, more rapidly and at lower global temperature increases than projected. Such impacts, spanning destructive weather patterns, imperilled coral reefs and declining food production for example, are increasingly reported in the popular press (Chartres, 2008; Wertheim, 2008).

Spratt and Sutton argue that the projected speed of climate change—with temperature increases greater than 0.3°C per decade, and a consequent rapid shifting of climatic zones—will result in most ecosystems failing to adapt, causing the extinction of many species. The oceans will become more acidic, endangering much marine life. Eminent climate scientists, such as Dr James Hansen from NASA, suggest that it is no longer a case of how much more humanity can ‘safely’ emit, but whether emissions can be stopped. It is necessary to produce a deliberate cooling before the earth’s climate system reaches a runaway trajectory that is beyond hope of human restoration.

With respect to air travel and air freight, the aviation and tourism industries and governments typically subscribe to a “growth forever” worldview where aviation is projected to grow at 4 or 5% per annum into the foreseeable future. Air travel growth has historically been highly correlated with GDP-growth, and in fact has grown even faster. Promoting greater mobility through, for example, lower fares and encouraging low-cost airlines are basic tenets of this approach. Such an approach is seen in the rising curves for aviation growth projected over time in airport master plans. For example, a recent Canberra Airport preliminary draft Master Plan projects increases in aircraft movements from 81,732 (2005/06) to between 136,209 and 180,551 in 2027/28. By 2050, a Practical Ultimate Capacity produced for the airport is based on 282,120 annual fixed wing aircraft movements, which is similar to Sydney’s current movements (Canberra International Airport, 2007). Likewise, the Issues Paper assumes continuing growth as a given. For example, it states: “the Government’s

aviation policies will promote the expansion of Australia's international aviation market and retain a strong Australian-based aviation industry. This facilitates growth in trade, tourism, and employment opportunities for Australians in the aviation and tourism industries" (Department of Infrastructure Transport Regional Development and Local Government, 2008, p. 2).

This business as usual growth framework is completely at odds with the need for the very large cuts in greenhouse emissions now required to prevent major damage to ecosystems and reaching tipping points leading to dangerous climate change. That is, it either ignores or considerably downplays a significant policy debate on the serious sustainability impacts of air transport that has emerged in recent years. The Issues Paper, for example, states that the aviation industry's contribution to greenhouse gas emissions "will probably increase" (Department of Infrastructure Transport Regional Development and Local Government, 2008, p. iv).

Recent work by the Tyndall Centre for Climate Change (Bows & Anderson, 2007) has quantified the aviation industry's carbon dioxide emissions in relation to the UK's total carbon budget. It highlights a fundamental contradiction between the UK Government's Energy White Paper targets for carbon dioxide emissions and the same government's desire to facilitate airport expansion. For the stabilisation level of 450 ppmv that has commonly been associated with reducing the risk of "dangerous climate change", the UK Government's projections for the aviation industry were found to account for between 50% and 112% of the UK's 2050 carbon budget. These estimates did not take into account the enhanced radiative forcing from aviation from emissions other than carbon dioxide, contrails and cirrus clouds. These are linked to a two to four times further warming impact than that from carbon dioxide alone (Penner, Lister, Griggs, Dokken, & McFarland, 1999), meaning that the Tyndall Centre's results are underestimates.

The same policy clash and contradiction between aviation and airport expansion on the one hand, and the need to markedly reduce greenhouse gas emissions on the other, has similarly been quantified for Australian aviation by the Australia Institute. One study addresses aviation nationally (Macintosh & Downie, 2007), and another addresses Canberra Airport's vision for growth vis-à-vis the ACT Government's Climate Change Strategy (Dobbin, 2008; Macintosh & Downie, 2008). In essence, the studies underline, both nationally and locally in the ACT, the disproportionate allocation of growing emissions from the aviation sector, which has very significant consequences for other carbon dioxide-emitting sectors of the economy.

The study on Canberra Airport (Macintosh & Downie, 2008) uses a conservative uplift factor of 1.7, as most estimates of aviation's contribution to climate change understate its importance by failing to take account of non-CO₂ emissions. However, the emission projections are deliberately conservative, being confined to passenger-related emissions. Freight, general aviation and military emissions are all excluded. The ACT Government's Climate Change Strategy aims by 2050 to reduce the Territory's emissions by 60% on 2000 levels. The main findings from the study suggest that aviation would amount to 9% of the ACT's emissions in 2025, and by 2050, they would constitute 216% of the ACT's target. That is, the airport's projected growth plans (which include a significant international component) provide a stark contrast with the ACT Government's climate change targets.

In Britain, the Royal Commission on Environmental Pollution (2002) has played a strong role in challenging the *status quo* position of the aviation industry with respect to the continuing expansion of aviation and airports. In a special report entitled *The Environmental Effects of Civil Aircraft in Flight*, it expresses deep concern about the global impacts of the rapid growth in air travel. The commission has strong scientific credentials and has produced a range of policy recommendations that at base acknowledge that management of demand is the most critical factor in limiting greenhouse gas emissions from air transport.

Consequently, it is not surprising that the commission expressed disappointment in the UK Government's 2003 White Paper *The Future of Air Transport* (Royal Commission on Environmental Pollution, 2003). It stated that the White Paper "reveals a serious fracture between the government's policies on energy and aviation" and "fails to take account of the serious impacts that the projected increase in air travel will have on the environment". Whereas sensible climate change policy calls for the restriction of airport development, the White Paper instead entrenched the growth model and the expansion of airport capacity. Can the Australian Government White Paper do any better than this, or will it reinforce an ecologically unsustainable growth model too?

A policy position that has city airports as necessary nodes in the global economy can be contrasted with other positions that question the benefits of further aviation growth, or that even question our want of mobility. The need to reduce the need for air transport—in effect a questioning of the "predict and provide" approach to aviation planning—is in accord with the sustainable transport literature, which increasingly emphasises that the rapidly growing demand for mobility cannot be met in a sustainable way.

2. The "crash scenario" and the need for contingency planning for peak oil

At the beginning of this century, the Centre for Sustainable Transportation (2000) in Canada concluded that two factors likely to curtail the aviation growth envisaged by the industry are the need to curb greenhouse gas emissions and the lack of availability of low-cost aviation fuel, a consequence of the end of cheap oil. The growth in aviation projected by the industry through to the year 2030 was unlikely to happen in its view. A more likely scenario is that aviation activity would actually decline in the period to 2030. For these reasons, the centre considered that the rate of investment in airport infrastructure appeared to be both unjustified and unwise.

Although the first decade of this century has been associated with continuing growth of the aviation industry, the related issues of climate change and peak oil will likely both act as a strong brake on its further growth over the next two decades. The rapidly developing climate crisis will make it increasingly difficult for a consumer-based growth model to be maintained. Such policy and practice is likely to be considered as increasingly anachronistic.

Long-term forecasts by Airbus and Boeing predict around a 6% annual growth rate for air-freight tonnage over the next 20 years (Boeing, 2006). However, the Royal Commission on Environmental Pollution (2002, p. 37) concludes that air freight is so much more environmentally damaging than other transport modes that it must be reserved for very high value, and usually perishable goods. Carbon dioxide emissions and fuel use per tonne-kilometre for rail freight are a factor of 20-100 lower than for air. That is, in contrast with the projected growth rate, there is a critique that asks whether the transport of goods by

air is sustainable. When a price is put on carbon, air freight will then have to include externalities that are currently ignored.

As discussion on the introduction of an emissions trading scheme takes place, Qantas, one of Australia's larger company emitters of carbon, comments (Rob Kella, chief risk officer at Qantas): "We realise there is a cost of carbon but it's how you introduce the cost without making it hyperinflationary and an industry killer" (Murray, 2008).

The other major energy issue that has significant implications is the continuing availability of conventional oil (also called "cheap oil"). There is a growing literature pointing to a short to medium term supply problem e.g. Campbell and Laherrere (1998), Bentley (2002), Heinberg (2003), Deffeyes (2005), Kilsby (2006), and publications from the Association for the Study of Peak Oil (ASPO) such as Campbell (2006). "Peak oil" has been suggested as indicating an important turning point in history. This is the point, estimated to be around 2010, where humankind's ascent up the oil production "mountain" flips over to the descent down the mountain. From then on demand will outstrip supply. The ramifications are vast, with the likelihood of inflation, recession, and international tension, given that the remaining reserves are primarily in the Middle East. A review of energy futures for Australian transport suggests there is significant risk of a crisis arriving before any preventative action can take effect (Kilsby, 2006). Fleay (1999, p. 33) argues that "commercial aviation is most vulnerable to the coming decline of conventional oil, the transport mode least able to adapt".

With the current oil shock, airlines have been forced to raise fares and cut some routes (ABC, 2008). Willie Walsh, head of British Airways, has declared that the era of cheap flights is over (Milm, 2008). Initially, airlines will adapt using a range of measures such as cutting staff and routes, mergers, outsourcing and so on. However, higher oil prices are likely to result in "a completely different air travel system" (Grossman, 2008). How will airlines fare if oil prices go above US\$200 a barrel as is now being envisaged? e.g. see Leeb (2006). What kinds of scenarios face "Airport Cities" in an era of oil depletion? It would appear that the kind of narrow economic thinking that underlies the development of the "aerotropolis" has taken far too little account of carbon pricing, peak oil and rising jet fuel prices.

Kilsby (2006) argues that the possible consequences of reaching the peak of global oil production are so far-reaching that they cannot be ignored in transport planning processes. Thus precautionary planning for future oil constraints should be an essential part of risk management. He underlines the fact that aviation is the transport mode most at risk. The Senate Committee Report on Australia's future oil supply likewise emphasises that current trends in energy consumption are neither secure nor sustainable, and that energy policy needs to be consistent with environmental goals (Senate Standing Committee on Rural and Regional Affairs and Transport, 2007, p. xxi). The planned White Paper on aviation policy must address these issues in a much more substantive fashion than indicated by the Issues Paper. Contingency planning for much higher oil prices and the implications for aviation is one significant part of this.

The work on a choice of futures is also valuable, rather than taking the "growth forever" model as a given. For example, with respect to aviation, Akerman (2005) considers four possible futures linked to air travel in 2050. The various options depend on factors such as:

- Predominant focus in society—whether this be GDP-growth or activities relying less on consumption and a focus on leisure
- Pace in society—fast or slow
- Role of IT—with varying effects from generating more transport to substituting for transport
- Spatial focus—global or local/regional.

In Akerman’s choice of aviation futures, one possible scenario has a low consumption and leisure focus, is slow-paced, has much lower total travel passenger-kilometres (and consequently much lower greenhouse emissions), and a local/regional spatial focus. Investment in more diversified local economic development of regions is therefore one way of reducing the growing demands of air traffic.

In addition, in terms of infrastructure planning and the meeting the needs for mobility, modal change, especially to high-speed rail, is regarded as a sensible option for short-range traffic, for both economic and environmental reasons (Royal Commission on Environmental Pollution, 2002, p. 33). In Australia, however, rather than highly expensive VFT, the case for much more cost-effective tilt trains linking Melbourne-Canberra-Sydney has been usefully made (Laird, Michell, & Adorni-Braccesi, 2002). Tilt trains can travel at speeds of up to 200 km/h. Such a project would involve straightening out the existing track and also allow the use of faster and heavier freight trains. Carrying passengers and freight this way is much more environmentally friendly than greenhouse emissions profligate air travel and air freight.

3. The skewing of aviation policy and institutions towards commercial interests and away from community and health concerns

The Issues Paper asks how communities around airports can be protected from undue aircraft noise as demand for services continues to grow (p. 12) and whether emphasis should be given to airport/community partnership approaches such as locally negotiated agreements (p. 21).

I am familiar with these concerns through a case study of development at Canberra Airport. Interviews with community representatives highlighted the fragmentation of government responsibilities, and the complexity of access to bureaucracies. There was also a perceived institutional lack of responsibility spanning political, commercial and public service agencies, including interactions across agencies. One interviewee stated (May & Hill, 2006, p. 445):

With this particular issue, I have never seen such an incredible example of “pass the buck”. Nobody has taken responsibility.

Airservices Australia, for example, is considered to be unable to address negative feedback from the community easily because of its conflicting roles, as it is committed to and constrained by the growth paradigm subscribed to by various spheres of government and the airline industry. Its financial results are closely tied to growth and downturns in the aviation industry, with a large proportion of its income coming from regular air passenger transport. Its noise complaints service is more in the nature of reporting service, with little follow through of value to complainants and a lack of “teeth” to effectively deal with complaints.

Contrast this with efforts to deal with noise at a local government level, where inspectors are able to measure noise against prescribed standards and act directly on complaints received.

Another problem is that airports are considered to be a “law unto themselves”. This is related in part to the privatisation of airports and inadequacies associated with the *Airports Act 1996* (Freestone, Williams, & Bowden, 2006). The Act explicitly excludes airport operations from the laws of a State or Territory relating to land use planning. Diverse interests, including state governments, local councils and coalitions, local business, commercial industry groups and environmental groups express considerable disquiet about aeronautical and non-aeronautical commercial developments.

Further, there is a perceived lack of objectivity and transparency in the way the Master Plan consultation process is conducted and evaluated. In the case of Canberra Airport, community groups consider that the process is weighted far too heavily in favour of Canberra Airport as framer and controller of information flows in relation to the Master Plan (May, 2008). In essence, the Airport is considered as being equivalent to the “fox in charge of the chicken shed”.

For example, Canberra Airport confidently states in its recent preliminary draft Master Plan that “a curfew is not in the best interests of the community” (Canberra International Airport, 2007, p. 83). This assertion is not supported, however, by a broad section of community opinion. Curfew 4 Canberra Inc. is a recently formed ‘federated’ community organisation, with membership drawing on the already existing community and residents’ associations of Hackett, Watson, North Canberra, Gungahlin, Narrabundah, Pialligo and Jerrabomberra in the Canberra/Queanbeyan region. Curfew 4 Canberra considers that a night-time curfew is most definitely in the interests of those living in Canberra, Queanbeyan, and surrounding communities (Willans, 2008). A recent petition was organised by Curfew 4 Canberra (2008), with over 3,000 signatures calling for a night time curfew at Canberra Airport.

A related issue concerns what constitutes “undue aircraft noise”. Just what aircraft noise levels are acceptable is a contested one, with the approved noise dose being poorly defined. The World Health Organization (2001) has highlighted a range of adverse health effects associated with noise and expressed concern about the deteriorating noise environment in many countries. Aircraft noise at night is of particular concern, because of sleep disturbance and associated effects on people’s health (Department of the Environment Transport and the Regions, 2000). A recent study demonstrated increased blood pressure in people living near an airport, as they sleep, with important ramifications for health (Kahn, 2008). One of the reasons aircraft noise is such a contentious issue is that different people view the issue differently. Another is that noise is much more than an acoustic problem, but a social and evaluative issue too.

Most complaints about aircraft noise in Australia come from outside the ANEF 20 noise contour (Department of Transport and Regional Services, 2000, p. 2). With growth in air traffic, noise contours will continue to expand outwards from major and regional airports, progressively affecting more people. However, aircraft noise disturbance is not coming just from high numbers of aircraft movements, but also from a lack of respite, rather than the loudness of individual flights. That is, the noise becomes intolerable because of its frequency, as with the effect of a dripping tap (Department of Transport and Regional Services, 2000, p. 19). Noise events are also becoming more frequent in sensitive time periods such as evenings and weekends. In addition, the issue of broad area noise is now

receiving wider attention, as in the *ICAO Environmental Report 2007* (Southgate, 2007). In recent times, noise associated with air routes at significant distances from airports has become a significant issue in some countries. Non-auditory factors, especially noise expectations, have been found to be very important in determining the level of public annoyance from aircraft noise. Public annoyance can be very high if there is a community expectation that certain areas should be “quiet”, with this factor coming into play with communities living outside the usually considered noise contours.

These observations suggest that far better and more genuine public participation processes must be instituted, rather than the clear bias that exists now, towards aviation, airport, and commercial interests. Environmental and community health concerns currently are considered well behind commercial interests. An agency or unit in government, whose primary responsibility is concerned with noise control, and which can act as an advocate for community concerns about health and environment in relation to aviation, is required. This could be an environmental agency whose charter is strongly linked to quality of life issues or possibly a specialised role such as an Aircraft Noise Ombudsman (Federal Aviation Administration, 1999). This would help to build some trust in the community, where there is currently considerable mistrust in institutional processes.

The democratisation of how aircraft noise is addressed should also go hand in hand with better institutional support for community interests. In this regard, the Federal Transport department has outlined some principles and guidance material for better understanding aircraft noise and determining the acceptability of future aircraft noise. (Department of Transport and Regional Services, 2000; Environment Australia & Department of Transport and Regional Services, 2003). The broad principles are:

- (a) *Transparency*: communicating to the public in everyday language, and using information that can easily be verified by the public
- (b) *Inclusiveness*: not excluding people from information because the standard indicates that noise is not a problem
- (c) *Empowerment of the individual*: placing the individual in a position where they can form their own view on the acceptability of future noise.

These principles should be used by relevant institutions to a much greater extent than they currently are. So doing would help to validate and address community concerns about aircraft noise.

Recommendations

The following recommendations relate to the discussion above:

1. The Australian Government should address aviation’s role in relation to climate change in a much more serious and substantive way than is flagged in the Issues Paper. Climate change now constitutes a fast moving global sustainability emergency, and continuing to support a growth model for aviation is anachronistic. Policies underpinned by demand management are critical. The policy related work of the Royal Commission on Environmental Pollution and also the Sustainable Development Commission in the UK is most relevant, as is that of the ANU Centre

for Climate Law and Policy in Australia.

2. The Australian Government should prepare contingency plans for the decline of aviation, given that aviation is the transport mode most vulnerable to the coming decline of conventional oil. Projections for aviation growth need to be critiqued in this light, in view of their implications for competing and often more appropriate developments and infrastructure e.g. rail. The policy work and expertise underlying the Senate Standing Committee Report on Australia's future oil supply (2007) is most relevant.
3. An institution that can act as an advocate for community and health concerns in relation to aviation should be created. This could be, for example, an Aircraft Noise and Environmental Ombudsman. Such a mechanism is needed to counter the current strong institutional bias towards commercial interests.
4. Master Plans for airports need to be assessed by an objective authority, rather than the airport itself. The perceived lack of objectivity and transparency in the way the Master Plan consultation process is conducted and evaluated is considered by community groups to be fundamentally flawed.
5. The Federal Transport Department principles for better understanding aircraft noise and determining the acceptability of future aircraft noise need to be used by relevant institutions to a much greater extent than they are at present.

Attachments

Two related papers are forwarded in a separate email, providing further background on topics discussed in the Issues Paper. They are:

May, M., & Hill, S. B. (2006). Questioning airport expansion--a case study of Canberra International Airport. *Journal of Transport Geography*, 14, 437-450.

May, M. (2006). Aviation meets ecology--redesigning policy and practice for air transport and tourism. *Transport Engineering in Australia*, 10, 117-128.

The latter paper (May, 2006) discusses eleven options for redesigning policy and practice for aviation. Although broad policy change to counter the growth model of the aviation industry and its clash with climate change policy objectives is essential, efforts targeting individual travel behaviour can also assist.

Regards

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References are on the next page.

Attachments are forwarded via a separate email.

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