

This submission is the sole work of Dr Peter Forsyth. I was formerly Professor of Economics at Monash University, and currently Consultant. Much of my research has been on applied microeconomics and especially on the economics of aviation. I am a Fellow of the Air Transport Research Society and active in research on aviation. Recent books include: *Airport Economics* (with C Guiomard and H-M Niemeier), 2023, London and New York, Routledge; *Economic Regulation of Urban and Regional Airports* (with J Mueller, H-M Niemeier and E Pels, Editors), 2023; *Tourism Economics and Policy*, (with L Dwyer and W Dwyer) Second Edition, 2020; www.channelviewpublications.com; and *Aviation and Climate Change Economic Perspectives on Greenhouse Gas Reduction Policies*, (with F Fichert and H-M Niemeier) 2020

Submission to the White Paper on Aviation

Peter Forsyth

Monash University

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The Green Paper (Department of Infrastructure, Transport, Regional Development and The Arts, 2023) invites submissions of a range of Aviation issues. In this Submission three are discussed:

- 1 Competition and Slot Reform;
- 2 Reshaping Australia's International Policy, and
- 3 Enhancing Aviation's Contribution to Net Zero

1 Competition and Slot Reform

Improvements in the way slots are allocated is one way in which the competitiveness of the aviation markets in Australia can be enhanced. There are several problems with the slot system as it operates in Australia. Some of these problems will not be easy to fix, though it is possible to ameliorate them. Several of the points made here are relevant for the medium to long term, but it is worthwhile exploring them now.

In particular, there is a need to be more open to options for change than in the Harris Review, which takes a distinctly conservative approach (Harris, 2021). This Review in emphasises the impediments to changing the existing system. It does make some useful contributions, in particular, in terms of changing the administrative system as it stands and making it more similar to the IATA Worldwide Slot Guidelines.

The slot problems will increase over time. The Sydney slot issue will moderate with the opening of the Western Sydney Airport. However, it will grow over time again, especially if Kingsford Smith Airport remains the preferred airport. Over time, other airports will become subject to excess demand and the slot scarcity value of slots will increase in them. With the current system slots in Sydney and in other airports will become more and more valuable, and this will mean that it will make the system more and more difficult to change. Because of the value of the slots to the airlines, slots become baked in. Thus, it is important to take the opportunity which this White Paper presents to make reforms before it is too late (as it seems to be in Europe).

The 80% Rule

Several issues were dealt with, but only simplistically, in the Harris review. One of the concerns involves the 80% rule. The Review simply states that there is not enough evidence to change it, but it does not really go into what evidence there is, for and against change.

This issue is becoming quite substantial around the world -for example other countries and regions, such as the European Union, are investigating this. For example, there is the Report

done by the by MIT for the European Commission (Odoni et al, 2020). The 80% rule is now becoming a serious issue in Australia - for example, this has given rise to the cancellation experience and the problems which entrant airlines have facing in getting adequate runway capacity for their services. Australia needs to get better use of its major airports. It is to be expected that incumbent airlines would oppose any change from the 80% rule, since they gain from the system, and they will gain even more over time as the scarcity value of slots increases. This is an issue which deserves more thorough attention than given in the Harris Review.

Slot Trading

Another issue which the Harris review handles inadequately is the issue of slot trading. The Review dismisses this issue in few words. It mentions some possible benefits from slot trading, and then goes into a range of possible problems, and concludes that there is not a case for slot trading. Several of the problems which the Harris Review claims that slot trading will give rise are already in evidence *without* slot trading. For example, the Review claims that slot trading would give rise to slot dominance by major airlines. But this is a problem which is already in evidence with no slot trading. In fact, this has been a major area of research and policy discussion over the last 15 years, especially in Europe (Czerny et al.2008; Gillen and Starkie, 2016; Forsyth et al, 2023). The possibility of slot trading has been discussed in detail, and the European Commission has enabled slot trading and does not anymore prohibit it. There is considerable evidence to draw upon in the case of the United Kingdom, which does permit slot trading.

The UK experience indicates that slot trading is feasible, and that it works well, though not perfectly. It notes make it possible for a new entrant airline to gain slots at busy airports, though sometimes these slots are not cheap, reflecting the high profits that airlines sometimes make from having these slots. For example, one problem in the in Sydney airport is the difficulty for developing or new airlines to gain enough slots to operate sufficient services. If slot trading is permitted, there is more of a chance that these airlines will be able to get some runway capacity and competition will be enhanced. While slot trading will not solve all problems, it should be examined thoroughly to assess just what it can make in resolving the existing and developing problems.

The 80 Movements Cap

Another issue which on which the Harris Review made recommendations on is the cap on Sydney KSA flights. It is generally accepted that the capacity of the airport is about 90 flights per hour, but the cap on allowable flights is 80 flights per hour. This is a policy decision which was taken in order to lessen noise in the environment. The Harris Review suggested that little change be made, and that the cap remain 80 flights per hour. Many have suggested that this results in poor utilisation of an expensive asset. There is also the observation that aircraft have become less noisy over the years since the cap was first introduced.

This experience is also the experience in many other airports, especially those in Europe. Even though there is heavy excess demand in many European airports, they are limited in the number of flights which they can handle, mainly because of their noise impacts. It has been suggested that European airports, other than the major London airports, are not as efficient in serving airlines than US airports. It is useful to recognise that caps are not the only way of handling noise problems. While noise pricing is difficult to implement successfully, alternative methods

such as noise budgets can be effective in limiting noise, and these should be considered along with approaches such as noise caps.

The Harris Review made some general observations in support of its recommendations. However, it did not analyse the issue at all quantitatively. An established way of assessing investments is to use a cost benefit analysis framework. There is a case for CBA of the cap on airline movements. Such a CBA would make some estimate of the benefits from the cap, for example the noise reductions, and any other benefits, and compare these to the costs of the cap. The cap means that fewer flights are made relative to the overall capacity. As demand increases, notwithstanding the introduction of the Western Sydney Airport, there will be increasing costs, in terms of less use of a valuable asset, of maintaining the cap. It must be recognised that incumbent airlines will normally gain from the cap. They will not be able to operate as many services, but they will gain from increasing slot values. On balance, they will be better off with the cap and lose if there is a less constraining cap.

Thus, there is a case for periodic reassessments of the cap, preferably using a cost benefit analysis framework. While the results of the CBA need not be the sole determinant of government policy, the CBA would be useful in giving the government information about how costly the cap is, and whether there is a case for reviewing it.

Who “Owns” the Slots?

An issue which is now becoming considered in the slot discussion is the issue of who owns the slots. Airports and airlines are different from most forms of infrastructure investment in that the use of the infrastructure is vested in the airline, the customers, rather than the airports. The users of electricity do not own slots to the electricity being produced. Rather, the owners of the power plant allocate the electricity to the customers, for which they charge a price. With airport slots, it is the airlines which own the slots, and can gain very substantial profits from this form of “ownership”. The key figure in airline deregulation in the United States, Alfred Kahn, is one of the few who have noticed that this is a strange arrangement (Forsyth et al, 2023, p78). The airport makes the investment, but the customer, the airlines, gains a benefit when capacity is scarce. This means that the airport gains less revenue when there is a shortfall of capacity, and this contributes to a funding problem. Typically, airports will have to increase their charges when they invest in extra capacity, since the gains from scarce capacity are reaped by the airlines.

This has a range of implications, not all of which will be discussed here. In particular however, the airport might be better rationing the scarce capacity than the airlines. For example, the problem of cancellations coming about because of slack slot rules, such as the 80% rule, would not come about. Another aspect is that the airport would be less likely to favourites with the airlines. The airport would allocate the slots to the airlines which are prepared to pay for the slots. They need be no problem of slot hoarding.

It is not suggested that the current slot system be totally replaced by the ownership of slots by the airports. This would be a major change. However, the White Paper is an opportunity for consideration of the costs and benefits of slot allocation and ownership by the airlines and by the airports. Most airports in Australia do not have an excess demand problem, but several over the next few years will develop them. At the moment, it may be possible to vest the ownership of the slots in these airports rather than the airlines. This can be done with minimum disruption

in terms of granting slot rents to the airport rather than the airlines. For example, it will probably be sometime before Western Sydney Airport will be subject to excess demand. It would be possible to vest the slots in the airport and the main objectors, the airlines, would suffer little. It will take some time before switching from slot ownership by the airlines rather than the airport will produce tangible benefits, but this would be an example of where an investment can be made for the future. It would be useful to investigate this issue, when the Western Sydney Airport is about to commence operations, and when the government itself owns the airport, rather than do nothing and the system of airlines owning the slots becomes completely set in concrete.

The Aeronautical Pricing Principles

The Green Paper invites commentary about the Aeronautical Pricing Principles which underlie light handed regulation in Australia. These principles do not have key play major role in the day today regulation of the airports, but they can be quite important. However, one aspect of these principles concerns peak pricing by the airports (Aviation Green Paper, 2023). These principles suggest that it would be permissible by the airports to adopt peak pricing, subject to this being necessary to efficiently allocate scarce capacity when demand exceeds this. The exact interpretation of this clause needs to be determined. So far, this option has not been taken account of by the major airports, though there have been a few instances of minimum prices in busy periods. With many infrastructure investments, peak pricing has a major role in allocation of scarce capacity that - for example, it has a major role in electricity pricing. However, with airports around the world, there has been little use of peak pricing.

There is a good reason for this for this. The slot system more or less makes peak pricing almost irrelevant (Czerny et.al, 2008). The allocative mechanism is the slot system, not prices. Airlines will have to pay an effective price to use the airport in if demand exceeds capacity. Where there is trading of slots, as there is in the United Kingdom, airlines will have to buy a slot if they want additional slots. There will be no need for peak pricing. Thus, it is not surprising that the Australian airports have not used the opportunity to set prices at the peak. In effect, the ability of the Australian airports to adopt peak pricing is greater than with most busy airports around the world, since most of the busy airports are regulated in ways that diminish the incentive to use peak pricing.

The relevant question is: could there be advantages in moving from the slot system towards peak pricing? They certainly would be some effects. In particular, it will be the airports which gain from on excess demand, since they will set their prices higher, and airlines will pay higher prices, at least during the peak hours. Peak pricing will result in similar results to the airport owning the slots rather than the airlines. The airport will charge similar prices to all customers (unless there are specific contracts with specific airlines), and all airlines would be able to gain service at their preferred times, as long as they are prepared to pay the price. There should also not be any slot hoarding.

It is for the airport itself to determine whether it would like to use peak pricing. This pricing will give benefits to the airport if there is light handed regulation, which is the case in Australian airports. For the future, the option to use peak pricing should still be included in the Aeronautical Pricing Principles, even if it is an option not currently used. It may be worthwhile for the Department to evaluate the costs and benefits of moving to peak pricing, and if peak

pricing has benefits not available with other systems, such as the slot system, with a view towards encouraging by the use of incentives for airports to set peak pricing.

Slots and Airport Charging

Airports have traditionally set charges according to either weight of the aircraft or passenger loads. This system has decided advantages in terms of encouraging the use of the fixed investment in the airport when capacity is ample. However, this does not work well when demand exceeds capacity and there is a problem of rationing limited capacity. In this situation, a uniform pricing policy would be better than the passenger related charges (Czerny et al., 2008). At the moment, airlines pay more for large aircraft with many passengers, than they do for small aircraft. This means that the capacity of the airport is not used efficiently. It is the airlines which choose what aircraft to use, and it is the airport which chooses what pricing structure to implement. There is a case for the issues of pricing structure at airports to be considered and if need be, more efficient pricing than currently used at the peak be incentivised.

The Long Run Implications of Slots – Less Investment?

Another aspect of the slot system is that it discourages investment in new capacity (Productivity Commission, 2002; Czerny et al., 2008; Gillen and Starkie; Forsyth et al., 2023). This will be especially true if airports as well as airlines gain from not providing enough capacity. The airlines have an incentive to discourage the use of investment in new capacity when there are valuable slots. The problem is that when there is new capacity provided, the slot profits or rents will be reduced. Thus, airlines will often say that new capacity is needed, but when this new capacity looks like being a reality, they argue that the investment should not proceed. There are several examples of this happening - for example British Airways is very concerned about a new runway at London Heathrow airport.

2 Reshaping Australia’s International Aviation Policy

The Green Paper argues that Australia’s international aviation policy is fit for purpose. In a brief discussion, this argues that no major change is required - it argues that things are pretty much fine. In fact, it goes on to say that “Over the last 30 years, Australia has been at the forefront of international market deregulation and liberalisation...”. Many would dispute this. The Qatar dispute highlights the evidence that matters are not as rosy as the Green Paper says. In the words of the Australian Financial Review “...the government has no policy framework for encouraging or even forcing airlines to compete...” (Australian Financial Review, 2023, P 42). The Green Paper argues that the policy promotes competition. This is difficult to believe given the recent dispute about additional flights for Qatar Airways. For example, the main competitor of this airline, Qantas, was invited to give its views about this application just before. Giving access to the main competitor to lobby the government is a strange way of promoting competition.

There is a strong case to reshape the policy to increase the scope for competition. We can look at the question of Australia’s international aviation policy by suggesting three distinct approaches:

- Firstly, there is the current policy;

- Secondly, policy could be formulated using a pragmatic but rigorous case-by-case approach, which would involve transparent and informed assessment of the national interest.
- Thirdly, Australia could opt for an open skies policy.

These three options can be discussed in turn.

The Current Policy

The current policy involves looking at proposals, such as new flights by an airline or group of airlines, in a case-by-case approach. However, the following points can characterise the way that Australia chooses to evaluate the proposals.

- Firstly, there is no public articulation of what the national interest is, even though the government argues that it is promoting the national interest.
- Secondly there is no articulation or statement of the key trade-offs between the different aspects, such as the benefits to Australian travellers or the profits of the Australian airlines.
- Thirdly there is no attempt to seek competitive neutrality between the different competitor airlines.
- Fourthly, there is opaque decision-making - it is not clear what factors are important or not in assessing whether a proposal should be accepted.
- Fifthly, there is no scope for review of decisions.

There are many other aspects of the current policy which need not be mentioned at this stage. However, a one aspect which warrants attention is that of lessening the ability of airlines to schedule additional flights ahead of demand. This may seem to be competitive, but there are clear problems with it. One question is why is it necessary to withhold competitive permission - what advantage is served by holding back competition in this way? Clearly there is the possibility that inadequate capacity to serve demand from time to time will emerge. This is exemplified by the current Qatar Airways dispute - clearly there is dispute between the government and Qatar as to what is needed to serve the Australian market. In effect, the goal of always allowing adequate capacity is not being achieved using this policy.

These problems suggest that what is needed is a rethink by the government. It is the way that the government views international aviation which is the problem. It regards its policy as being a pragmatic one, assessing requests on a case-by-case basis. In principle, this can make sense, if it assesses the costs and benefits of granting requests rigorously. However, it takes a protectionist approach - it keeps capacity controls, approves international additional flights in a piecemeal manner, and limits bilateral access to the four major cities in many markets. There are several references to the “national interest” in the Green Paper, but over the past few weeks, especially in the Qatar discussion, Ministers have interpreted this in a protectionist way. They say that they are seeking to protect local aviation jobs, Qantas investments in new aircraft, and the long-term sustainability of the Australian aviation industry – all protectionist sentiments. The benefits to Australian travellers and the tourism industry were not mentioned by the government. Their view of the national interest is much the same as that which Qantas has. Qantas is articulate in setting out its view of the national interest, but the government should have a much broader view. The government has a 1960s or 1970s view of what the national interest involves. The Qatar case is a particularly strange one, since Qantas has very few flights

to Europe, meaning that the government is mainly protecting foreign airlines and their staffs, not Australian airlines and jobs.

Before going further, it makes good sense to sketch out how the national interest could be determined in the context of international aviation policy. The national interest will depend upon a number of factors, both economic and non-economic. In terms of the economic interest, it is possible to measure the various benefits and costs from change in the policy. Some of the effects which would be very relevant would be the benefits to Australian travellers, the profits for the Australian airlines, the tourism benefits from additional visitors, and the effects on the environment, particularly in terms of greenhouse gas emissions. In addition to the costs and benefits, the distribution aspects of the costs and benefits would be relevant. Apart from the economic aspect there are the non-economic aspects. These include security aspects, health aspects and others. One overriding aspect of the national interest would be that competition be promoted where possible.

A Rigorous Cost Benefit Approach

The second approach is to conduct a thorough and rigorous and transparent analysis of the costs and benefits of allowing additional capacity to be served by airlines of a bilateral partner. This might be called a cost benefit approach, given that it uses the techniques of cost benefit analysis to analyse whether the country gains or loses from allowing the additional flights. This is an approach which has been used in several instances in Australia even though it is not being used currently. This cost benefit approach has been explored in a number of Reports. Perhaps the first of these was the International Civil Aviation Policy Report of 1978 (ICAP,1978). A further Report, also done for the Department of Infrastructure and Transport (or its predecessors) was the Negotiating International Aviation Rights Report done for the Department in 1988 (Department of Transport and Communications, 1988). The Industries Assessment Commission did a study replying using computable equilibrium analysis of aviation and tourism in 1989 (IAC,1989). The Productivity Commission published a report on International Aviation which used a cost benefit framework and recommended that Australia adopt an open skies policy where feasible in 1998 (Productivity Commission, 1998). The Department has also considerable experience in using a cost benefit approach to infrastructure issues, such as the study of the Second Sydney Airport - this used both cost benefit analysis and computable general equilibrium analysis to advise on the siting of the Second Sydney Airport. This approach has been recommended in other countries, such as Canada (Gillen et al.,1996).

How can the economic dimensions of the national interest be assessed? A pragmatic approach would be to conduct a cost benefit analysis of the pros and cons of liberalisation in a particular case, for example, of a proposal for liberalisation with a particular country. This is something which the Department of Infrastructure and Transport and its predecessors have done from time to time.

Some of the key costs and benefits are:

- The benefits to Australian passengers from lower airfares;
- The possible reduction in profits for Australian airlines such as Qantas;
- The benefits from increased tourism receipts from inbound tourism;

- The costs or benefits of the impact on jobs, in both the airline industry and the tourism industry and
- The impact on greenhouse gas emissions from the airline industry and tourism.

These factors can be examined to determine whether Australia gains or loses in economic terms from allowing a partner airline, such as Qatar Airways, more flights (for more detail, using a similar situation, see Forsyth, 2014). Extra flights can be expected to reduce air fares in the short term. Fares have been high due partly to ongoing inflation, and partly due to the fact that airlines have been struggling to achieve their pre COVID-19 capacity. They have been finding it difficult to find staff, and they are taking time to get all their aircraft back into operation. Shortages of capacity means that they can charge higher than usual fares, but over the next two to three years, airlines will add more flights and fares will moderate. Additional flights, such as those requested by Qatar, will lower fares for a couple of years.

Using the Qatar example

- Most likely, the benefits to Australian travellers will be one of the biggest sources of benefit. More competition in airline markets to Europe will bring down prices. There are some costs from outbound tourism where travellers switch (taxed) domestic trips to (mainly untaxed) international trips as a result of lower fares.
- Another form of benefit comes from additional inbound tourism. The benefit from this is often exaggerated, though it is positive. Often the “benefits” are measured in terms of the extra spending of the inbound tourists. However, it needs to be taken into account that this is a gross measure of benefit, not a net benefit measure. The inbound tourists will spend money, but Australian resources will be needed to produce the goods and services they use. They will employ workers, but these are not free; they will stay in hotels, but these services have to be produced; and they will use restaurants, but again, the food is not free to provide. If we had to measure the *net* benefits from tourism it is more likely to be of the order of 5 to 10% of total spending. These inbound tourism benefits are worthwhile, but not as big as the benefits from additional travel by Australian tourists. Some of the numbers quoted in the press in the current debate are obviously measures of gross benefits, such as gross spending, or the gross number of jobs created, not the net benefits, and thus they need to be treated with caution.
- Liberalisation typically comes at cost to the airlines – but which are the airlines which will suffer? Lower airfares are quite likely to reduce Qantas profits directly through its own services, but also, to a lesser extent, through its arrangements with Emirates. Emirates is a major player in the Australia to Europe market, and it would be affected by Australia giving Qatar Airways the rights for more flights. However, we have to remember that Qantas is only around about 50% Australian owned and many of its international staff are not Australians. This means that any reduction in profits will be shared between Australia and other countries- an important proviso when measuring the impact on the national interest. Qantas profits will be reduced initially, but it will be able to claw back some of this reduction if it is able to improve its productivity over time. The loss of profits to Qantas will be relatively minor since most of the reductions in profit accrue to foreign airlines, not Qantas. Since Qantas has very few flights in this market, this will be a cost falling on foreign airlines.

- The impact on jobs markets of Australia granting more flights to Qatar Airways, in the current situation, will probably not be large. Overall Australia has little unemployment, and this is particularly so for the airline industry, which has great difficulty in attracting enough staff. Things might be different if overall unemployment were high, but that is not the case.
- The impact of additional flights by Qatar Airways to Australia on greenhouse gas emissions is unlikely to be very much. The airlines' contribution to global emissions is now recognised as being very substantial, but additional flights by one airline will be cancelled out by reductions in flights by other airlines (not necessarily to Australian destinations), so that the net effect is not likely to be very large.
- On balance, while the gains from allowing Qatar more flights, as a result of benefits to Australians from lower fares and benefits from more tourism, the costs will mainly accrue to foreign airlines and their staffs. Australia will be paying less for its imports of airline services, which will lead to an increase in its National Income. From Australia's perspective, there will be a clear economic gain from additional flights by Qatar Airways.

It should not be assumed that if we take this cost and benefit approach to evaluating airline liberalisation the result will always be that liberalisation is in the economic dimensions of the national interest of the country. It can be the case that the calculus will indicate that liberalisation will not be worthwhile. The Productivity Commission, in its 1998 report, recognised that airline liberalisation was not always in Australia's interests. Around 2005, Singapore Airlines was seeking to enter the direct Australia-to-United States market. At this stage Qantas was the dominant player in this market, and the market was very profitable. This meant that for a relatively small addition to competition, there would be a significant reduction in Qantas profits. The net effect was that it was likely that the gains from competition and benefits to Australian travellers would be outweighed by the reduction in Australian airlines' profits. As a result, the cost benefit approach would suggest that allowing Singapore Airlines onto the route would not be in Australia's interests. The Government did not allow Singapore Airlines access.

The Third Option – Open Skies

An alternative to the current policy is that of actively seeking open skies, as recommended by the Productivity Commission Report. This is an automatic pro competition option, which would put an emphasis on competition, to serve the interests of Australian travellers and the local tourism industry. It does not ignore the interests of the airlines and their staffs, as long as these airlines are internationally competitive. Australia has some open skies arrangements with some countries, such as New Zealand and the United States, as well as Singapore, China and the United Kingdom. The major Australian carrier, Qantas, has been quite successful in competing in a number of these markets, especially the important market to the United States. While it is true that Qantas is not especially competitive in the Australia to Europe market, it has strong alliance relationships with Emirates. In addition, Qantas is planning new routes to Europe on a direct basis from Sydney and possibly other capitals. It does not appear to be facing a problem of long run sustainability. Airlines continually argue that if competition is allowed in a market they would cease to survive. However, when put to the test they do survive, and sometimes thrive.

Reading the Green Paper, it might seem that Australia is actively seeking liberal arrangements and open skies bilateral arrangements. The reality is rather different. Australia has over 100 bilateral agreements with other countries, but it has only 7 open skies agreements. By contrast the US, as of July 2020, had negotiated 130 open skies agreements with its bilateral partners. While the Green Paper states that Australia is seeking open skies agreements with its partners, it does not seem to be trying very hard to do so.

Recommendations for Reform

Do we need a full review of international aviation policy? Not really. The issues have been canvassed many times. If the government is serious about reviewing Australia's international aviation policy, it could dust off a copy of the 1998 Productivity Commission Report which went into considerable detail about the pros and cons of liberalisation and open skies. It recommended bilateral open skies, though it did not recommend that Australia liberalise unilaterally.

Which approach could be recommended for adoption by Australia in its international aviation negotiations? One option would be to continue with the current policy, which is not transparent or rigorous. Another is to adopt a cost benefit evaluation of specific liberalisation proposals, such as a move to allow airlines from Australia's bilateral partners additional flights if they are judged to be in Australia's national interest, following a rigorous and transparent evaluation. A third option would be to adopt an open skies policy where possible, taking into account the preferences of the bilateral partners.

The first option should be dismissed - Australia needs new approach to international aviation negotiations. This should be obvious following some of the problems that have been experienced lately. It is ironic that the problems which have been attracting attention in the Review of Infrastructure are the same sorts of problems which apply to aviation policy. The Infrastructure Review castigated many agencies for their poor performance in terms of evaluation of investments (Gardiner-Barnes et al, 2023). In spite of this, the same Department which is responsible for the Infrastructure Review currently evaluates international aviation policies in much the same non-transparent and non-rigorous way. Poor evaluation, or even non-existent evaluation, of policies is neither necessary nor in the national interest in aviation policy as it is in infrastructure policy.

The choice of approaches to aviation policy comes down to two approaches - the cost benefit approach or the open skies approach. Which is better? Often, with open skies, Australia does not have any choice in the matter, since its partner may not be willing to move to open skies. However, in other cases Australia has a chance to choose between open skies or a more pragmatic cost benefit approach. There are advantages and disadvantages of the two approaches. The cost benefit approach is more detailed and is able to distinguish situations where additional competition is in Australia's interest and where this is not the case. In most cases liberalisation will be in Australia's interest, but this may not be always the case. However, there can be problems with the case-by-case approach. It requires careful analysis of the economic aspects, and this does not always happen. However, the process is very susceptible to the influence of special interests, and it cannot always be assumed that these will not prevail in decision-making. The power of special interests has a history of waylaying good intentions (as the past 20 years of aviation policy have shown.)

Alternatively, Australia could opt for open skies, which means that it will always seek the more competitive outcome. The problem with this approach is that sometimes competition may not be in the national interest, at least at a particular moment. The open skies approach, which is recommended by the Productivity Commission, is simpler to operate call, and requires less assessment by the Department. The logic of the open skies approach is that it is simpler and more practical. As noted, before, Australia has opted for an open skies approach in a number of important cases. The open skies approach may be the best way of avoiding an approach which sets out as being rigorous ends up as an elaborate form of protectionism.

3 Aviation's contribution towards net zero

The Green Paper outlines a number of ways in which aviation can make a contribution towards Australia achieving net zero. Three issues which are not discussed in detail deserve attention.

SAF Mandates

One concerns the use of SAF. It is recognised that SAF will be expensive, at least for the foreseeable future. The aviation industry recognises this, and it notes that SAF will be a major contribution in terms of what aviation can do to reduce emissions. Left of their own account, airlines would not choose to use SAF. Thus, there will need to be some sort of encouragement, such as the subsidy for using it, or a tax for not using it, or a mandate. A tax would be very expensive for the industry, and a subsidy would be very expensive for the government. Thus, in practical terms, a mandate has distinct advantages even though it is not the most economically efficient means of reducing emissions. A mandate can be applied to all aviation and all airlines. Thus, there should not be a problem of competitive imbalances, as all airlines would be paying the same. A SAF will be relatively cheap to the passengers - certainly as compared to a tax. It is not surprising that airlines have been quite willing to except accept a SAF mandate given that the alternatives are expensive to the airlines and their passengers.

Treating Jet Fuel

One of the recent developments in research in reducing emissions has been the importance of removing the impurities, and specifically the sulphur component from current jet fuel. It has been suggested that quite simple adjustments to the production process of jet fuel could have a major effect on reducing emissions, especially non-carbon emissions. This is an issue which the White Paper might like to explore to some extent.

ElectroFuels

One promising area of research in low carbon fuels has been the development of electro fuels. These have been developed in some countries, notably in Germany. There have been some trials of these fuels, but things are at a very early stage. These fuels are effectively carbon free and thus very appealing, especially towards 2050, when it may be required that fuels will need to be fully carbon neutral. This has particular relevance to Australia, which relies on long range flights to Asia, Europe, and North America.

The real problem with these fuels is that they are very expensive, reflecting the fact that they require very large amounts of electricity. These fuels may cost, at current German electricity prices, something like five to six times the cost of current jet fuel. This becomes however an

opportunity for Australia. Australia appears to have a comparative advantage in electricity generation. It has been suggested that Australia can become a major provider of green steel and green aluminium, because it will be able to produce electricity much more cheaply than other countries (Garnaut, 2019). The same thing may be possible with aviation fuel. While electro fuels will be more expensive than current jet fuels, it may be the case that Australia can produce these fuels much more cheaply than other countries, especially those in Europe and Asia. This is the idea of Australia becoming an energy superpower.

In short, there may be attractive opportunities for Australia to produce electro fuels in the years to come. These fuels are very electricity intensive, and Australia may become one of the major suppliers of these fuels. This could be recognised in the White Paper, and the opportunities for industry to become aware of these opportunities and invest in research to make it possible for this to happen.

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