



LEGISLATIVE ASSEMBLY
FOR THE AUSTRALIAN CAPITAL TERRITORY

STANDING COMMITTEE ON ECONOMIC DEVELOPMENT AND TOURISM
Mr Jeremy Hanson MLA (Chair), Ms Suzanne Orr MLA (Deputy Chair),
Mr Michael Petterson MLA

Submission Cover Sheet

Inquiry into drone delivery systems in the ACT

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Submission to the Inquiry into Delivery Drones Standing Committee on Economic Development and Tourism

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This submission may be made public.

Executive Summary

1. **Moratorium:** It is so often the case with new technology that the promises of developers and the reality experienced in the community and the environment do not match. Given the substantial concerns about potential impact on quality of life for residents, on wildlife, on privacy, etc, there should be a full moratorium on any further operations of delivery drones in Canberra until truly independent reviews can be completed into a range of claims, and until a wide-reaching democratic process of consultation with the community has been undertaken.
2. **Review of emissions impact claim:** The environmental benefits in terms of greenhouse gas emissions of new methods of consumption such as drone delivery remain disputed. Claims by proponents tend to assume replacement of one form of consumption with another, instead of an increase in consumption – an assumption which does not necessarily match reality. A full, truly independent review should be undertaken.
3. **Review of impact on wildlife:** It appears that no study of the impact on wildlife in Canberra from large scale drone delivery has been undertaken. This must be done, independently, before any expansion can take place.
4. **Concerns regarding public and private space:** Communities in Canberra and elsewhere are increasingly concerned about the encroachment of for-profit companies into public and private space. No expansion of delivery drones to scale, allowing large numbers to fly over public roads and parks, as well as private homes, should be allowed in the absence of clear public support, demonstrated through thorough consultation. Individuals should have the ability to declare their homes and shared spaces “no fly zones”.



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1. Introductory remarks

Just because we can do something doesn't necessarily mean we should.

Technology gives us the power to do more things than we could have imagined. The remarkable speed of technological development means that our democratic, regulatory and ethical responses are increasingly left to play catch up in its wake.

Drones, in the right time and place, can be brilliant – even life-saving. They can, and do, play an important role in emergency services, disaster management, the creation of art, scientific research, and more. They can be, and are, also used for illegal purposes, such as smuggling.¹ The delivery of takeaway meals and coffee sits somewhere in this spectrum between life-saving and dangerous.

It is clear that regulation and oversight will be critical in the management of drone technology, from one end of the spectrum to the other – ensuring that emergency services drones can operate safely, working to prevent the use of drones for criminal purposes, and regulating use across the spectrum in between. This must be driven by independent analysis and democratic processes. We must not act on the promises of proponents alone.

In the current circumstances, where the trial in Bonython caused considerable angst, and where the promises of the proponents have not been tested, there should be a full moratorium on the expansion of the project into Gungahlin until rigorous independent analysis and consultation has been undertaken.

2. Suitability of Canberra

Term of reference 1(a)

Canberra is proud of being the bush capital. Our housing is not very dense, interspersed with plenty of trees and birdlife. With increasing urban infill, the community is insistent on maintaining green space, for quality of life and for the wildlife. People love the peace and quiet of living in Canberra compared to other capital cities.

Into this environment, Project Wing suggests bringing 11,000 flights per day by drones.² Assuming a generous average of 13 hours of operation each day, regardless of weather, this equates to one flight every 4 seconds throughout the whole day. As discussed below, the impact on wildlife of this incursion is as yet unknown, although anecdotal evidence is that the far lower number of deliveries in the Bonython trial had a substantial negative impact on bird numbers.

¹ *Delivery Drones From A Technology Assessment Perspective: Overview Report*, Institute for Technology Assessment of the Austrian Academy of Sciences,

² Evans, Steve, "Report predicts more than 10,000 drone flights a day", *Canberra Times*, December 10, 2018.



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The impact on quality of life for those living under the flight path would be dramatic. One drone flight every 4 seconds across Canberra would render the city unrecognisable.

A further concern related to Canberra is the presence in our city of politicians, diplomats, senior public servants, military personnel, and sensitive infrastructure. The impact of very large numbers of delivery drones on privacy and security in this context, as well as the broader social context, should be specifically taken into account.

3. Potential environmental impacts

Term of reference 1(d)

Proponents of new technologies often argue that they will reduce the impact on the environment, but their claims do not always stack up. They often make assumptions about replacement of other activities which are not borne out in practice, and not uncommonly count benefits in some areas without also counting disbenefits in others. The claims need to be independently verified.

3.1 Promises vs reality in greenhouse gas emissions

Project Wing's commissioned research claims that, at scale, drone delivery across Canberra could reduce emissions by 8000 tonnes a year.³ This figure is based on the extraordinary number of flights noted above – one every 4 seconds during daylight hours across the city. Fewer flights will obviously lead to lower emissions reductions.

Most critically, these projected emissions reductions are dependent on the assumption that the flights would replace deliveries by other means – primarily car or truck. However, experience around the world has shown that new technological options can increase total demand rather than replace existing demand. One such study showed that Uber, which is promoted partly on the basis of reducing congestion, actually increases congestion as it outcompetes public transport, walking and cycling more than it outcompetes taxis or personal driving.⁴ The ease of being able to order a takeaway coffee or burrito from home, to be delivered by drone, is at least as likely to increase consumption of such goods than to replace existing delivery or pick up. If even half of expected usage is additional consumption rather than replacement, the expected emissions reductions will be halved. This underscores the need for independent study and verification.

³ AlphaBeta, *Faster, Greener and Less Expensive: The Potential Impact of Delivery Drones in the Australian Capital Territory*, commissioned by Project Wing, November 2018

⁴ Wolfe, Sean, "Uber and Lyft are creating more traffic and congestion instead of reducing it, according to a new report", *Tech Insider*, July 28, 2018.



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An additional factor already experienced in Project Wing's trial is that the drones cannot carry heavy weights or large quantities. This seriously limits the service's capacity to replace any major deliveries such as family meals or groceries, and each delivery needs at least one flight – or sometimes “a fleet of drones”,⁵ with concomitantly greater environmental and social impact.

Despite these factors, it is not unlikely that there will be some emissions reductions from a shift to drone delivery, albeit likely not as substantial as those projected by proponents. But there are also other ways of achieving this positive impact without the range of negative impacts drones also cause, such as supporting and encouraging cycling and walking, redeveloping local shopping centres to support local businesses, encouraging eating in rather than takeaway, etc.

Before allowing drone delivery to take hold on the basis of claims of reduced greenhouse gas emissions, a full, independent study should be undertaken, examining realistic numbers of flights and seeking to quantify replacement vs increased demand. The results of this study, not the claims of proponents, should inform any final decision.

3.2 Impact on wildlife

When discussing impact on wildlife, proponents of delivery drones tend to refer only to the highly unlikely events of collisions with birds, or birds attacking drones. The far greater impact is likely to be the presence of large numbers of big, noisy drones scaring bird populations away from the areas where deliveries are taking place. Anecdotal evidence from Bonython certainly suggests that this is the case. I myself have witnessed it in a national park, when a smaller camera drone launched by people nearby scared away birds.

While there has been no major study of the impact of large delivery drones on bird populations, recent studies into the use of smaller, quieter scientific drones for the purposes of studying wildlife have urged caution.⁶ While scientific drones are a tremendously useful tool, they can also have negative impacts on the populations they are studying, and must be used carefully.

Before allowing drone delivery at scale in Canberra, a full, independent study must be conducted into the potential impact on wildlife – particularly bird life – in the bush capital.

⁵ Element, Bree, “Drone coffee: Does it spill? Is it hot? A special investigation”, *Canberra Times*, December 10, 2018.

⁶ Hodgson, Jarrod, and Lian Pin Koh, “A guide to using drones to study wildlife: first, do no harm”, *The Conversation*, May 23, 2016.



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3.3 Waste-streams

It is notable that, among the environmental impacts itemised in the terms of reference, the potential for dramatically increased waste streams from the increase in take-away and delivery caused by drones does not rate a mention. This is in the context of the ACT seeking to be seen as taking waste seriously by working towards banning single use plastics.

Every delivery via drone will involve at least as much packaging as a car or truck delivery, and likely more than a pick up. If, as can be expected, drone delivery increases rather than replaces consumption, the increase in packaging waste will be that much greater.

Additionally, Project Wing has proudly declared that, when only one coffee is ordered, a free plastic bottle of water is added to the order, “to balance it out”.⁷ No attempt is being made to even take into consideration, let alone reduce, waste streams.

Any serious ACT strategy to reduce waste streams should not involve supporting a technology that will increase waste streams. If drone delivery is to go ahead, the government should mandate extended producer responsibility to ensure that there is no increase in packaging waste.

4. Privacy concerns and encroachment on public and private space

Term of reference 1(g)

Communities in Canberra and elsewhere are increasingly concerned about the encroachment of for-profit companies into public and private space. Any expansion of delivery drones to scale would see large numbers of drones flying over public roads and parks, as well as private homes, filming as they go, with no oversight of what happens to the information collected by a globally dominant data company based in the USA. This concern is only greater for Canberra, as the national capital, home to politically sensitive people and infrastructure.

No expansion or permanent siting should be allowed in the absence of clear public support, demonstrated through thorough consultation. This does not entail the proponent simply turning up to Community Council meetings, but must involve government-run active approaches to the community, sharing full information, including the results of the independent studies.

Just as with the “do not call register”, people and communities should be able to designate their homes and shared spaces “no fly zones” which drone operators will be legally obliged to avoid.

⁷ Element, Bree, “Drone coffee: Does it spill? Is it hot? A special investigation”, *Canberra Times*, December 10, 2018.



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5. Summary

The Green Institute submits that, for all the above reasons:

1. **Moratorium:** Given the substantial concerns about potential impact on quality of life for residents, on wildlife, on privacy, etc, there should be a full moratorium on any further operations of delivery drones in Canberra until truly independent reviews can be completed into a range of claims, and until a wide-reaching democratic process of consultation with the community has been undertaken.
2. **Review of emissions impact claim:** a full, truly independent review into the greenhouse gas emissions impact of delivery drones should be undertaken, examining realistic numbers of flights and seeking to quantify replacement vs increased demand. The results of this study, not the claims of proponents, should inform any final decision.
3. **Review of impact on wildlife:** a full, truly independent study of the impact on wildlife in Canberra from large scale drone delivery should be undertaken. The results of this study, not the claims of proponents, should inform any final decision.
4. **Concerns regarding public and private space:** no expansion of delivery drones to scale, allowing large numbers to fly over public roads and parks, as well as private homes, should be allowed in the absence of clear, informed, public support, demonstrated through thorough consultation.
5. **No fly zones:** individuals, groups and communities should have the ability to declare their homes and shared spaces “no fly zones” which drones must avoid.