



Eve Air Mobility (Eve) welcomes the release of the Australian Government's Aviation Green Paper – Towards 2025 - and appreciates the opportunity to provide feedback. With recent innovation and progress being made in the Advanced Air Mobility (AAM) industry through alternative forms of propulsion, including sustainable aviation fuels (SAF), electric and hybrid propulsion, this is a timely revision to the white paper. The revision will play an important role as Australia continues to prepare the regulatory landscape for the aviation industry and that aviation plays a key role in Australia achieving net zero emissions by 2050.

Eve is a new, independent company dedicated to accelerating the global Urban Air Mobility (UAM) ecosystem. Benefitting from a startup mindset and backed by Embraer's more than 50-year history of aerospace expertise, Eve takes a holistic approach to the UAM industry by developing and providing an agnostic portfolio of solutions. The company is developing a fully electric vertical take-off and landing (eVTOL) aircraft, a comprehensive global services and support network, and a unique, aircraft-agnostic Urban Air Traffic Management (Urban ATM) solution tailored to the complexities of the low-level operating environment and supporting ground infrastructure.

As of November 2023, Eve has the largest public-order backlog in the industry having secured Letters of Intent (LOIs) for 2,850 eVTOLs from 28 launch customers across the globe. Our partner portfolio is comprised of major airlines, aircraft operators, ridesharing platforms, leasing companies, UAM infrastructure and technology companies. In short, it covers the full spectrum of ecosystem players, critical for the realization of electric aviation. Eve's Australian customer base includes Sydney Seaplanes, Nautilus Aviation, Microflite, and HeliSpirit who intend to operate Eve's eVTOL aircraft throughout Australia.

The Australian Government has taken an aggressive stance to achieve net zero emissions by 2050 with the Long-Term Emissions Reduction Plan that takes a technology-based approach towards achieving this goal. The plan is backed by significant government investment over the next decade that could be further leveraged through additional private and public investment for green technologies. Further, in September 2022, Parliament cemented its position with the passage of legislation that enshrines the government pledge to reduce carbon emissions by 43% by 2030 and to net zero by 2050.

As we contemplate the role that emerging aviation technology can play in achieving net zero emissions, it is important to highlight the significant work that the Australian Government, Airservices Australia and the Civil Aviation Safety Authority (CASA) has accomplished to date. Australia has been on the forefront globally with their regulatory approach for AAM operations throughout the country. During the past several years, the Australian government, Air Navigation Service Provider (ANSP) and regulator have released several critical documents in preparation for electric vertical take-off and landing aircraft to begin operations. Eve (and Embraer's innovation incubator, EmbraerX) is pleased to have been able to contribute to this work. Eve has been and remains committed to be an active contributor to Australian AAM concepts, strategy, policy, and implementation.

In December 2020, Airservices Australia and EmbraerX published their Urban ATM Concept of Operations (CONOPS). The CONOPS explored new and practical concepts to safely facilitate the introduction of the UAM industry. Using the City of Melbourne, Australia as a model, the CONOPS examined how existing air traffic management solutions can initially enable UAM operations while simultaneously preparing for scale of operations through new traffic management technologies.



In May 2021, the Australian Government published the National Emerging Aviation Technologies (NEAT) Policy Statement setting the stage for how the government will support those looking to adopt and integrate emerging aviation technologies, including AAM. With a proactive, whole-of-government approach, the NEAT Policy Statement underscored the government's commitment to this emerging industry.

In July 2022, The Remotely Piloted Aircraft Systems (RPAS) and AAM Strategic Regulatory Roadmap was published and outlined CASA's approach for these regulations for the next 10 to 15 years. CASA took a deliberate approach in producing the roadmap ensuring that this was coordinated with industry experts. With a mindset that this roadmap will need to evolve to keep pace with aviation technology advancements, the roadmap provides a plan to safely integrate drones and eVTOLs into Australia's airspace and the future regulatory system needed to enable operations to safely scale with expected demand.

Finally, in November 2022, CASA released the Guidelines for Vertiport Design – Draft Advisory Circular document under comment through the end of March. Once finalized, this document will provide guidance for the necessary infrastructure for the AAM industry.

Below is specific feedback regarding Section 6 and 9 of the Aviation Green Paper.

Section 6 - Airport Development Planning Processes and Consultation Mechanisms

Eve agrees that Urban Air Mobility (UAM) requires a long-term assessment of community noise effects. Even realizing the importance of research and studies on the impact of eVTOL noise in communities, UAM industry recognizes the difficulty of considering new regulatory metrics and thresholds in short-term.

The current lack of eVTOL operations, in practice, does not allow large-scale research to be carried out, making it a challenge to obtain experimental data about the impact of this technology (such as studies of the correlation between sound energy, noise spectral characteristics, and perception of annoyance). Research on the response of the community exposed to eVTOL operations based on video and sound demonstrations can anticipate and indicate community perception. However, this is still limited since it considers a short-term exposure. In addition, eVTOL models to estimate integrated long-term noise exposure, similar to AEDT, still need to be developed.

For this reason, a learning period is necessary after the entry into service of eVTOLs to collect data and to quantify the long-term impact of technology on the community. Public acceptance will increase as expected benefits are realized from UAM operations, including positive non-acoustic factors such as air transportation flexibility, travel time, adoption of sustainable aviation and accessibility. Acquiring knowledge of different eVTOL configurations and operational procedures is important for technology development. Community engagement will be critical towards achieving community acceptance. Eve supports Airservices Australia's new national Community Engagement Standard and related approaches being developed for UAM operations in Australia.

For UAM operations, current recommendations, and metrics, suggested by the Australian Government, can be used as a reference for impact quantification and decision-making, until data driven alternatives are discovered from experimental studies and insight perception surveys. Single-event metrics, in turn, should not be used for decision-making, as an inadequate understanding can generate restrictions, threatening the



viability of operations and affecting exposure and practical experimentation of the new UAM concept.

Eve supports the Australian Government's approach to land-use planning being one of the most effective tools to managing aircraft noise. Although eVTOLs are expected to have an overall noise footprint that is significantly quieter than helicopters of the same size, UAM will not rely solely on operations out of existing aviation facilities and will require the development of vertiports over time for a robust network that provides connectivity. This will require a collaborative approach with the private sector and a whole of government approach to ensure that the policies being developed do not limit the growth potential of UAM while also incorporating the appropriate feedback to manage noise in urban and suburban environments.

As the topic of eVTOL noise evolves and Eve recognizes how critically important this subject is for community acceptance, we continue to engage in various forums focused on this topic. The initiatives being carried out by the academic sector on this topic are important and should continue to be encouraged by industry and public organizations.

Section 9 - Emerging Aviation Technologies

How could the Australian Government create an environment that fosters private investment in emerging aviation technologies?

- Ongoing collaboration with the private sector including the development of regulations and policies aligned with industry expectations.
- Promoted the Benefits of AAM for communities and society in general
- Ensure consistency in land planning and noise management policies across local and state governments nationally.
- Adopt safe and pragmatic approaches to regulation regarding ground infrastructure and AAM aircraft operations (including training & licensing).

What skills are needed for the emerging aviation technology sector workforce?

- There is a need to create a new workforce pipeline for pilots, remote pilots, supervisors, mechanics, and additional ground or aircrew personnel. This pipeline should be tailored to this new technology. Tailoring the development of the AAM workforce to AAM requirements could create a more efficient workforce pipeline.
- Government should support the development of appropriate career pathways for eVTOL pilots.
- Government should support the development of the required training curriculum for various AAM-related careers and their implementation across the education system at the appropriate levels.
- Government should conduct initial research and data collection on the existing aviation workforce to better understand the issues being faced to inform future decision-making.

How can the Australian Government best work with states and territories to foster a supportive environment for investment in manufacturing of these technologies?

- Promote the benefits of AAM for communities and society in general.
- Ensure consistency in land planning and noise management policies across local and state governments nationally.



- Bring together AAM industry and three levels of government to share knowledge and enable development.
- Assess incentive structures at all levels of government for manufacturing and determine how best to fill in the gaps to promote manufacturing investments.

What regulatory roles in particular do stakeholders see as critical for the Australian Government to lead to enable the advantages of new technologies while managing the risks?

- Adopt safe and pragmatic approaches to regulation regarding certification and operations including pilot licensing and training requirements, ground infrastructure and other AAM aircraft operations needs such as maintenance training and licensing.

How will priorities of government agencies need to evolve as the uptake of emerging aviation technologies continues?

- Develop traffic management solutions for UAM to enable growth of the industry.
- Develop nationally consistent and streamlined approaches to land planning and noise management.
- Consistent engagement with public and private sectors along with all levels of government to understand any roadblocks or challenges, benefits to the communities and continuously reassess those priorities.
- Engagement with industry to determine what policies and regulations are needed as the industry grows and safely scales to ensure that government does not fall behind industry developments and progress.
- Assessment of government investment to understand where additional investments may be needed such as incentives, research and development, testing and other areas.

Do Government policies and regulations need to change to better support growth in emerging aviation technology manufacturing?

- Develop traffic management solutions for UAM to enable growth of the industry.
- Government policies and regulations should be timely developed and aligned with industry to reflect emerging technology developments. If the development of these regulations and policies are not developed in tandem with industry timelines, this will stifle investments and innovation in Australia.

As competition for access to airspace is expected to increase, how can government ensure fair and equitable access while maintaining safety and efficiency of this public use asset? How could a safe, open, competitive and commercial UTM market operate?

- Develop traffic management solutions for UAM to enable growth of the industry.
- Recognise that traffic management approaches for UAM are significantly different to drones.
- Many eVTOLS will be crewed aircraft. Dedicated services for crewed UAM aircraft will be needed. UTM needs to be rebranded to support all future traffic management needs and not just for uncrewed systems.



How do we achieve a balance between mitigating the negative impacts of drones and AAM while realising the potential benefits?

- Ensure that small numbers of opposition do not prevent the delivery benefits for a larger proportion of society.
- Consistent community education and engagement is critical to achieve community acceptance. This provides an opportunity to promote the benefits of UAM while also understanding community concerns so that they can be timely addressed.

What frameworks does the Australian Government need to ensure community acceptance as the sector continues to develop, and particularly if it reaches some of the more optimistic growth projections?

- Ensure an appropriate and consistent approach to community engagement across the industry.