



September 29, 2023

Submitted electronically via regulations.gov

Julie Marks
Acting Executive Director, Office of Environment and Energy
Office of Policy, International Affairs and Environment
Federal Aviation Administration
800 Independence Avenue SW
Washington, DC 20591

Re: Commercial Drone Alliance Response to the Federal Aviation Administration's Request for Comments on its Review of Civil Aviation Noise Policy [FAA-2023-0855]

Dear Acting Executive Director Marks:

The Commercial Drone Alliance ("CDA") appreciates the opportunity to respond to the Federal Aviation Administration's ("FAA") Request for Comment on the agency's review of its Civil Aviation Noise Policy (hereafter the "Noise Policy").¹

The CDA is an independent non-profit organization led by key members of the commercial drone industry. The CDA has actively participated in rulemakings and policy efforts to facilitate the safe and secure development and expansion of commercial drone operations. The CDA works with all levels of government to collaborate on policies for industry growth and seeks to educate the public on the safe and responsible use of commercial drones to achieve economic benefits and humanitarian gains, including the countless public benefits enabled by uncrewed aircraft systems ("UAS" or "drones"). We bring together commercial drone end-users, manufacturers, service providers, advanced air mobility companies, drone security companies, and vertical markets including oil and gas, precision agriculture, construction, security, communications technology, infrastructure, newsgathering, filmmaking, and more.²

¹ 88 Fed. Reg. 26641 (May 1, 2023).

² Learn more at www.commercialdronealliance.org.

I. Commercial Drones Provide Significant Environmental Benefits

The commercial use of UAS provides extraordinary benefits to the environment. A wide variety of industries are using UAS to help decarbonize and make their operations more quiet, particularly those that currently rely on larger, louder gas-powered vehicles (whether aerial or surface-based) to inspect infrastructure or deliver goods or services.

Existing commercial drone deployments have already demonstrated a net positive impact on the environment—including reductions in overall noise levels (as discussed below in Section II) and CO₂ greenhouse gas emissions. Relative to decarbonization, for example, two 2021 studies found that drone-based delivery reduced delivery carbon emissions and energy usage by 96-98% compared to cars, a significantly larger reduction than switching to EVs.³ A Virginia Tech drone delivery study indicated that enabling drone delivery in a single U.S. metropolitan area could avoid up to 294 million miles per year in road use; that is equivalent to taking 25,000 cars off the road and reducing carbon emissions by up to 113,900 tons per year.⁴ This reduction of carbon emissions is the equivalent of planting 46,000 acres per year of new forest.

Additionally, UAS play a key role in supporting and encouraging the transition from fossil fuels to renewable energy. UAS enable increased efficiencies in both the construction and operation phases of renewable energy plants – such as solar, wind, nuclear, and hydro. In short, UAS make renewable energy projects more economically viable and cost-effective by facilitating less-costly inspections of such infrastructure.

Commercial UAS also are used to reduce GHG emissions in the oil & gas industry through early detection of loss of containment (e.g., oil leaks) and fugitive emissions (e.g., methane gas leaks). UAS also reduce the carbon footprint associated with in-field time dedicated to historical monitoring, inspection, and maintenance operations in industrial markets. There are over 900,000 well pads and 500,000 miles of pipeline in the United States. Those assets need to be monitored for defects and leaks to properly assure safety and reduce GHG emissions.

Industries are counting on UAS to help decarbonize their operations, and integrating UAS into the supply chain and the American economy can play a central role in helping achieve climate and sustainability goals. Given the environmental benefits of commercial drones, moving the UAS industry forward is critical in achieving better environmental outcomes for the Nation.

In addition to environmental benefits, commercial drones offer significant life-saving, economic, and societal benefits, including:

- Creating jobs,

³ Rodrigues et al, "[Drone flight data reveal energy and greenhouse gas emissions savings for small package delivery](#)" (Cornell Univ. arXiv.org, Nov. 2021); Zipline, "[A First-Ever Look at the Sustainability of Autonomous Aerial Logistics](#)" (Zipline Blog, Nov. 2021).

⁴ Virginia Tech Office of Economic Development, "Measuring the Effects of Drone Delivery in the United States," (September 2020), available at: <https://vtechworks.lib.vt.edu/handle/10919/100104>.

- Enhancing worker safety,
- Fighting wildfires,
- Promoting infrastructure resilience and revolutionizing inspections of critical infrastructure,
- Promoting equity and expanding equitable and efficient access to critical supplies (e.g., by expanding access to services for underserved or remote communities),
- Enhancing public safety, homeland security, and emergency response,
- Ensuring America’s competitiveness in the global economy and leadership in global aviation, and
- Supporting the U.S. economy, generating tremendous economic value, and facilitating commercial deliveries.

II. Enabling Expanded UAS Operations by Streamlining Noise-Related Review and Approval Processes

While the safety, efficiency, environmental, and economic benefits of UAS operations are vast, and while the UAS industry is prepared to operationalize and scale in the United States as it has scaled around the world, policy has lagged behind technology and integration efforts have lagged behind the pace of innovation. This is in large part due to limitations of the regulatory framework and the federal government’s struggle to move nimbly. This regulatory paralysis has limited the ability of the commercial UAS industry to operationalize and scale domestic operations in the United States.

Broadly enabling scaled UAS operations in a safe and secure manner is critical to unlocking the aggregate benefits of using UAS for many commercial and public safety tasks. As the FAA has acknowledged, one of the primary factors “that significantly influences the capacity and flexibility of the national aviation system is aircraft and vehicle noise (collectively, “aircraft noise”).”⁵ Accordingly, we urge the FAA to streamline and improve UAS approval processes that relate to noise, including National Environmental Policy Act (“NEPA”) review and noise certification.

As the FAA is aware, several aspects of UAS operations proactively mitigate potential noise impacts:

- UAS are generally small and lightweight.
- UAS use electric energy sources and have very limited noise footprints.
- UAS are typically quieter than existing ground or aerial transportation and inspection modes powered by fossil fuels.
- Many UAS will have only *de minimis*, if any, noise impacts when operating in certain environments (e.g., inspecting a bridge with surrounding noise of vehicle traffic; operations in urban areas; or operating on closed- or restricted-access industrial sites such as power plants or solar farms).

⁵ FAA, “The Foundational Elements of the Federal Aviation Administration Civil Aviation Noise Policy,” at p. 2 (April 2023).

- UAS are more environmentally friendly than existing loud transportation and inspection modes powered by fossil fuels, and by replacing those modes will generally have a beneficial impact on communities in terms of overall environmental impacts.

A. Streamline NEPA Review

Given the benefits of UAS to the environment, including related to noise, the FAA should streamline and improve its UAS-related environmental review processes under NEPA.⁶ Despite the best efforts of some at the FAA, the agency's environmental review processes related to UAS have lacked resourcing and regulatory clarity, hindering industry's ability to scale and, paradoxically, impeding the realization of environmental benefits. To aid the scaling of new technologies, we urge the FAA to expedite its development and publication of UAS-specific NEPA guidance and implementation procedures for UAS operational approvals, including programmatic approaches to enable scaled operations where operating parameters are similar. In developing these procedures, the FAA should account for the reduced noise impact associated with industrial inspection operations, particularly over closed- or restricted-access sites. We further urge the FAA to consider additional categorical exclusions based on previously prepared and finalized environmental assessments completed by the agency.

Clear, right-sized procedures will help UAS manufacturers and operators and the communities they serve assess the potential environmental impacts, including noise impacts in different operating contexts, such as limited scale operations in small communities, more broadly scaled drone delivery operations, and operations over industrial sites closed to the public with high levels of ambient noise.

B. Suspend Noise Certification Requirements

As CDA has urged elsewhere,⁷ the FAA also should improve the UAS type certification process, including processes related to noise certification. For more than five years, the FAA has struggled to adapt the existing and burdensome airworthiness process to UAS. To facilitate timely issuance of airworthiness approvals for UAS in the near-term, the FAA should exempt UAS from noise certification requirements due to their proportionally small profile.

Under the current regulatory process, the FAA may only issue an original type certificate for an aircraft after the FAA determines that the aircraft meets prescribed noise standards. There are no prescribed noise standards for UAS, which means the FAA needs to undertake a lengthy (years-long) and resource-intensive rulemaking process for every individual UAS going through the type certification process to establish custom noise standards on a case-by-case basis. Rather than requiring the FAA to establish

⁶ See FAA Order 1050.1F Desk Reference, <https://www.faa.gov/media/31111>.

⁷ See *generally* Regulatory Challenges (Working Group 1.3.) of [UAS Beyond Visual Line-of-Sight Operations Aviation Rulemaking Committee Phase I Report, January 27, 2022](#); [FAA Reauthorization 2023, Proposals of the Commercial Drone Alliance \(June 28, 2022\)](#).

unique noise standards for every single type of UAS going through the certification process (i.e., rules of particular applicability), the FAA should gather data necessary to establish generally applicable noise standards for UAS. Until such a time that generally applicable noise standards are developed, the CDA urges the FAA to suspend or otherwise waive noise certification requirements for UAS seeking airworthiness certification. This represents a straight-forward and immediate opportunity to streamline and modernize our regulatory system in a manner that can yield significant short-term gains for society. The CDA has urged Congress to direct the FAA to take these steps, but there is nothing that requires the FAA to wait for congressional action. The FAA can take steps now to improve and streamline the airworthiness process as it relates to noise certification.

III. Analysis of Existing Noise Metrics and Noise Thresholds

The CDA appreciates the FAA's current efforts to strengthen its aircraft noise-related data, guidance, and communications with the public about aircraft noise exposure, and to look at noise thresholds in terms of significant noise exposure for actions subject to environmental review and in other contexts. These efforts have the potential to help accelerate the integration and public acceptance of commercial drone operations here in the United States—operations that provide extensive benefits and essential services in a safe, environmentally responsible, efficient, and cost-effective manner. Appropriate and effective application of the FAA's Noise Policy is a key part of enabling scaled UAS operations given the role that noise considerations play in various FAA approvals, including in noise certification and environmental review.

In addition to streamlining noise-related approval processes to enable scaled UAS operations as outlined above, the CDA urges the FAA, at a minimum, to ensure that any revisions to the Noise Policy do not adversely impact UAS operations or allow noise considerations to become a barrier that delays UAS certification and related approval efforts.

The FAA currently uses the Yearly Day Night Average Sound Level ("DNL")⁸ as the primary decision-making metric for evaluating noise. At this time, the CDA supports the FAA's continued use of the cumulative DNL noise metric, which has afforded the FAA the ability to apply a uniform metric to evaluate noise from all types of aircraft and operations. While individuals and communities may have different tolerances for or sensitivities to aviation noise, it is reasonable for the FAA to apply a standard metric when assessing noise to ensure equal application of the Noise Policy. Agency actions affecting aviation noise are appropriately informed by the FAA's uniform noise measurement system, one that UAS companies have operated under since the industry's inception. The CDA is not opposed to FAA's examination of companion or alternative noise metrics, provided they do not adversely impact the UAS industry or hold UAS aircraft to more stringent noise thresholds as compared to other aviation operations.

⁸ See 14 C.F.R. § 150.7 (DNL means "the 24-hour average sound level, in decibels, for the period from midnight to midnight, obtained after the addition of ten decibels to sound levels for the periods between midnight and 7 a.m., and between 10 p.m., and midnight, local time.").

The CDA also supports continued use of 65 DNL as the significance threshold that the FAA applies to evaluate noise impacts as part of the agency's NEPA environmental review process.⁹ To date, the FAA has completed 18 environmental assessments ("EAs") in connection with UAS approvals, including:

- FAA's approval of amendments to a UAS operator's Operations Specifications (OpSpecs) for Wing, Zipline, Amazon, and other UAS package delivery companies;
- FAA's issuance of a Certificate of Waiver to Florida Power & Light Company to conduct beyond visual line of sight inspection of utility infrastructure; and
- FAA's approval and establishment of FAA-Recognized Identification Areas ("FRIAs").

In each case, the FAA concluded that UAS operations were well below the agency's 65 DNL significance thresholds for noise. In fact, in each of the EAs involving commercial drone operations, the FAA issued a Finding of No Significant Impact ("FONSI") to the natural environment or surrounding population as a result of the proposed operations.¹⁰

These FONSI's are consistent with findings made in other studies evaluating UAS noise. For example, one study found that for en route operations, certain UAS with the loudest measured noise level would need to fly at least 3,686 operations over a 24-hour period to exceed the FAA's threshold noise level for aircraft.¹¹ For delivery operations, the loudest UAS in the same study would have had to fly an average of 77 operations a day at a single location over an entire year to exceed this level.¹² In one CDA member's noise certification test, the altitude for the testing had to be lowered from the standard 250 feet AGL target altitude simply in order to sufficiently distinguish the drone's noise emissions from the ambient noise.

To the extent the FAA considers alternative metrics or modifications to the significant noise impact threshold, the CDA urges the FAA to ensure that such policy changes do not disproportionately impact the UAS industry. In light of the FAA's obligation under NEPA to consider all direct, indirect, and cumulative environmental effects of a proposed decision or action,¹³ it is critical that changes to the Noise Policy do not disparately impact the commercial drone industry or serve as a barrier to new entrants. Members have reported that noise test campaigns carried out in alignment with FAA guidance amounted to costs of around \$50,000 to complete. This expense could impose an unnecessarily large burden on smaller UAS companies, which has

⁹ See FAA Order 1050.1F Desk Reference, <https://www.faa.gov/media/31111>.

¹⁰ See https://www.faa.gov/uas/advanced_operations/nepa_and_drones.

¹¹ See FAA's Operations Over People ("OOP") Rule and "Documentation Supporting Application of a Categorical Exclusion), Appendix A, Docket FAA-2018-1087 (relying on noise data from FAA UAS National Airspace Integration Pilot Program, "Noise Measurement Report: Unconventional Aircraft – Choctaw Nation of Oklahoma; July 2019" (DOT-VNTSC-FAA-20-03) (May 2020)).

¹² *Id.*

¹³ See 87 FR 23453, National Environmental Policy Act Implementing Regulations Revisions (April 20, 2022).

implications for the future scalability of the UAS industry as a whole. CDA believes that the FAA could gain needed insight into any noise emissions with a traditional Sound Level Meter without this heightened level of precision, which would in turn make better use of UAS companies' available resources.

The FAA has made strides in the last two years to evaluate the noise impacts of UAS operations. As the FAA evaluates its Noise Policy, it must ensure that any changes do not inhibit the FAA's ability to leverage its existing UAS-related environmental review findings to-date. The FAA should also adopt programmatic review processes for conducting UAS-related environmental reviews. As UAS technology continues to evolve (including with respect to noise level reduction) and commercial drone use expands in the United States, the use of programmatic environmental analysis approaches will support the successful deployment of these technologies which bring countless public benefits.

IV. Community Engagement

The CDA recognizes that public perception and acceptance—in terms of how the public responds to and experiences UAS operations in their communities—is important to the long-term success of the commercial drone industry. This includes public perception and disclosures around noise as well as the interests/concerns of communities in the vicinity of UAS operations, which FAA is currently evaluating under this Noise Policy review. The commercial drone industry is a robust contributor in this space, having worked with many stakeholders on various community outreach efforts, including through the UAS Integration Pilot Program (“IPP”), BEYOND, and other programs. Hundreds of communities competed for the opportunity to be part of the IPP, evidencing strong interest and excitement in bringing UAS technology to their constituents. While the CDA is not advocating for the use of specific alternative noise metrics at this time, we agree that it is essential for the FAA to consider what its noise metrics communicate to impacted communities.

V. Conclusion

The CDA appreciates this opportunity to comment on the FAA's Noise Policy, and commends the FAA's effort to review its data, guidance, and communications with the public regarding noise. The CDA looks forward to continuing to work with the FAA to accelerate the safe and secure integration of commercial drones into the National Airspace System, which will unlock the benefits of commercial drone operations for the American people.

Respectfully submitted,



Lisa Ellman
Executive Director
Commercial Drone Alliance