



KPMG 2024 Global Sustainability in Aerospace and Defense report

Executive summary



The KPMG 2024 Global Sustainability in Aerospace and Defense (A&D) report provides an update on current challenges and opportunities as the industry transitions toward a more sustainable future. Competition among A&D companies will remain a key driver in helping the industry to improve its sustainability. However, recent findings in the report suggest that a collaborative approach involving both public and private sectors is now being recognized as equally important.

Conducted in March 2024, the survey is based on responses of over 100 senior executives from major A&D organizations and supply chain participants in 20 countries, territories and jurisdictions around the world.

To gain deeper insights, we also conducted interviews with KPMG clients and subject matter specialists who have provided their views on the industry as it progresses on its sustainability journey.

Key findings:

The A&D sector needs to grow more sustainable even while growing larger

Aviation contributes about 4 percent to global warming to date.¹ The defense industry and the global armed forces produce about 6 percent of GHG emissions.²

In the A&D industry, the task of growing greener while growing larger has created a number of significant issues. Asked to name the three top challenges to their organization in achieving net-zero goals, respondents in our survey cited transformational changes involving technology, business models, and processes (68 percent); workforce and skills shortages (60 percent); economic factors such as inflation and cost of debt (51 percent); regulatory changes (47 percent); and the cost of decarbonization (47 percent).

¹ "Environmental Research Letters, "Quantifying aviation's contribution to global warming," 2021. See also: NOAA Research News, "Aviation is responsible for 3.5 percent of climate change, study finds," 2020

² Scientists for Global Responsibility, "Estimating the Military's Global Greenhouse Gas Emissions," 2022

Most A&D companies (61 percent) are still developing their strategies for sustainability.

Our survey results found that a well-defined strategy for sustainability is still a work in progress for many A&D companies. Most respondents (61 percent) said that they were only “somewhat ready” or “working on it” in terms of being prepared for environment, social, and governance (ESG) changes. Only 15 percent of respondents reported being fully ready, and 7 percent indicated their organization was “unprepared”. This deliberate pace in strategy development by A&D companies is understandable, given the complex challenges and potential risks involved in developing a strategic approach for sustainability.

Progress depends on close collaboration across the whole ecosystem and supply chain.

The importance of collaboration in sustainability cannot be underestimated. Manufacturers, supply chain participants, fuel suppliers, governments, research institutions and other A&D stakeholders need to work together across the A&D ecosystem if they are to achieve net zero by 2050. In our survey, 47 percent of respondents cite collaboration as a top enabler for reaching their decarbonization goals. “Without collaboration and alliances across industry networks, net zero goals might not be achieved in the sector,” adds Grant McDonald, KPMG International. “This includes alliances between different organizations to increase innovation as well as government support that encourages collaboration. New ideas for A&D can also come from other sectors such as IT, automotive, telecommunications or maritime shipping.”

Effective supply chain management involves consistency as well as supplier due diligence, visibility, transparency and responsible sourcing.

Aerospace and defense companies are supported by large, complex supply chains that influence sustainability strategies. In our survey, 81 percent of respondents selected supplier due diligence, visibility and transparency as actions that could enhance supply chain sustainability. Responsible sourcing was chosen by 74 percent of respondents.

Because of the global nature of these supply chains, geopolitical uncertainties can reveal supply chain vulnerabilities and disruptions between the OEMs and their suppliers. To strengthen supply chain sustainability, airframers and Tier 1 suppliers can consider acquiring materials or technology at strategic parts of the supply chain to reduce risk of insufficient supplies.

Innovation depends on collaboration among governments and companies.

In our survey, 61 percent of respondents chose R&D innovation and new technologies as a key opportunity in their organization’s progress toward net-zero goals. Innovation provides another example of public and private sectors working together to advance sustainability in the A&D industry. According to estimates, an investment of around US\$5.3 trillion will be required to decarbonize the aviation sector, with a high level of dependence on public funding during the initial stages of technology development.³ A&D companies are investing in new propulsion technologies (electric and hydrogen-powered), alternative energy sources

(SAF and hydrogen), and changes in overall airplane configurations and operations to reduce emissions and improve overall efficiency.

Governments play a dual role in decarbonization with both regulatory mandates and financial incentives.

One of the clearest signals from survey respondents was the belief that current tax policies and incentives are insufficient to support sustainability for the sector (67 percent). However, when the survey asked about the top enablers for decarbonization in their organization, 55 percent chose “government support” and 47 percent chose “government demand for the development of low-carbon solutions.” That is to say, governments were seen by A&D companies as both the ‘carrot’ and the ‘stick’ in reaching their sustainability goals.⁴

The roles of chief sustainability officers (CSOs) and other sustainability leaders are rapidly changing and growing in importance.

CSOs are becoming the agents of change.

Our interviews with chief sustainability officers (CSOs) and other executives confirmed the importance of corporate leadership in achieving sustainability. In the past, sustainability initiatives were sometimes supported by the finance or legal function. However, these professionals are now taking a more independent and strategic role as educators and communicators, helping their organizations better understand the importance of sustainability and how their organization can contribute to a greener world in the years ahead.

³ ICAO, “Chapter One: Aviation and Environmental Outlook, Financing aviation decarbonisation”

⁴ “Carrots & Sticks: Beyond Disclosure in ESG and Sustainability Policy, Annual Report,” September 2023

Key takeaways



Survey Insights

Aviation contributes about 4% to global warming to date. The global armed forces produce about 6% of GHG emissions.



81% of respondents selected supplier due diligence, visibility, and transparency as actions that could enhance supply chain sustainability.

61% of respondents said that they are still developing their strategies for sustainability. Only 15% say they are "fully ready."

47% of respondents cite collaboration as a top enabler in developing new technologies to help reach their decarbonization goals.

Innovation depends on collaboration among governments and companies.



Governments play a dual role in decarbonization with both regulatory mandates and financial incentives.

The roles of CSOs and other sustainability leaders are rapidly changing and growing in importance.



Challenges

- Rapid growth in aviation demands and military spending
- Increased government regulations



- Size, complexity and scope of A&D supply chains
- High costs and scalability issues
- Feedstock and materials sourcing issues
- Scope 3 data collection and strategy implementation



- Knowledgeability of strategic requirements
- Capacity/knowledge of sustainability teams
- Business focus and priorities
- Continuously changing regulations and policies

- Complexity of collaboration among companies, governments, military, academia, etc.
- Lack of communication among internal functions and other organizations
- Regulatory uncertainties

- Research and development costs
- Price pressures in commercial markets (especially for aerospace)
- Operational and performance requirements (especially for defense)
- Implementation costs/complexities
- Supply chain reorganization due to new products and manufacturing processes
- Regulatory readiness for alternative fuels



- Increasingly rigorous environmental regulations
- Insufficient tax incentives and funding

- Lack of understanding by executives and staff about sustainability
- Keeping the organization up to date on evolving issues
- Public perceptions of the A&D industry



Opportunities

- Government support for sustainability solutions in A&D
- Industry collaboration
- Technological innovation

- Increased due diligence in vetting suppliers
- Enhanced monitoring of supply chain activity
- Improved supply chain management software solutions
- Greater adoption of responsible sourcing

- Executive buy-in and stakeholder support for strategy development
- Close integration of sustainability strategies with business models and long-term objectives
- Understanding of sustainability as a competitive advantage



- Government support for collaborative efforts
- Partnerships and M&A transactions
- Industry-led collaborations

- Increased manufacturing efficiency
- More efficient airplane engine/wing design
- Lower costs for alternative fuels through scaling and increased adoption
- New growth markets and products for low-carbon solutions

- Government funding and tax incentives
- Leveraging regulatory incentives through early adoption

- Sustainability leaders acting as communicators, trainers, educators, agents for change, and champions for sustainability

Conclusions

Reaching net-zero emissions by 2050 is a challenging target but not an impossible one to reach. The top three enablers for success cited by respondents are government support (64 percent), innovation (61 percent) and stakeholder collaboration (57 percent).

Points to consider for collaboration

Collaboration is a proven way for organizations to share experience, expertise, resources, industry knowledge and leading practices, while also sharing the burdens of capital investment and risk. Organizations can consider the following points in developing and executing a strategy to support sustainability:

1. Develop a strategy that incorporates collaboration from the ground up, not as an add-on to a purely competitive approach.
2. Avoid zero-sum thinking (if one side wins, the other loses) and focus instead on cooperation and mutual benefits.
3. Identify areas where investments in capital, resources, research, etc. can be shared to help mitigate risks.
4. Maintain ongoing communications with other stakeholders to support transparency and strengthen relationships.
5. Share, as appropriate, best practices, lessons learned, new processes and innovations shown to support sustainability.
6. Develop a consistent approach in dealing with suppliers, vendors and business associates.
7. Support industry associations that encourage collaboration and provide a public voice for the industry.

With the aid and guidance of today's sustainability leaders, the A&D industry can become a model for other industries as the world works to reach its net-zero goals in the 21st century.



How KPMG can help

In an evolving A&D industry marked by significant challenges and opportunities, KPMG professionals aim to be at the forefront as a leader to help provide insight, strategy and actionable guidance. We understand the intricacies of the industry and the necessity for businesses to adapt and thrive amid these complexities.

The impact of ESG issues cannot be denied. That's why we're committed to strengthening our global ESG offering — backed by the recognition of our responsibility to help build a better future for all. ESG is the watermark running through our global organization — from empowering our people to become agents of positive change, to providing innovative approaches and services to KPMG clients.

KPMG has been recognized as a global leader in the Verdantix Green Quadrant: ESG and Sustainability Consulting 2024. KPMG has also been named a global market leader by ALM Intelligence in their latest Pacesetter research, "ESG: Environmental, 2023-2024."

KPMG member firms provide audit, tax and advisory services to A&D companies around the world. KPMG are leaders in identifying critical trends in the A&D sector — sustainability, innovation and efficiency, and transforming them into actionable strategies. Our global A&D practice helps top companies in the industry plan and execute strategies to make the most of these trends. Our data-driven approach allows us to quantify the impact of trends such as sustainability for Tier 1, Tier 2, Tier 3 and other players so they can identify and prioritize emerging opportunities and requirements. KPMG colleagues assist clients in defining the investment and development roadmaps to maximize and pursue these opportunities.

In addition, KPMG firms support clients with operating model and business transformations to prepare their organizations for building new types of products and doing business in new ways.



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