

Airbus Defence and Space

Airbus Aerial is an image and data analytics services company that was launched in 2017. It integrates data from a broad array of aerospace assets including satellites and unmanned aerial vehicles. At the end of 2017, it employed 22 people.

c. Environmental Matters

The industry faces a variety of environmental challenges, including climate change, and Airbus invests and cooperates with stakeholders across the value-chain in researching and implementing innovative ways to meet them.

As aviation represents around 2% of global man-made CO₂ emissions, Airbus recognises its role in reducing the global environmental footprint of the sector and the importance of staying in line with the global 2°C trajectory. This is done through continually seeking to reduce the carbon intensity of Airbus' industrial operations and working together with Airbus' suppliers, industry and government stakeholders in its aim to find sustainable solutions to reduce the environmental impact of its products, deliver its ambitious sectorial emission reduction goals, as well as preparing adaptation to the effects of climate change on its operations.

One of these challenges is the elimination of substances from its products and processes that may pose a risk to human health or the environment, which will be addressed later in this section.

1. Environmental Management at Airbus

"Shaping our future" means that Airbus develops products and services taking into consideration current and foreseeable future environmental challenges for future generations and with long-term value creation in mind. Incorporating environmental values into its core policy not only improves the management of operational business risks and opportunities but also enhances the long-term sustainability of its business.

Alongside the Company's environmental policy in pursuit of eco-efficiency, Airbus has developed an aspirational long-term ambition for 2050 setting the direction for the Company regarding environmental matters, providing a framework to set up concrete environmental objectives for the short- and mid-term.

The Company's **2050 Ambition** covers the three following complementary directions:

- operating Airbus sites without impact on climate change by eliminating greenhouse gas emissions, with zero air and water emissions, zero waste to landfill and minimal natural resources consumption;
- delivering products which provide maximised value to customers whilst meeting expectations of society through minimised impact on climate, air emissions and noise, management of substances of concern aiming at their elimination and maximised reliability, throughout the product lifecycle;

- engaging the supply chain in the Company's ambitious objectives.

In 2015, an Environment Steering Committee was created to manage all matters related to the environment. The Steering Committee meets four times a year and is composed of the heads of Environment for Airbus Commercial Aircraft, Helicopters and Defence and Space, as well as a representative from the R&S department. Its role is to develop and define the environmental policy and associated objectives and agree on a common approach for the management of the environment throughout the Company.

Airbus has put in place a robust **Environmental Management System (EMS)** centrally and within its Divisions. One of the functions of the Airbus EMS is to track the enhancement of its environmental performance as it includes identifying, managing, monitoring and controlling an organisation's environmental issues. Airbus' EMS is guided by the latest version of the international environmental standard, ISO 14001: 2015 version. The 2015 version has a broader scope than previous standards, and Airbus was among the first aerospace companies to adopt it.

Environmental risks and opportunities are managed following the Company's ERM process. Risks and Opportunities are reported quarterly to the Executive Committee of each Division and top risks are consolidated at Company level to be brought to the attention of Airbus' top management.

On an annual basis, Airbus undertakes an extensive exercise to collect, consolidate and report the Company's environmental performance data. Quantitative data is gathered – energy and water consumption, CO₂ and VOC emissions and waste generation – as well as qualitative data – certification, incidents, activities on site. This enables Airbus to measure its environmental impact, follow its performance and communicate information on environmental matters to internal and external stakeholders. The Company's commitment to eco-efficiency is demonstrated through its transparent reporting.

In the future, the reporting of environmental indicators will include relevant categories of Scope 3 emissions for Airbus' operations. This will provide greater understanding of the impact on the environment of activities under Airbus' control.

Working in Cooperation

Airbus understands the importance of working together with other stakeholders to find solutions.

Engagement within the International Aerospace Environmental Group (IAEG). Airbus is a Founding Member of IAEG and participates in different areas of IAEG, such as greenhouse gas emissions, substances management, substitution technologies and supply chain to share practises and promote development of global standards for implementation of environmental requirements in the aerospace industry.

Information on Airbus Activities

1.1 Presentation of the Company

Airbus is an active board member of the Air Transport Action Group (ATAG) which sets goals and mobilises action on strategic aviation issues such as climate change through involvement throughout the industry (*i.e.* with other manufacturers, airlines, airports, air traffic management).

Aviation is a global industry and requires global solutions. ICAO, a specialised agency of the UN, has a proven track record of delivering robust aviation environmental standards and guidance (*i.e.* air quality, noise, CO₂). Airbus has shown a long-term commitment to support the need for global civil aviation governance, with ICAO as its corner-stone, working together with stakeholders across the aviation industry and with the relevant governmental agencies.

Airbus, with the rest of the aviation industry, has supported the ICAO agreements in 2016 on the CO₂ standard and Carbon Offsetting & Reduction Scheme for Aviation (CORSIA), the new international carbon offsetting scheme for aviation.

Airbus continues to proactively support emissions and noise reduction once its aircraft go into service. This could be through fuel efficiency services, weight saving projects, retrofits (*i.e.* sharklets) and ground operations (*i.e.* eTaxi). In 2015, Airbus launched the Sustainable Aviation Engagement Programme, establishing long-term cooperations with various Airbus operators to offer ways to reduce their environmental footprint.

Clean Sky was at the time of its launch the largest European research programme funded by the EU, developing innovative, cutting-edge technology aimed at reducing CO₂, gas emissions and noise levels produced by aircraft. As part of this programme, Airbus developed the Bluecopter concept, which demonstrates a number of fuel saving and noise reduction technologies. It is already the quietest helicopter worldwide in its category, and also the first to reach the noise category A+. The demonstrator underwent a stringent flight test campaign until April 2017 in order to validate the effectiveness of the technologies developed in the frame of the CleanSky programme.

In September 2017, the Company used a modified A340 aircraft to test the laminar flow concept developed by Clean Sky. The BLADE project aims to reduce wing friction by 50% and reduce CO₂ emissions by up to 5%.

2. Environmental Concerns

Regulated substances across its products' lifecycles

Aerospace manufacturing, operations and maintenance rely on certain regulated substances to achieve a high level of quality, safety and reliability accounting for lengthy product lifecycles. Some of these substances are or may in the future be classified as substances that may pose a risk to human health or the environment. These type of risks depend on many factors such as the category of classification, but also the operational use of these substances under applicable laws/regulations laying down occupational exposure limits, and the lifecycle stage of the products.

If a substance not yet identified is classified in the future as one that may pose a risk to human health or the environment, this may give rise to substantial costs for Airbus to manage it, including, for example, research and development (whether alone or in cooperation with other stakeholders) of suitable alternatives, testing, qualification and certification costs. Any reputational risk and potential claim against Airbus that may result will also need to be managed.

Airbus continues in its activity (also in cooperation with industry stakeholders) to identify new technologies and solutions that avoid use of substances classified as posing a risk to human health or the environment, whilst satisfying airworthiness, certification and performance requirements. Airbus also engages with suppliers to promote the adoption of a similar approach through regular communication and, more widely, by working together with the aerospace industry to promote worldwide harmonisation of regulations and ways of working, taking into account the sector's safety and lifecycle specificities.

Airbus identifies, tracks and declares regulated substances. The Company has already substituted certain substances of concern or developed replacement technology where suitable alternatives have been found, such as some ozone-depleting substances (ODS), fluorinated gases, or substances of very high concern (SVHCs) under the European regulation REACH. On top of all applicable regulatory requirements, more than 100 substances have been targeted by Airbus for substitution and the Company is always looking for new solutions. For example, Airbus Commercial Aircraft launched the Airbus chromate free project in 2006. The project has so far delivered substitution solutions for a considerable number of usages and continues efforts to substitute the remaining ones. One of the first steps was to deploy chromate-free surface protection systems, with among others, operational changes and replacement within Airbus' production lines. Over 100 suppliers are now "qualified" to use chromate-free pickling before anodisation.

Within IAEG, Airbus contributed to the creation of the IAEG "Aerospace and Defence Declarable Substances List" (AD-DSL) and the associated declaration standard (IPC-1754). The AD-DSL provides an initial common list of chemicals/substances identified and reviewed by IAEG as used within the aerospace and defence supply chain and thus will make it easier to work with regulatory agencies to appropriately manage regulated substances and chemicals used in manufacturing.

Surface modification by laser is a new technology developed by Defence and Space to replace the use of substances for some processes, notably for pre-treatment before bonding. This technology is now available for some Space Systems applications and is planned to be implemented into the serial production of flight hardware for New Generation Synthetic Aperture Radar satellites (NGSAR).