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AIRBUS RESEARCH & TECHNOLOGY

Since the introduction of jet engine aircraft, the air transport industry has achieved enormous improvements in economic efficiency and environmental performance of aircraft. For instance, in the last 40 years, the aviation industry has cut fuel burn and CO_2 emissions by 70%, NOx emissions by 90% and noise by 75%. During that time, innovation has been a key driver in Airbus' success. From the A300 to the A350 XWB, Airbus has been continually implementing new ideas.

Environmental and safety considerations have long been an integral part of the company's activities at all levels, and are a key priority in the development of all new techniques, products and processes. Through innovation, and out-of-the-box thinking, Airbus will continue to meet its eco-efficiency goals, and ensure that air travel continues to be one of the safest, and most eco-efficient means of transportation. That's where Research and Technology (R&T) comes in. Innovation is the backbone of Airbus' ongoing success and the key to its future

Working together with governments, industries, research institutes and universities around the world, Airbus is focused on finding the best solutions for some of aviation's most important questions and hence meeting and even going beyond our customers' and society's needs. To satisfy these, the technologies and innovations need to deliver a significant improvement, a step-change, in efficiency and performance and will benefit and contribute to the growth of the industry on a global scale.

More than 3,000 people at Airbus are working either directly or indirectly on over 400 R&T projects that are regrouped into 100 major ones to further improve efficiency. Above 90 percent of Airbus' annual R&D investment of over two billion euros has environmental benefits for current and future aircraft. Airbus files more than 600 patent applications each year.

Over the next 40 years, R&T cooperation and investment will be even more crucial because energy sources are set to become increasingly scarce and expensive, yet fuel remains the single biggest element of airline operating costs (30% for Single Aisle / 40% for Long Range aircraft), so reducing consumption (and therefore emissions) and finding new alternative sources remains a key industry driver. The aeronautic industry needs further step-changes in economic and environmental performance throughout the aircraft lifecycle to address the challenges.

Airbus' R&T efforts are achieved on a global scale. Not one single party or nation working on its own could have achieved what we have collectively achieved. R&T investment stimulates economies: It is estimated by governments and institutions alike that a €100M investment in aeronautic R&T raises GDP by €700M over 10 years, and has a spin-off effect spurring breakthroughs in many other industries. Secondarily R&T ensures stability: investments drive economic growth, creativity and education by reaching the younger generations and encouraging them to choose the science and engineering fields.

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CleanSky

Another important and innovative development was the official start of work as part of the seven-year European Union “CleanSky” Joint Undertaking in which Airbus and Saab will lead the Smart Fixed Wing Aircraft (SFWA) Integrated Technology Demonstrator (ITD). The programme's objectives are closely related to the four environmental challenges set by the Advisory Council for Aeronautics Research in Europe (ACARE): to reduce fuel consumption and CO_2 emissions by 50 percent to reduce perceived external noise by 50 percent and to reduce NO_x by 80 percent by the year 2020.

In short, Airbus places priority on R&T topics which we believe can be game changers in the area of large commercial aircraft for the future of Air Transport. The key motivation is to really achieve a substantial improvement with respect to environmental issues. For example:
-- To lower the drag of the aircraft and to thereby improve the efficiency;
-- To include and to integrate the most advanced and efficient engines that we can find on the market. And if they are not on the market, then Clean Sky aims to be the major enabling programme to encourage the engine manufacturers to develop them.”

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