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LONDON, Oct. 26, 2021 /PRNewswire/ -- Today, the Chief Technology Officers (CTOs) of seven of the world's leading aerospace manufacturers have reaffirmed their commitment to achieving more sustainable aviation and to reaching industry-wide Air Transport Action Group targets in a joint statement. This statement updates a commitment made by a unified group of CTOs in June 2019 as part of a shared position to support the aviation sector's ambition to achieve net-zero carbon emissions by 2050.

The CTOs of Airbus, Boeing, Dassault Aviation, GE Aviation, Pratt & Whitney, Rolls-Royce, and Safran will also issue a call to action to policymakers, research institutions, suppliers, fuel producers and airport operators to build on the progress made in recent years and deliver on the aviation sector's sustainability agenda.

The joint statement comes as the CTOs come together to discuss progress in aviation sustainability at a pre COP26 event and industry showcase held in London by ADS, the organisation that represents the aerospace, defence, security and space industries in the United Kingdom.

The CTOs of each company have committed to working together to focus on three core areas of aviation technology:

- Advancing the state-of-the-art in aircraft and engine design and technology
- Supporting increased availability and adoption of Sustainable Aviation Fuel (SAF) and investigating hydrogen as a fuel of the future
- Continuing to develop novel technologies that will eventually enable net-zero carbon aviation while maintaining the safety and quality standards of the industry.

The seven CTOs, whose firms have spent over $75B in R&D combined over the past five years, are calling for:

- A sustained and planned approach from policymakers to support the development of novel technologies and stimulate the ramp-up of SAF and green hydrogen production capacity
- A globally consistent approach to regulation and certification standards
- Collaboration between research institutions and aerospace suppliers in the development of the new technologies
- Investment in SAF production capacity by fuel producers
- Investment by airport operators in the infrastructure required to support novel aviation technologies

Since the 2019 joint commitment, actions taken by the seven companies towards achieving net-zero carbon emissions have ranged from improvements to the fleet-in-service today and technologies for the future:

- **Airbus** announced its ambition to deliver the world's first zero-emission aircraft by 2035, unveiling three hydrogen-powered concept aircraft that highlight the company's commitment to developing this high-potential technology for commercial aviation. Airbus is also engaged in 100% SAF climate-impact projects that are a part of its overall roadmap towards certification for the entry-into-service of 100% SAF on its fleet by 2030.
- **Boeing** committed that their commercial airplanes will be capable to fly on 100% SAF by 2030, continues to test new technologies on its ecoDemonstrator program and announced a partnership with SkyNRG and SkyNRG Americas to scale up SAF. Boeing and Kitty Hawk also formed Wisk, a joint venture to advance the future of urban air mobility with more than 1,500 test flights of its self-flying, all-electric air taxi. Boeing completed a fifth hydrogen flight test program; this time with subsidiary Insitu on their ScanEagle3 unmanned aerial vehicle which was powered by a proton exchange membrane (PEM) hydrogen fuel cell.
- **Dassault Aviation** actively promotes the use of SAF and its Falcon range is already SAF-compatible. Within Clean Sky 2 at the European level and France's civil aviation research council (Corac), Dassault Aviation's work focuses on lowering fuel consumption by reducing aircraft drag and weight. With the European Sesar program, Dassault Aviation works to improve flight efficiency and fuel consumption through the use of specially-tailored flight paths. Dassault Aviation is also involved in Corac projects related to the use of hydrogen in future aircraft.
- **GE Aviation** is maturing a megawatt-class integrated hybrid electric powertrain to demonstrate flight readiness for single-aisle aircraft with NASA, and is leading industry efforts to define standards for 100% SAF.
- **GE and Safran** jointly launched the CFM RISE (Revolutionary Innovation for Sustainable Engines) program in June 2021 to demonstrate and mature disruptive technologies including open fan and hybrid electric targeting more than 20% lower fuel consumption and CO2 emissions compared to today's most efficient engines. Program goals include ensuring 100% compatibility with SAF and hydrogen.

- **Pratt & Whitney** announced a major new investment towards developing a hybrid-electric flight demonstrator, in partnership with De Havilland Canada, Collins Aerospace, and the Canadian government, targeting a 30% improvement in fuel efficiency and CO2 emissions compared to current regional turboprop aircraft. Pratt & Whitney is also developing technologies for a more efficient engine core and recently opened a new engineering and development facility in Carlsbad, California, dedicated to ceramic matrix composites (CMC) to support this effort. It is continuing to validate engines operating with up to 100% SAF.
- **Rolls-Royce** has joined the UN Race to Zero and has pledged to prove all its Trent engines – accounting for 40% of the world's long-haul fleet – are compatible with 100% sustainable aviation fuel (SAF) by 2023, aligned with the UN Race to Zero breakthrough on SAF take-up by 2030. It has tied its SAF compatibility goals to executive remuneration and has tested two widebody and one business jet engine types on 100% SAF; and signed an MoU with Shell agreeing to develop and accelerate the use of SAF. It has developed and flown what it expects to be the world's fastest all-electric aircraft and signed agreements in the all-electric and UAM markets with customers to power products due to fly by the middle of this decade.
- **Safran** has created a strategic partnership with TotalEnergies to accelerate the reduction of CO2 emissions of the aviation industry by jointly working for the development and deployment of SAF that could completely replace fossil kerosene in current and future engines. **Safran and Airbus** will leverage the skills and test facilities of their JV ArianeGroup to prepare hydrogen technologies for aviation.

In their joint statement, the CTOs note that flying today uses 80% less fuel per Revenue Passenger Kilometer (RPK) than it did fifty years ago and that aviation accounts for 2.5% of all man-made CO2 emissions, while generating 4% of global GDP and supporting 88 million jobs.

As a leading global aerospace company, Boeing (NYSE: BA) develops, manufactures and services commercial airplanes, defense products and space systems for customers in more than 150 countries. As a top U.S. exporter, the company leverages the talents of a global supplier base to advance economic opportunity, sustainability and community impact. Boeing's diverse team is committed to innovating for the future and living the company's core values of safety, quality and integrity. Learn more at www.boeing.com.

For the full CTO Joint Statement on Sustainable Aviation, please click here.

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