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CONTRIBUTION OF THE BUSINESS AVIATION SECTOR TO ENVIRONMENTAL PROTECTION AND IN ADDRESSING THE IMPACT OF CLIMATE CHANGE

(Presented by International Business Aviation Council (IBAC))

EXECUTIVE SUMMARY	
This information paper describes action undertaken by the business aviation sector to contribute to the global aviation industry goal of net-zero carbon emissions by 2050, representing a proactive, collaborative, and ambitious approach to addressing its climate-change impact.	
Strategic Objectives:	This working paper relates to the Environmental Protection Strategic Objective.
Financial implications:	Not applicable
References:	A40-WP/273

1. COMMITMENT TO CLIMATE ACTION

1.1 In September 2021, following a full review of the Business Aviation Commitment on Climate Change (first issued in 2009), the global business aviation community through the International Business Aviation Council (IBAC) announced its commitment to achieve net-zero carbon emissions by 2050 (Appendix refers). IBAC joined the collective air transport sector in October 2021 in raising its ambition with a new long-term climate commitment: global civil aviation operations will achieve net-zero carbon emissions by 2050, supported by accelerated deployment of a comprehensive programme of effective emission reduction, energy transition and innovation across the aviation sector and in partnership with governments around the world.

1.2 The industry is determined to continue and accelerate the efficiency improvements and CO_2 emissions reductions that it has achieved so far, but it also understands the climate challenge requires an even greater commitment, including critical partnership with governments and the energy sector.

1.3 All parts of the aviation industry are committed to making the net-zero carbon goal a reality. The business aviation sector is no different and is undertaking a range of measures to reduce its emissions. These efforts are supported by programmes at IBAC.

2. MEASURES TO UNLOCK AVIATION EMISSIONS REDUCTIONS WITHIN THE BUSINESS AVIATION COMMUNITY

2.1 The global business aviation community has long been mindful of the need to mitigate its impacts on the environment. The sector is known for its innovative, cutting-edge technologies that allow aircraft to fly more efficiently and cleanly. Business aircraft manufacturers first incorporated winglets, glass cockpits, lighter materials, and more aerodynamic structures into their products, all contributing to greater fuel efficiency and reduced carbon emissions.

2.2 In 2018, the business aviation community formed the Business Aviation Sustainable Aviation Fuel (SAF) Coalition to accelerate the use and uptake of SAF within the business aviation sector. The SAF Coalition is comprised of leading business aviation associations, original equipment manufacturers (OEMs), fuel providers, fixed-base operators (FBOs), and other key stakeholders.

2.3 The SAF Coalition seeks to raise awareness of SAF among business aircraft operators through the provision of informational materials, including the Business Aviation SAF Guide (now in its second edition), a set of FAQs in six different languages (distributed at the 2020 ICAO Stocktaking), and an introduction to the concept of "book & claim".

2.4 In addition to informational materials, the SAF Coalition has also held several educational, in-person and virtual events since 2019, aimed at accelerating demand for and uptake of SAF.

2.5 High-profile demonstrations by the SAF Coalition supported the World Economic Forum (WEF) securing SAF for aircraft departing its Davos meeting in 2020 and obtaining SAF for aircraft traveling to and from the annual European Business Aviation Convention and Exhibition (EBACE) in 2019 and 2022.

2.6 Some business aircraft OEMs have established on their own initiatives to advance SAF uptake by using SAF in test, demonstration, and customer delivery flights.

2.7 Several business aircraft engine OEMs supplement the above activities by testing their engines with a view toward the eventual use of 100 per cent SAF.

3. MEASURES TO UNLOCK ADDITIONAL EMISSIONS REDUCTIONS NOT INCLUDED IN THE INDUSTRY GOAL

3.1 Policies to Incentivize SAF Development, Production, and Use

3.1.1 At the 40th Assembly of ICAO, IBAC emphasized the importance of SAF in helping the global air transport industry decarbonize (A40-WP/273 refers). In its working paper on business aviation activities to raise SAF awareness within the industry, IBAC called on the Assembly to "request that ICAO facilitate and that Member States implement appropriate policies, including incentives, to encourage (i) the production and blending of SAF in greater quantities and (ii) the consumption of SAF by aircraft operators in order for business aviation to make further, meaningful progress toward its long-term, aspirational goal to reduce carbon emissions." Government partnership in bringing about greater production and use of SAF will be key to aviation's ability to decarbonize.

3.1.2 The business aviation sector has therefore actively promoted government policies that incentivize both the production and use of SAF. A broad set of stakeholders, including the SAF Coalition, advocated for the SAF blender's tax credit in the United States, which was signed into law in August 2022.

Under the legislation, a $1.25 per US gallon credit would be made available for each gallon of SAF sold as part of a qualified fuel mixture, if the SAF has a demonstrated life-cycle greenhouse gas (GHG) reductions of at least 50 per cent compared to conventional jet fuel. The tax credit increases by one cent, up to a maximum of $1.75 per gallon, for each percentage point by which the life-cycle emissions reduction of such fuel exceeds 50 per cent. The nation-wide blender's tax credit will be implemented from 2023. From 2025, a new Clean Fuel Production Credit (CFPC) will apply to all transportation fuels, with an enhanced baseline credit for SAF. The CFPC is based on the level of GHG reduction performance of a fuel versus a baseline emissions factor. Under this system, SAF is eligible for a credit of up to $1.75 per gallon for fuels with a 100 per cent GHG reduction, with lower credits for fuels demonstrating lower levels of GHG reduction.

3.1.3 Business aviation is advocating that evolving policies in Europe take a broader view of aviation SAF needs. While the ReFuelEU proposal is generally welcomed, its current focus would give priority for SAF supply to only so-called "Union Airports", whose commercial, scheduled passenger numbers are above one million per year and cargo traffic is greater than 100K tonnes. This misses the wider network of airports used by smaller operators, particularly business aircraft operators, rendering them ineligible to benefit fully from the ReFuelEU Aviation proposal. The sector is working with the institutions of the European Union to broaden the benefits of SAF, a critical tool for all of aviation to meet net-zero carbon emissions by 2050.

3.2 **Book and Claim: Critical Tool for All Operators**

3.2.1 Given the approximately 17,000 to 18,000 operators of over 35,000 turboprop and turbojet aircraft around the world (average fleet size of 1.5 aircraft per operator) and given the likelihood that these aircraft operate to only remote, rural, and secondary airports (i.e., not large, commercial airports) where SAF is less likely to be available, the business aviation sector places a high level of importance on the establishment of a transparent, credible book-and-claim system for the purchase and environmental-reductions benefits of SAF.

3.2.2 The Council on Sustainable Aviation Fuels Accountability (CoSAFA) is a not-for-profit entity comprised of aviation industry associations, including IBAC, with a mission to develop an accounting system to support book and claim – an orderly, global approach to providing the necessary transparency for multi-party SAF transactions. CoSAFA seeks to establish standards that will ensure transactional transparency, preventing double-counting of emissions savings and other potential accounting questions that could undermine market confidence and investments in the environmental benefits of SAF production and use.

3.2.3 Recognising that many stakeholders within the civil aviation sector are eager to incorporate SAF into their operations, the organizers of CoSAFA have identified the need for a system to efficiently match SAF supplies with demand, track chain of custody and use with transparency, and ensure consistency with environmental and sustainability criteria. The standards of practice to be established by CoSAFA will be publicly available for voluntary use by any party within the aviation sector, including entities that supply fuel and related services, and open to scrutiny by governments to demonstrate its transparency and accountability.

3.3 **Promoting Sustainable Operations**

3.3.1 The business aviation sector has launched a voluntary, industry-wide sustainability standards program. Introduced by the European Business Aviation Association (EBAA), the Standards & Training for Aviation Responsibility and Sustainability (S.T.A.R.S.) Program is an initiative set in motion by young business aviation professionals from across Europe. It will provide best practices for business

aircraft operators to address environmental and social issues, aligned with the U.N. Sustainable Development Goals.

3.3.2 S.T.A.R.S. is designed to support, train, and certify organizations across the business aviation value chain, including aircraft operators, ground-handling providers, FBOs, brokers, maintenance facilities, law firms, and financers. It will help facilitate the sharing of best practices, provide educational resources, and build private and public partnerships both within and outside the business aviation industry. Ultimately, S.T.A.R.S. will be a three-tier set of standards and will be linked to IBAC's global, voluntary codes of best safety practices for operators and ground handlers, IS-BAO and IS-BAH, respectively.

3.3.3 The National Business Aviation Association (NBAA) in the United States has launched the Sustainable Flight Department Accreditation Program, guiding the efforts of business aircraft operators seeking to structure their sustainability efforts within a guiding framework. Operators develop and implement a comprehensive set of policies to address operational emissions, scope three emissions of traveling personnel, ground support, and infrastructure improvements, all of which is audited for accreditation.

4. ACTIONS BY THE INTERNATIONAL BUSINESS AVIATION COUNCIL TO ASSIST MEMBERS' CLIMATE ACTION

4.1 As part of the "basket-of-measures" to bring about the industry's decarbonization in line with the BACCC goals, in particular the medium-term aspirational goal of carbon-neutral growth from 2020, carbon offsetting will play a role in efforts by the aviation industry—recognized as a hard-to-abate sector—to contribute to global decarbonization while the availability of SAF and new technologies grow to make meaningful emissions reductions. IBAC has therefore established a carbon-offsetting platform, IBAC EX, tailored to the needs of small business aircraft operators who wish to participate in climate action through such a measure now. It encourages voluntary offsetting as well as offers CORSIA-eligible offsets.

4.2 Small operators, by definition, do not necessarily have a wide range of resources available to them. To support the climate-action efforts of such operators, IBAC has placed an "emissions calculator" on its Web site, allowing business aircraft operators to map their aircraft emissions in a simple manner. The calculator, supplied by a well-known, leading business aviation service provider, includes operational data for hundreds of makes and models of business aviation fixed- and rotor-wing aircraft, forming the basis for operators' efforts to understand their emissions.

5. CONCLUSION

5.1 Civil aviation is a critical activity for the global economy. It represents about two percent of carbon emissions, and the business aviation sector represents about two percent of that total. Nonetheless, business aircraft operators are committed to achieving net-zero carbon emissions, as outlined in the BACCC and the IBAC Declaration in September 2021, while continuing their important economic, social, and humanitarian missions. The business aircraft operator community calls on governments and other stakeholders to join us and the broader air transport sector in embarking in partnership on this more challenging journey to achieve net-zero carbon emissions by 2050.

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APPENDIX

Business Aviation Declaration on Net-Zero Carbon Emissions by 2050

Business aviation, historically an early adopter of new technologies, has a solid track record of ever-improving efficiency. Business aircraft operators want to build on this performance as the world emerges from the pandemic and as decarbonization and climate action become increasingly important.

The Paris Agreement in 2015 and the more recent reports of the Intergovernmental Panel on Climate Change (IPCC) strongly suggest the need for more ambitious action to ensure that the average temperature rise above pre-industrial levels is now kept below 1.5°C. The IPCC's most recent report in August 2021 underscored the urgency to make 1.5°C a global goal.

Desiring to contribute further to climate action efforts, the global business aircraft operator community commits to meeting net-zero carbon emissions by 2050 through a combination of measures and in close partnership with stakeholders, particularly governments and key sectors of the air transport industry.

Business Aviation Has a Solid Track Record of Environmental Improvement

The global business aviation community has long been mindful of the need to mitigate its impacts on the environment. The sector is known for its innovative, cutting-edge technologies that allow aircraft to fly more efficiently and cleanly. Business aircraft manufacturers first incorporated winglets, glass cockpits, lighter materials, and more aerodynamic structures into their products, all contributing to greater fuel efficiency and reduced carbon emissions.

As scientific understanding of climate change evolved, the global business aviation community developed a multigoal plan to mitigate and reduce its carbon emissions. In 2009, we issued the *Business Aviation Commitment on Climate Change* (BACCC), which outlined three goals:

- Short term – Two percent annual fuel efficiency improvement 2009 to 2020;
- Medium term – Carbon-neutral growth from 2020; and
- Long term – Halving emissions by 2050 relative to 2005 levels.

Business aviation rose to meet the challenges, acting on these already ambitious goals:

- Achieving the short-term, fuel-efficiency improvement goal;
- Establishing the Business Aviation Sustainable Aviation Fuel (SAF) Coalition to advance the production, supply, awareness, and use of SAF across the sector's value chain; and
- Making available to the business aviation sector a voluntary carbon-offsetting platform to support decarbonization efforts in the near term while benefits from other measures arrive later.

Greater Ambition: How Will We Get to Net-Zero Carbon Emissions by 2050?

This aspirational goal will be even more ambitious and challenging to meet than the long-term goal first adopted by the industry in 2009. It will require the use of multiple keys effectively to unlock the pathway:

- **Modern Technology** – New, innovative aircraft models will have to be even more efficient, and use of sustainable propulsion systems, such as electricity, could play an important role in the component of business aviation that uses smaller aircraft over shorter distances.
- **Sustainable Aviation Fuels (SAF)** – SAF will be *the* critical key to unlock our way to net-zero carbon emissions by 2050. It is a demonstrated technology in use today. The central challenges are scaling up production and making it available at reasonable prices. A transparent, accountable book-and-claim system, recognized globally, could significantly help the industry encourage greater use and production.
- **Operational Improvements & Modernized Infrastructure** – Operators are always looking to reduce weight and fly more directly, thereby using less fuel and emitting less carbon. More modern air traffic control and airport infrastructures will contribute to more efficient operations and use of sustainable sources of power on the ground.
- **Market-based Measures (MBMs)** – While we expect the benefits of the above measures to have large impacts on reducing emissions directly from the sector over the longer term, MBMs, such as voluntary offsets, can provide options for supporting action to mitigate the industry's emissions in the nearer term, albeit outside the sector.

These are the same four keys the industry identified in 2009. Committing to net-zero carbon emissions by 2050 means that the use of each of these becomes more important. Analyses indicate, however, that meeting this new goal will require a more aggressive shift in aircraft innovation, an even larger-scale increase in SAF production, and acknowledgement that MBMs, e.g., offsets, will likely be necessary to meet our goal in 2050.

Stakeholders Play Significant Roles in Unlocking the Path to Net-Zero Emissions by 2050

Striving for and meeting this goal will require the full participation and committed support of stakeholders, each critical to turning the keys to unlock the pathway:

- **Governments** to implement policies to (a) incentivize production, sustainable distribution, and consumption of SAF, (b) encourage R&D in sustainable feedstocks for and production of SAF; and (c) foster modernization and improvement of industry's ability to leverage the latest in technology;
- **Fuel producers and suppliers** to increase the network for production of and make more widely available SAF;
- **Manufacturers** to design and manufacture ever more efficient aircraft and engines and aircraft powered by sustainable energy sources such as electricity or hydrogen;
- **Air navigation service providers** to rapidly modernize the global ATC system and eliminate inefficiencies; and
- **Airports and ground-handling service providers** to provide lower carbon-emitting GSE and greater uptake and offerings of SAF.

Civil aviation is a critical activity for the global economy. It represents about two percent of carbon emissions, and the business aviation sector represents about two percent of that total. Nonetheless, business aircraft operators are committed to achieving net-zero carbon emissions, as outlined above, while continuing their important economic, social, and humanitarian missions. The business aircraft operator community calls on governments and other stakeholders to join us in embarking in partnership on this more challenging journey to achieve net-zero carbon emissions by 2050.

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