



## Position Paper

### Flying for a better climate

EAS and its members are committed to contributing to the decarbonisation objective of the European Green Deal. Innovation, fleet renewal, better access to simulators, a review of light aircraft certification standards, and relevant aspects of pilot training are the key enablers.

## 1. Introduction

Established in 1988 as a non-profit organisation, and since 1994 affiliated to the global [Fédération Aéronautique Internationale \(FAI\)](#), the objective of Europe Air Sports is the long-term promotion and protection of sports and recreational aviation in Europe. Membership comprises the National Aeroclubs of most European countries and the European air sports organisations for the different types of flying activities (gliding, hang gliding and paragliding, microlights, model flying, powered flying, instrument flying, light and experimental aircraft). Together these activities represent the interests of approximately 650.000 European recreational aviation participants.

The activities represented are non-commercial and take place in the categories:

- Leisure and recreation
- Sports and competition
- Individual/private mobility

Approximately 50% of the flying activities take place without an engine and thus without burning fossil fuel. Regarding powered flying, fuel consumption has improved very significantly over the past decade and in particular in the light aircraft market (up to two seats), in which the European manufacturers are global leaders in technical innovation and performance. This segment keeps growing, while the fleet of “larger” aircraft (3-6 seats, including the pilot), which are predominately US-built, is stagnating. These aircraft designs are also relatively old and not the most fuel efficient.

By contrast to jet fuel used in international air transport, the fuels used by our members are fully taxed according to the national regulations. Fuel is a very significant factor in the overall cost of flying and it is in the interest of every recreational pilot to minimise consumption. While the total quantity of fuel burned in recreational flying is negligible from a climate perspective, Europe Air Sports and its members are committed to help reach the greenhouse gas reduction targets stipulated in the European Green Deal.

## 2. Technological trends and realities

The members of Europe Air Sports are aircraft and technology buyers and users. They do not develop or manufacture them. Our community is open to embrace green propulsion technologies for as long as they are safe, easy to operate and affordable. General Aviation and the light end of this sector in particular has played – and is playing - a vital role in the development and adoption of greener technologies. Europe Air Sports stresses that:

- GA has experienced significant efficiency improvements, especially in the Microlight and Light Sports Aircraft market. The continuing renewal of the fleet will help to further reduce greenhouse gas emissions.
- First electric aircraft were emerging already at the change of the century, however they are still expensive. Their use in a club-type environment is currently only possible with the help of public funding. Similar to the market uptake of electric cars, policy-makers are called upon to make available financial incentives, such as buyer premiums, for the buyers and operators of electric aircraft. Electric winches are already in use for glider launches.
- Regulation can slow down innovation and should be adjusted so as to give a new boost to the sector. Safety and sustainability must go hand in hand. Regulatory competition between the EU and national certification regimes for light aircraft is triggering innovation and helps to improve safety and efficiency.
- Simulators can play an important role in offering inexpensive, safe and environmentally friendly training. However, their use is currently limited by strict regulatory requirements, which are based on standards and concepts that are more suitable to commercial air transport. Development of and access to simulators suitable for sports and recreational aviation should be improved by amending the regulatory framework.

## 3. GA – cradle of innovation

GA has a proven track-record as test-bed for innovation. It plays a crucial role in the development and testing of technologies, before they reach Commercial Air Transport. It is a true enabler for the overall greening of aviation and for the testing of safety-improving technologies. Here are a few examples of this quality:

- **Electric aircraft:** Electric aircraft could not have taken to the skies, without using GA platforms. The [history of electric aviation](#) is made up of the experiences gained through the use of electric propulsion in light aircraft. The world's first electric aircraft with a type certificate is Pipistrel's Velis Electro. The certificate was [awarded to Pipistrel by EASA](#) in 2020.
- **Hydrogen-powered aircraft:** A number of demonstrators of hydrogen-powered have been developed through co-operation between the GA industry and research institutes, such as [Hy4 project](#), which is a joint effort between Pipistrel, DLR and the University of Ulm. Another example is the [ZeroAvia](#) project. It is worth noting that already in 2006 the [Hydrogenius](#) took to the skies, thanks to the efforts of University of Stuttgart – LFB. The aircraft later became the electric [E-genius](#).
- **Common-rail diesel engines:** The adaption of common-rail diesel engines for aviation is entirely taking place in the GA segment. Burning jet fuel at high compression ratios, such engines provide significantly reduced consumption and emissions compared to turboprop, turboprop or gasoline (Otto cycle) engines. Compared to turbine engines, the fuel consumption is 50 % lower. While the first common-rail diesel aero engines were of rather low power, they are [now available](#) in higher power ranges [suitable](#) for commuter aircraft.

- **Glass cockpit features:** Avidyne introduced certified glass cockpits to the GA market in 1997. This sparked a revolution in avionics, which Garmin built on further. The Garmin G1000 – introduced in 2004 – has navigation, communication and safety features, which most airliner cockpits aren't even close to compete with today. While glass cockpits have their roots in [military and space](#) technology, the development of feature sets and the lessons learned through GA implementation have pushed the boundaries also for other aviation segments.
- **Autoland without ground infrastructure:** Commercial aviation has since years been able to carry out automatic landings (CAT III), but the technology used requires complex ground-based infrastructure. In 2019, Garmin introduced the [Emergency Autoland system](#), which enables autoland on runways and small airstrips without ground-based infrastructure, for selected small aircraft (presently nominated for the Collier Trophy).
- **Ballistic rescue systems:** The [ballistic rescue system](#) (parachute) is developed for the GA segment and is capable of saving lives when aircraft are in trouble. The technology can also be used for other purposes than GA.
- **Composite and carbon fibre construction :** Pioneered by sailplane manufacturers since the 1960s (Phoebus 1<sup>st</sup> series produced) and ever more popular in powered GA aircraft, this construction method today helps airliners such as the B787 and A350 XWB to improved performance and less fuel burn. Moreover, the development of winglets and aerodynamic profiles of competition sailplanes and its adaption by Boeing and Airbus are reducing the fuel consumption of commercial transport aeroplanes considerably.

#### 4. Tangible benefits for society and the environment

Many of the represented flying activities are club-type sports. Participation in the activities of an aeroclub brings with it the well-known benefits of sports, mainly the necessary motivation for an aviation profession. This includes strong youth work, enabling young European citizens to assume responsibility and learn technical and organisational skills, which are an asset for their work life. It goes without saying that for example going on the first solo-flight in a glider at the age of 16 puts teenagers on a steep learning curve towards assuming responsibility for their own actions. Europe Air Sports stresses that sports and recreational aviation:

- Plays a fundamental role in providing meaningful leisure activities for Europe's youth;
- Serves as first point of contact into the aviation world, providing the initial training for a successful entry into an aviation-related profession, including pilots and mechanics;
- Approximately 5300 airfields in Europe provide rather unique natural habitats for flora and fauna. Many of these airfields are grass strips, but even those with a paved runway are surrounded by nature. In total this amounts to a protected area of around 1500 square kilometres, a dimension similar to the Greater London area;
- When used for individual mobility needs, GA also plays an important role in connecting Europe's rural areas, while requiring only minimal transport infrastructure needs

#### 5. Proposed measures to further improve the environmental performance

Europe Air Sports and its members are fully committed to minimising the impact of all flying activities on the environment. Green stewardship is already an integral part of all of our activities. In order to further improve the sector's environmental performance and to further reduce greenhouse gas emissions Europe Air Sports calls upon European and national decision-makers to:

- Intensify research, innovation and investment funding for low-carbon (or better zero carbon) propulsion technologies, including sustainable alternative fuels;
- Adopt a fleet renewal programme for sports and recreational aviation, incentivising the purchase and operation of low-emission aircraft, including electric and hybrid-electric aircraft, possibly hydrogen powered aircraft in the future;
- Relax regulations for the use of generic simulators in training and regarding recency requirements for pilots;
- Review certification standards for light aircraft, allowing for the safe and unbureaucratic uptake of alternative propulsion technologies and an accelerated market availability of innovations;
- Intensify aspects of “eco-flying” in GA pilot training.



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