OMNI HELICOPTERS INTERNATIONAL

OHI Perspectives

Navigating the Skies Towards Sustainable Aviation*

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The aviation industry stands at a crossroads. On one hand, it is key to the lives we got used to: travelling the world to experience places and cultures, transporting valuable goods like food and medicine, or trading with one another in real-time. On the other hand, today's aviation relies almost exclusively on fossil fuels as a source of energy with the associated adverse environmental impact.

Consider the statistics: total aviation, of which vertical air mobility is a very small part, accounts for ca. 2-3% of global carbon dioxide emissions. While this figure might seem modest in comparison to other sectors, the expected growth in air travel demand poses a significant challenge. According to IATA, air travel demand is anticipated to double by 2040. Without decisive action, this growth will exacerbate the industry's environmental footprint.

It is the responsibility of the aviation industry, including the rotary segment, to navigate the delicate balance between air travel's indispensability and its environmental repercussions. We must ensure that we are aligned with global efforts to mitigate climate change. In this context, the significance of UN International Clean Energy Day for aviation extends beyond mere acknowledgement - it compels a comprehensive re-evaluation of our industry's practices.

Is there a path to net zero emissions for aviation? Yes, but one of the most important determinants on the way there is the availability of sufficient sources clean energy. Let's look at the various pathways.

Electric propulsion is the most advanced option for de-carbonisation, albeit for the foreseeable future limited to niches such as urban or regional transportation. At OHI, we are very excited to get on board of this technology in our urban mobility business, Revo, once the technology receives the prerequisite certifications. To be a first mover, we have entered cooperation with Airbus and Eve, two eVTOL industry leaders. Fuelled by electric propulsion, Revo has the potential to make a leap towards net zero: close to 90% of electricity in Brazil comes from renewable sources like hydro or solar.

Recent advancements in sustainable aviation fuels (SAFs) are a source of hope for many industry participants. According to the International Renewable Energy Agency (IRENA), these fuels, derived from resources like waste oils and agricultural residues, have the potential to cut CO2 emissions by up to 80% on a life-cycle basis, provided they are produced reasonably close to the "fuel tank". Today, there are challenges around the large-scale worldwide deployment of SAF: feedstock volumes, production facilities, and green energy to produce the necessary SAF volumes are significantly lacking. IATA estimates that in 2023 only 0.15% of the annual ~100 bn gallons of aviation fuel consumption was available as SAF. This figure is projected to grow to 18bn gallons by 2028 (as much as one can predict).

Extremely high capital investments are needed with essentially a venture capital risk profile. In such a situation, governments worldwide need to step up to cover the initial stages of the investment curve but also further encourage the build-up of distributed renewable energy generation. The US has taken the first step with its Reduce Inflation Act that provides tax credits to SAF producers. At OHI, we closely follow the development of this industry and build our de-carbonisation targets around the availability of SAF in the long term.

Another potent alternative is the so-called “green” hydrogen, i.e. hydrogen produced using renewable energy. Hydrogen could solve some of the problems of SAF, but the amount of green energy necessary to generate sufficient green H2 fuels is astronomical and measured in thousands of Terra-Watts. Hydrogen in aviation appears to be a solution only in the very long run, amongst other factors driven by the fact that the OEMs must develop and bring to market completely novel H2-fueled aircraft platforms. In vertical lift aviation, this can take decades.

For the sake of completeness, one should note that the above options all refer to GHG avoidance rather than reduction. Although in the big picture, these improvements represent a smaller contribution on the path to net zero, they still can be meaningful. Operational efficiencies, such as changing flying protocols or optimising logistics and payloads, can lead to imminently achievable GHG reduction. At OHI we harness the power of digital innovation to target such gains.

It may sound like we are painting a bleak picture. It is true, aviation is a hard-to-abate industry. However, one should never underestimate the ability of humans to develop revolutionary solutions in a short period – think of Google or ChatGPT. We must acknowledge the complexities we are facing and work collaboratively to address them. Operators, clients, aircraft OEMs, fuel producers, governments, research institutions – only working jointly in the same direction can we achieve the critical net zero goal. The Clean Aviation / Clean Sky programs - public-private partnerships between the European Union and the aviation industry - exemplify the collaborative approach needed. Such initiatives foster innovation, drive research and create a supportive environment for the integration of sustainable practices.

At OHI, we understand the vital importance of clean energy for aviation. Our approach is not to wait until there is enough of it for us to consume. Our aim is to contribute actively to the development of renewable energy. For example, Brazil is planning to execute c.32,000km of national power grid extensions by 2030 to bring clean energy to areas where it is needed most. Today, our heavy-lifting helicopters already allow power companies in the Cubatão region to construct powerline towers with minimal disruption of surrounding forests and biodiversity. Looking at offshore wind development, we see a role for us to play in the construction, monitoring, and maintenance of farms with our helicopters and drones.

In conclusion, UN International Clean Energy Day serves as a moment for the aviation industry to reflect on its trajectory. Sustainable aviation fuelled by clean energy is not an elusive dream but a tangible reality that demands practical solutions. By acknowledging the statistics, embracing viable alternatives, and fostering collaborative efforts, we can usher in an era where aviation connects the world and does so responsibly, minimizing its impact on the environment. For OHI, it is both a privilege and a responsibility to be at the forefront of this transformative journey toward a cleaner and more sustainable aviation future.

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