MAIDEN FLIGHT WITH HYBRID RED A03-BASED SAF JET-A/ELECTRIC DRIVE SYSTEM OFFERING NET-ZERO OPERATION IN COMMERCIAL AVIATION

News / Manufacturer

The entire aviation industry is working hard to find better solutions to make aviation sustainable. Solutions that are ready here and now to be certified tomorrow are particularly interesting. We have reported on the first flight of Ampaire Eco Caravan. Important is to see what technology, what engine was the propulsion force for this flight. So, the aircraft took off with a pure hybrid installation using the Ampaire electric motor and battery in combination with the RED A03 V12 Jet-A compression ignition engine Made & Developed in Germany.

Ampaire uses the RED Aircraft AO3 series compression ignition engine rated to 550 hp (405 kW) in an integrated parallel configuration. The RED engine provides the base power, Ampaires electrical system supplies peak power, the battery and charging system. Using existing aircraft, the efficient energy management and the RED A03 compression ignited engine on SAF, commercial

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aviation turns into a “net- zero” scenario.

The new propulsion system for the Eco Caravan offers substantial benefits to users and will be the first in a series of electrified fixed-wing aircraft that reduce aviation’s carbon footprint. The first prototype and proof of concept had it’s maiden flight.

- Fuel consumption is reduced by 70 percent on shorter trips and 50 percent on longer ones with greater corresponding reductions in CO2 emissions due to the contribution of the electric motor and the optimized use of the RED engine.
- The RED engine provides high thermodynamic efficiency that is 2X better than a comparable turboprop engine.
- The RED engine is JET A/SAF compatible. With SAF usage, CO2 emissions have the potential for net zero.
- Engine initial cost and ongoing maintenance are substantially lower than for a turboprop engine.
- Eco Caravan operating cost is 25-40 percent lower depending on an operator’s route structure.

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