PANEL DISCUSSION II: Alternative Propulsion

Prof. Uwe Hessler, *Rolls-Royce Deutschland Ltd & Co KG, Head of Research & Technology*

The European aviation sector is fully embracing the twin transition, green and digital. This means that for players in this sector to remain competitive, they must rapidly develop and adapt cutting-edge technology, whilst also engaging a complex network of stakeholders, from certification authorities, regulators to operators, energy providers and the supply chain. This complex network being critical as the sector transitions into a broader range of energy sources necessary to decarbonise at a faster pace, enabled by digital tools and methods across the life cycle.

There is a societal need for connectivity and for solutions. Mitigations to climate change coupled with technology capability have created opportunities and the need for decisions. There is also the opportunity to create and integrate new technologies to facilitate connectivity and protect or mitigate effects on the environment.

Decisions are to be taken on how, when and where to apply those – what fuel, what entry point in the market. So where there are uncertainties, engagement via collaboration, shared common objectives is a fundamental requirement for that process.

We need to keep pushing towards the ultimate objective of reaching, by 2050, a net-zero CO2 emissions aviation ecosystem in Europe. ASD together with Europe's airlines, airports and Air Navigation Service Providers have laid out a joint long-term vision – Destination 2050 – to reach net-zero CO2 emissions by 2050 and to substantially contribute to the EU 2030 targets.

The way forward will likely involve a combination of technologies across airframes, propulsion systems, improved efficiency, fuel burn, emissions, noise and using SAF. Zero-emission by design will move them forward for further integration at higher scale and learning from the work being done in places such as Clean Aviation.

Wrapped around this must be the industrialisation technologies that take benefit from digital tools and capabilities, enabling higher pace routes to certification and production.