

PRESS RELEASE

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Hydrogen power – challenges for aviation

At the ILA Future Lab, the members of the panel discussion on the topic of hydrogen were unanimous that it had the capability to make aviation climate-neutral. However, they also agreed there were big challenges involved that required a joint global effort.

The technology already exists to put hydrogen to aviation use, whether in liquid or gas form, as a fuel cell for electric power or for driving modern gas turbines, as will be the case on large passenger aircraft. The wide-scale use of this technology while necessarily observing all the logistical and safety-relevant technical requirements of international aviation will entail big challenges and financial costs that should not be underestimated by anyone in science, industry, politics and administrations. Cross-sectoral efforts in science and technology fields are already under way. Synergies with regard to hydrogen technology already exist in the automotive, maritime and aviation sectors. In this context the EU and national governments were expressly called upon to establish suitable frameworks and regulatory measures. For example, common standards must be laid down to make it possible to meet the high safety and logistics requirements of airport eco-systems.

Taking part in the panel discussion were **Dr. Stefan Kaufmann**, Green Hydrogen Innovation Officer for the Federal Ministry of Education and Research, **Dr. Sabine Klauke**, CTO Airbus, **Dr. Uwe Lauber**, CEO MAN ES/National Hydrogen Council, **Dr. Luca Bedon**, Head of Research and Technology at Avio Aero, **Dominik Härle**, Corporate Business Development Manager, Fraunhofer Gesellschaft, **Prof. Josef Kallo**, CEO of H2Fly, **Barnaby Law**, Chief Engineer, Flying Fuel Cell at MTU Aero Engines, **Alan Newby**, Director Aerospace and Future Programmes at Rolls-Royce, **Philippe Peccard**, VP Clean Energy, LINDE, and **Gerrit Rexhausen**, Corporate Innovation Manager, Lufthansa Technik.

Climate protection in the Franco-German aviation sector

At ILA Berlin, experts from science and industry debated how cross-border collaboration in aviation can drive forward climate protection, and the role that new legal requirements might play in that context.

Speaking at the discussion round entitled 'A duty to act?! Franco-German aviation and climate protection' at ILA Berlin, Lukas Rass-Masson, a legal expert from the European School of Law in Toulouse, said the days when corporate climate protection was no more than a gesture of goodwill were gone. Court decisions had already confirmed this. Several laws such as the Supply Chain Act, due to come into force in Germany in 2023, showed that human rights and climate protection were becoming

Press contacts:

Messe Berlin GmbH
Emanuel Höger
Spokesman
Senior Vice President
Corporate Communications
Messe Berlin Group
www.messe-berlin.de
Twitter: [@messeberlin](https://twitter.com/messeberlin)

Britta Wolters
PR Manager ILA
Messedamm 22
14055 Berlin
Tel.: +49 30 3038-2279
britta.wolters@messe-berlin.de

Management Board:
Martin Ecknig (CEO),
Dirk Hoffmann
Chairman of the Supervisory Board:
Wolf-Dieter Wolf
Companies register: Amtsgericht
Charlottenburg, HRB 5484 B

BDLI
Cornelia von Ammon
Press and Public Relations
Director
Tel.: +49 30 2061-4014
ammon@bdli.de
Twitter: [@bdlipresse](https://twitter.com/bdlipresse)

Additional information:
www.ila.berlin.de
www.bdli.de
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increasingly important in the aviation industry. In France, similar climate protection regulations had already become law. Lukas Rass-Masson stressed that companies were important players in the fight against climate change. In the future, if they violated human rights or climate protection laws there would be legal consequences, not to mention the negative impact on their reputations, he added.

Hydrogen production at airports

The consultancy Comworxx has released a study which its managing director Hugo Duchemin wants to use to drive forward green hydrogen production at airports. The aim is to already establish an infrastructure to enable initial flights with the kerosine alternative in ten years time. Other sectors including rail and HGV transport could benefit from this development too. Large airports such as BER and Toulouse-Blagnac as well as fuel companies had shown interest, Hugo Duchemin said. In order to finance the new technology, which would not be profitable at first, state subsidies were conceivable, as was already the case in Australia, or tax breaks, as envisaged in the USA. Together, players from Germany and France could exert more pressure on policymakers in order to effect change at European level.

Small airfields were important for testing new aircraft and the necessary infrastructure, said Klaus-Jürgen Schwahn, managing director of Schönhagen Airfield and chair of the organisation representing the interests of regional airfields (IDRF). Sustainable aviation has long been an important topic for him. Startups are able to test their aircraft in Schönhagen, which cooperates with universities. At the panel discussion he predicted a disruptive future for aviation and called for interconnecting various modes of transport. A new approach to airport operations was needed and had to be realised now. He presented the Innovate to Fly Fund, an alternative to conventional carbon offsetting, to which air passengers can donate to support the development of eco-friendly technologies.

A new form of transport

At ILA Berlin representatives of politics and industry exchanged views on Advanced Air Mobility (AAM) in Germany, the opportunities it presents and the hurdles involved. The panel members discussed how the development of unmanned and electrically powered aerial vehicles could be accelerated as well as conceivable applications.

How about a ride from the airport to the city in an unmanned flying taxi? If Florian Reuter, CEO von Volocopter, has his way this will soon become reality. The Volocity his company has designed is a two-seater already successfully tested in several countries which is also on show at ILA Berlin 2022. Volocopter, based in Bruchsal in Baden, benefits from its proximity to other industries, universities and research organisations. However, speaking at the high-level panel discussion entitled 'Europeans' novel way of moving: AAM Advancing Mobility' in Hall 3 at ILA Berlin, he said the German pioneers of electric aviation found their markets and investors mostly abroad.

Dr. Markus May, managing director at Airbus Urban Mobility, took a

similar view. In Bavaria, Airbus is in charge of a project whose aim is to realise inter-city electric flight. In Markus May's opinion, it would be desirable for technology developed in Germany to be put to use in this country. That would require a corresponding testing infrastructure in Germany and working with airports to establish it.

Support at European level

Dr. Anna Christmann, federal government aerospace coordinator and digital economy and startup commissioner, highlighted the many possibilities at German and European level for funding innovative and eco-friendly technologies. She also pointed to the test circuit in Cochstedt in Saxony-Anhalt, where the German Aerospace Center (DLR) is setting up a national test centre for unmanned aircraft systems (UAS).

Throughout Germany, special laboratories made it possible to test innovative products and services under real-life conditions. Regarding these new electric aircraft she envisaged various applications. She imagined their selective use at certain events instead of "flying taxis for everybody". Electric aircraft could conceivably be of use for transporting medical drugs too.

According to Dr. Joachim Lücking, head of Aviation Safety, DG MOVE, European Commission, the European Aviation Safety Agency (EASA) supported these new transport solutions. However, regulations still had to be adapted to suit the new aircraft.

The panel members agreed that in two years time AAM will have overcome other major obstacles and be certain to occupy an even more prominent role at ILA Berlin 2024.

Roland Berger Sustainability Keynote

Higher sustainability levels in the supply industry

To what extent are aviation industry suppliers capable of achieving higher sustainability levels? That was the question examined in a new survey by the consultancy Roland Berger which was presented at the Sustainability Keynote at ILA Berlin.

The majority of aerospace industry suppliers in Germany and France were aware of the need to substantially reduce CO₂ emissions. By developing sustainable aviation technology they were assisting the transformation of the aviation industry. In its survey, which polled 89 suppliers from Germany and France, the consultancy Roland Berger examined the role these technologies played inside the companies.

Approximately two-thirds of the companies polled were already working on sustainable innovations. Larger companies in particular operated in this field. For the majority of respondents progress was not moving fast enough. According to them, the main obstacles were a lack of financial and human resources, insufficient expertise and a lack of support from aircraft manufacturers.

SAFs are not enough

One current focus of the companies is on fuels for conventional aircraft

and propulsion systems. Only a minority of respondents believe hydrogen or battery-electric power are technologies worth pursuing to achieve the International Air Transport Association's (IATA) goal of net zero CO₂ emissions by 2050. This view was echoed by Dr. Dietrich Brockhagen, founder and CEO of Atmosfair, which the team of Roland Berger had interviewed for its survey. In his opinion, sustainable aviation fuels (SAFs) will not be enough to achieve net zero emissions. A joint roadmap that also embraced green energy was needed to make further progress, he said.

That was what the interviewees wanted too. In order to take on a more active role in developing sustainable technologies and to increase the pace, suppliers would like more support from aircraft manufacturers. Joint R&D projects and transparency in planning anticipated order volumes would be of help in that respect.

Policymakers needed to act too. By developing and communicating a coherent long-term policy, governments could provide support for sustainable aviation. More funding for research and development was needed. The survey also noted the importance of industry associations for the supply industry.

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