



Aerospace chief: Industry on track to deliver 'greener' aircraft

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Industry is on track to ensure "carbon-neutral growth" in the aviation sector by 2020, but strengthened European Union support for research and development (R&D) is vital to help manufacturers deliver the green technologies required, François Gayet, secretary-general of the AeroSpace and Defence Industries Association of Europe (ASD), told EurActiv in an interview.

François Gayet is secretary-general of the AeroSpace and Defence Industries Association of Europe (ASD). He also currently chairs the International Coordinating Council of Aerospace Industries Associations (ICCAIA).

He was speaking to Outi Alapekkala.

[To read a shortened version of this interview, please click here.](#)

Broad technological challenges to greening air travel include research on engine airframe design and alternative fuels. Could you prioritise these challenges or say which technological advances would bring the quickest and biggest wins in terms of greening air travel?

Greening air travel is a mix of a lot of issues and everything needs to be addressed at the same time. Everything counts and little advances made here and there will together progressively result in a high-level percentage of emission reduction.

This global approach is demonstrated by the various topics addressed by the EU's Clean Sky project. It includes research on new technology for all these topics – electrical consumption onboard, carrying less weight within the plane, using advanced materials to build a plane and alternative engines, for example.

Put simply: anytime a plane saves weight, it saves fuel as well. If, on top of that, the efficiency of the engines or the airplane itself is improved, you save even more fuel.

Secondly, it is clear that the development of the future generation of biofuels could help a lot. In our jargon we call them 'drop-in biofuels', because you can mix them with traditional kerosene and put them inside the same tanks, which avoids building a new infrastructure for the alternative fuel.



However, our manufacturers are a bit cautious because it is a complex process. Biofuels need to be clearly identified, for example regarding the use of non-food-type plants.

While algae have shown very promising potential for the future biofuels, you have to develop a complete industrial process for them. Also, these biofuels need to be certified, as every piece in aviation needs to be certified to meet the safety requirements.

I hear that a lot of progress has been made in developing these 'drop-in biofuels'. When are they expected to be certified and what are the challenges for their take-up and large-scale production?

I know that there is still some work to be done and I expect the first biofuels to be certified in 2012 or later.

The most promising biofuel crops are jatropha and camelina, but there is also a huge potential for producing biofuels from algae. However, here again, massive investments are required to bring the fuels out of laboratories and showcase that their production can be scaled up from some laboratory litres to millions of litres and distributed around the world to each airport and airplane.

What kind of incentives are needed to scale-up production?

We need to ask the question of who will pay for scaling up the production and invest in it. I believe a mix of government support is needed to help the transition from small laboratory experiments to big quantities produced outside. We are talking about the same type of investments needed to build new oil refineries.

Aircraft manufacturers have a very limited role to play in that portfolio. They have done their job through testing and demonstrating that the fuels work and can be used for flying.

Boeing and Airbus have done their flight testing and proved that biofuels work. But they cannot guarantee that they will get biofuels in millions of gallons in 2012-2015. The supply depends on other investors and parts of the economy.

There should be a close link between public authorities and potential producers to make sure that there are incentives to go faster on the development. Of course, one may wonder what the reaction of oil manufacturers will be, as biofuels create competition for them. Some of them are positive, others negative.



Biofuels is one of the important possibilities, but we also need to be cautious when we accept ambitious targets. We don't want to bet 100% on the fact that biofuels will solve all the problems. This is why we need to keep on investing in technologies to reduce weight and fuel consumption.

Is research into one of the technology fields advancing faster than others?

Open rotor technology is very promising for engines. There are already demonstrations. And we could see some of that coming maybe earlier than the new generation of aeroplanes.

This could be done through a retrofit on existing planes, as you can replace an engine with another one without changing the airframe. Significant investments have been made in this technology and it will bring improvements to CO2 emissions.

What about the trade-offs between noise levels and fuel consumption?

Trade offs between fuel consumption and noise have always been on the table. This is a complex process. Airlines are the final players and need to take investment decisions in reaction to announced regulatory changes.

For example, an airline needs to choose between a quieter plane to be able to land in some airports and as light a plane as possible in order to reduce fuel consumption and cope with an economic system that will impose big fees if fuel consumption is not reduced.

These are the type of trade-offs that manufacturers need to think of too. And what is difficult is that they need to do it very early in the process, because airlines will see the result only once they fly the plane.

How green is the EU aerospace industry compared to that of the US, for example?

This is a global industry. Some 40-50% of Airbus's suppliers are from the United States and vice-versa. A lot of Boeing's suppliers come from Europe.

Today's two big competitors are competing head-to head - each one trying to do their best to include the new technologies. And of course a programme like Clean Sky or what could follow is vital for the European industry.

When you want to launch a new generation to replace for example the Airbus A320 family, you have to decide sometimes 7-10 years in advance which technology you will put in the plane. But if these technologies are not mature enough you will not think of them. Consequently, you could lose future competition if you are not at the forefront.



The European industry is doing very well. From less than 20% of market share it has grown to occupy some 50% of the market share. This tremendous achievement is partly due to very well-organised support for R&D, which is key for our industry.

How is your industry coping with the current economic crisis?

The aviation industry has not requested any financial support from governments, despite the fact that the sector has been seriously hit by the crisis. In particular business aviation has been severely hit. The order books for some of them became negative and they had to take back more planes than they were able to sell.

Our motto has been research and technology – be ready for the next generation. This is of course important for competition reasons, but also to achieve the very ambitious goals that we have put on the table with our colleagues from other parts of the industry, namely airlines and airports. Our common targets for future CO₂ reduction are related to advanced technologies.

Is the EU industry, and the Clean Sky programme, on track to deliver new green technology by 2020?

Yes. In 2000 a group of high-level personalities proposed targets for 2020 and this led to the creation of the ACARE [Advisory Council for Aeronautics Research in Europe] technology platform, which includes people from the EU institutions and aviation stakeholders.

In 2010 we are half-way through. In 2000, not everybody was convinced we could reach our ambitious targets. But now, at mid-term, not only can we say that we will reach these targets collectively, but that ACARE is also working on new targets for 2030 and 2050.

I believe we have a very good process to manage the various research and technology programmes, like Clean Sky and SESAR (a single European air traffic management system). We expect a 10% improvement.

So you believe in carbon neutral growth for the sector from 2020?

Yes.



Let's imagine that the green technology is ready. How can we ensure its quick take-up?

Part of the greening aviation process is also looking at market-based measures. But this is more for a discussion with the airlines to find the best way. Regarding fuel consumption, for example, it is clear that every time we save fuel, airlines gain in competitiveness, and every time the cost of fuel increases they lose competitiveness, because fuel cost is a significant part - about a half - of airline costs.

So, the incentive is not only about environmental regulations but also about economic reasons. And when the overall market is depressed, airlines lose the financial capability needed to buy new airplanes. Meanwhile it is clear that their strategy is, of course, to replace their fleet after some time and invest in airplanes that will from one generation to the next one bring significant reductions in fuel consumption as well as other advantages, such as maintenance efficiency.

In the end, it is what I would call a virtuous circle. It is a combination of improvements in both cost reduction and environmental footprint.

What is your opinion on the planned CO2 standard for aircraft and what would it mean for EU industry? Would it help green air travel?

The ICAO [International Civil Aviation Organisation; a UN body] is talking about a CO2 standard for aviation which could potentially be available in 2013. Of course we feel it could be a good idea, but we need to make sure that we are cautious about the way we want to implement it.

There is a need for a thorough technical review prior to implementation – including demonstrating that the standard is really beneficial. When you develop a standard, you have to test it on prototypes and finally come back to the standard itself and evaluate whether the standard is really efficient in the plane.

In addition to a feasibility study, we need to make sure that the standard will not create market distortion.

Here, the issue could be complex because airlines have different strategies. A low-cost airline flying intra-Europe has a completely different fuel use strategy from airlines flying long-haul. They fill the tank with the minimum fuel needed and fly light planes – resulting in different footprints. Therefore the standard has to make sure that it will not create distortion on the final market.

We will also need to see whether the standard will apply only to new aircraft or also to aircraft already in service - which is another issue.



The whole issue still needs a lot of work before a consensus can be reached on it.

We as manufacturers [ASD] are teamed with associations from United States, Brazil, Japan and Canada in ICCAIA – the International Coordinating Council of Aerospace Industry Associations. It is the official interface with the manufacturers and ICAO on the matter of CO2 standards, for example.

I'm currently the chair of ICCAIA. We have strong coordination between continents on these issues.

I would like to stress that aviation as a whole is the only sector to have adopted a common position covering short-, mid- and long-term objectives to reduce its environmental impact. And this is a very significant achievement and we are acting as a global sector in defining targets.

What is your contribution to the EU 2020 strategy?

We plan to have an event in the European Parliament in November 2010, to engage in dialogue with European lawmakers on greening air travel.

EU lawmakers should understand that actions need to be taken now to ensure that we have the right green technologies in place in 2050 to meet our ambitious targets. The effort on public-private partnerships should be maintained and strengthened over the next few years to enable the creation of green technologies for aviation in Europe. And the new generation of programmes for funding R&D is required now.

In [our contribution to the EU 2020 strategy](#), we underline that aerospace is an area where Europe has a lot to do. Investing in a sector like Europe's aerospace industry, which is among the top players in the world, can create the breakthrough technologies which will ensure the sustainable development of air transport. As part of a new EU industrial policy, this is an area where promising outcomes can be achieved.