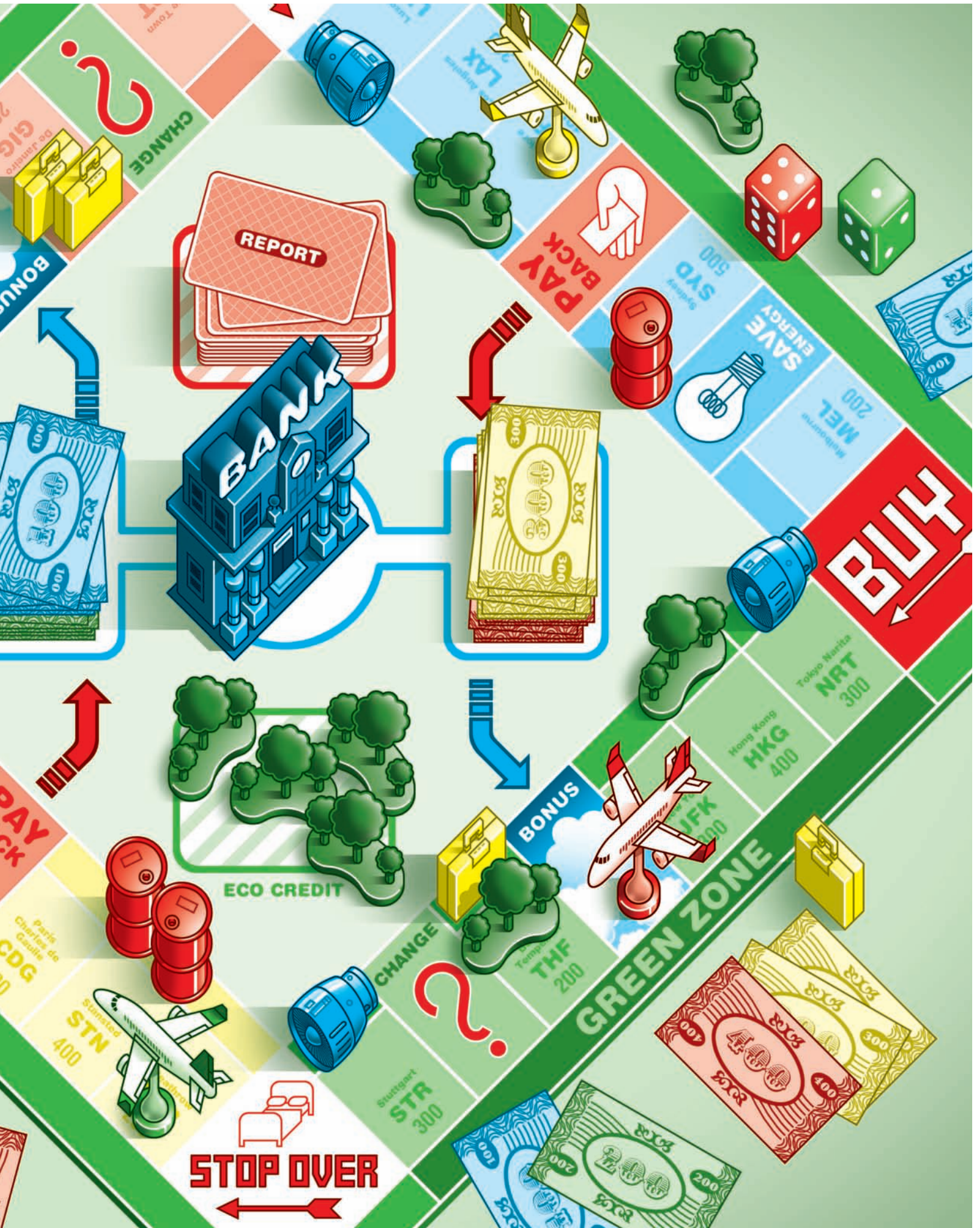


Green machines

The European Union Emissions Trading System will take effect in 2012, but its planned introduction has been met with increasing opposition

Words | **Selwyn Parker**





The European Commission's (EC) grand plan for reducing aircraft emissions is not going to die the death that many business jet operators had been hoping for, particularly those in North America.

Europe's Emissions Trading System (ETS), which was launched in 2005, goes live for airlines in 2012 after what has been a difficult transitional year for the industry – and despite aggressive opposition from the US House of Representatives and aviation industry and other non-EU states.

The political pressure on the EC is “growing by the day”, according to the European Business Aviation Association's (EBAA) chief executive officer Fabio Gamba, to “abandon, defer or reduce the scope of the ETS scheme”.

Teething problems

But it hasn't been abandoned, deferred or reduced, only slightly modified, and there are still considerable misgivings among operators about how it will work. As ETS becomes embedded in European airspace, some industry experts believe the costs of compliance will rise steadily as national jurisdictions add their own variations in a ‘gold-plating’ exercise. The UK's Environment Agency, for instance, is already charging European operators €3,000 to €5,000 – and US operators as much as US\$9,000 – for routine compliance in the form of ‘subsistence fees’ and related costs. And although the process is free in some countries, such as France, the industry expects this to change in the future.

The wide variation in charges has particularly irritated operators based in the USA. As Universal Weather's Adam Hartley, supervisor of the global regulatory services team, adds, “These fees apply before the operator has done anything to the environment.” (The agency says that it is officially bound by Her Majesty's Treasury to “seek to recover all relevant costs”.)

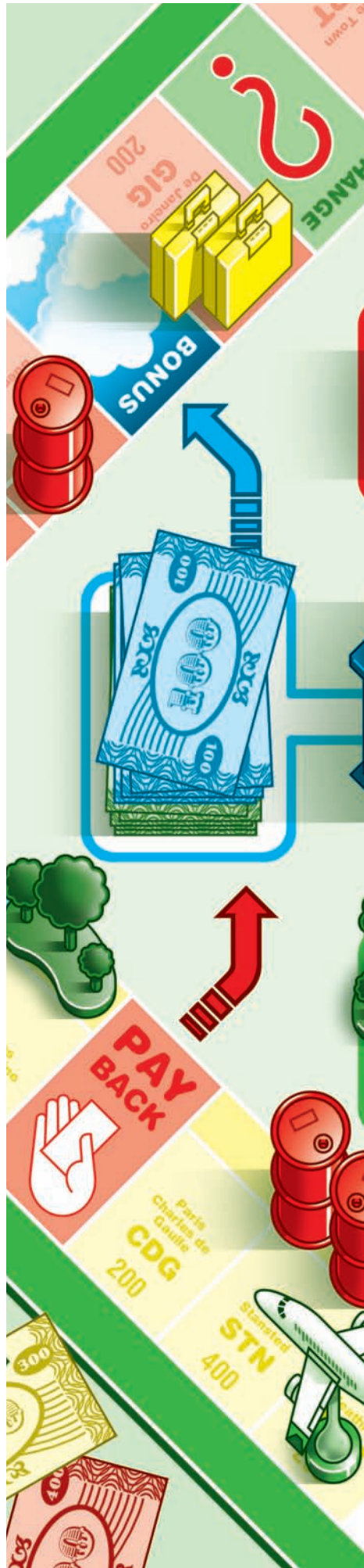
Many operators also find it bewildering that member nations are able to tweak the regulations in their own way, further complicating the compliance process. “It makes the scheme a tough target to hit,” adds Hartley.

The good news

On a positive note, most business aircraft operators are classified as ‘small emitters’. That is, they fall below the current qualifying level of 10,000 metric tons of emissions per year, or less than 243 flights over three consecutive four-month periods. In practical terms that means much less paperwork because small emitters qualify for a simplified compliance process based on just two elements: the type of aircraft and the actual distance flown.

Even better, after a three-year battle EBAA has negotiated a new threshold of 25,000 metric tons, which – although yet to be formally approved – is due to apply from 2013. It means a total of over 900 operators will qualify for the allocation of greenhouse gas emissions free of charge.

This wasn't the 50,000 metric tons the EBAA had sought but it does represent a considerable gain for operators. EBAA's chief operating officer



Pedro Vicente Azua says the organization will keep fighting for the 50,000 metric tons. “This would cover a big tranche of other commercial operators that are still very small, with 10-15 aircraft in their fleets,” he said in a statement.

Meanwhile the proposed new ceiling of 25,000 metric tons will relieve the burden of compliance for all but the largest commercial business aviation operators.

As Neil Duffy, ETS technical manager at ICM ETS, explains, “The operators who will benefit most from this are commercial business aircraft operators based in Europe, and airlines based near Europe with a relatively small number of flights to member states.”

Overall, the scheme has had its teething problems and they are still being sorted out. For instance, the amount of paperwork horrified many operators at first. Resentment at the line of demarcation of 10,000 metric tons – and even at the proposed 25,000 metric tons – still lingers among those who do not qualify as small emitters because it is considered too arbitrary.

Also, some nations are more prepared than others. For instance, some states have set up online portals to facilitate compliance while other sites are cumbersome, and other countries have inserted their own clauses. Many operators, again mainly in the USA, were assigned jurisdictions based on the routes they flew two or more years ago but no longer fly.

Further, Eurocontrol's compliance tool for small emitters, intended to make things easier, was inaccurate and is undergoing considerable modifications to make it reliable before 2012. However, when it's up and running, it should simplify the process for operators, which will be required only to enter their data – monitoring plan and emissions report – into Eurocontrol's online spreadsheet, which then does the rest of the work for them.

“The burden of compliance falls on the pilots,” explains Tobias Konik, ETS expert at France-based VerifAvia, one of the first verifying bodies to be certified. “At the beginning it was very hard for them to understand it all.” The fact that 95% of the clients of VerifAvia are based in the USA says a lot about US concerns about the scheme.

The legal challenge

Meanwhile, the scheme is being fought on several fronts. In Brussels, the current position of the case against the EC brought by the Air Transport Association of America and American Airlines is that the advocate general has advised the inclusion of the aviation industry in the scheme is “compatible with the provisions and principles of international law invoked”.

On the face of it, this looks like a defeat for the plaintiffs but the role of the advocate general is limited to the proposal of a solution to Europe's Court of Justice, not to make a ruling. In other words, it is not binding. The advocate general's report is now before the judges, who will give their verdict “at a later date”. Nobody with an inside seat to the process expects US operators to be let off the ETS hook.

How to make compliance easier

Short of buying a new, lower-emitting aircraft, most operators are trying to ease the burden of compliance with the ETS scheme. And there's help out there.

Aviation Footprinter is one of a growing number of tools designed to reduce the paperwork. Developed by ETS Aviation, it is intended to ensure that operators get the free carbon credits to which they're entitled. The web-based Aviation Footprinter is a system available 24/7 from anywhere in the world.

It works by extracting data from existing monitoring and flight-planning systems, predicting fuel use, and then comparing it with recorded data and the database of Eurocontrol, which monitors all flights in and out of European airspace. The system then calculates, checks, and tabulates emissions.

By accessing a database of aircraft types and other information, Aviation Footprinter automatically flags any errors or inconsistencies. The subsequent report clocks all the required information on the operator, aircraft, and emissions, and can be uploaded straight to the UK Environment Agency's website.

The trading element is new to most operators. The price of allowances on

Blue Next, the Paris-based environmental exchange, fluctuates considerably, currently by €0.50 or more a day. Ahead of the scheme's official start date, allowances are trading around €10 per metric ton but are expected to rise to €25 or even €50 per metric ton over the next few years.

Duffy suggests operators get involved early. "More forward-looking operators are trading allowances now and may get an advantage when prices go up," he points out. No point, after all, in paying more for allowances than is necessary.

Some operators are 'off-setting' their emissions by funding non-profit organizations involved in environmental good works or in research of alternative fuels such as biomass.

In the technical department, numerous emissions-reducing techniques are being rapidly adopted. As Steve Brown, vice president of operations at NBAA, points out, operators of older aircraft can retrofit newer engines if the business case justifies it, install winglets, conduct aerodynamic clean-ups, and add more precise digital technology. Brown also suggests doing a weight-saving analysis,

particularly of the discretionary payload such as the galley. Passengers can also be asked to limit baggage.

Fuel saving produces the biggest pay-offs. Engines can be started up only when the aircraft is facing in the outbound direction and modern aircraft can be taxied on one engine. But the biggest fuel-saver is running at maximum-range cruise power settings, as shown in Gulfstream's research.

Assuming a California spot market price of US\$5.08/gallon including taxes (the price applicable in December 2010), fuel savings of US\$5,186.68 could be made on a 2,200 nautical mile westbound flight of a G550 with six passengers. The actual fuel saving was 1,021 gallons for a CO₂ saving of 22,000 lb. The savings were assumed on the basis of a long-range cruise speed of Mach 0.80 instead of the maximum cruise speed of Mach 0.87. Discretionary items weighing 500 lb were removed from the aircraft, engine idling time was reduced by 30 minutes, and no fuel was carried for the return trip.

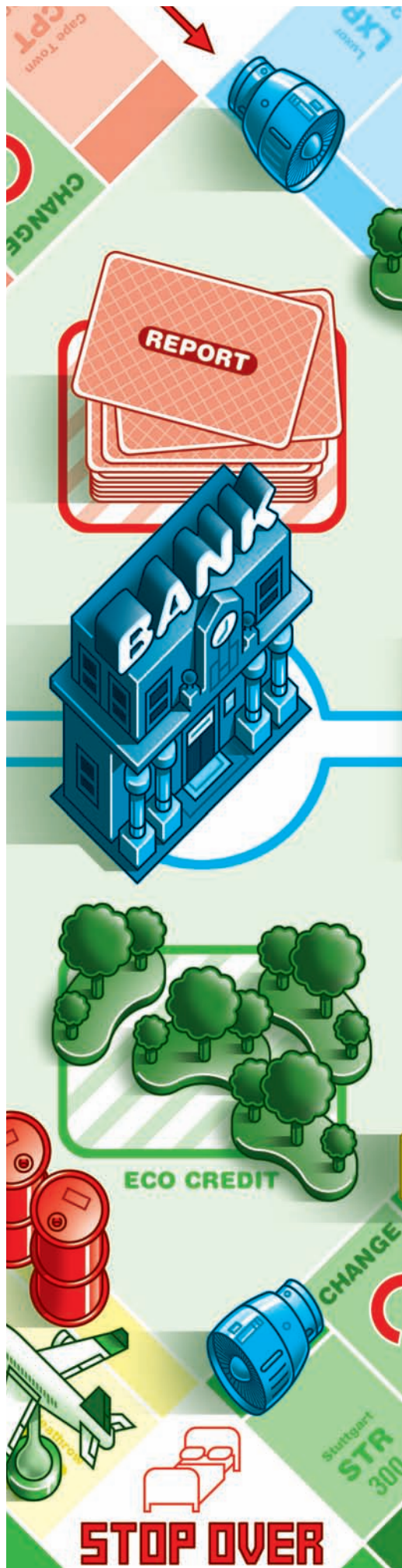
Universal Weather's www.eu-ets.aero website, has a wealth of information on the pitfalls in navigating the scheme.



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Neil Duffy, ETS technical manager, ICM ETS





Validation

First verifier to be approved in France, Paris and London-based VerifAvia, hit the ground running. Standing between operators and the European Commission, it rapidly verified the greenhouse gas emissions and payload metric ton/kilometer (TK) for over 400 small emitters in 40 countries, the vast majority of them in North America. And, as VerifAvia's ETS expert, Tobias Konik, points out, at least half of them were late with their emissions reports. "All of our clients have complied now, though," he adds.

VerifAvia developed a simplified and cost-effective system for small emitters that avoids the time and expense of a site visit. Qualifying operators can conduct the process remotely by email.

Konik, who is conducting a large-scale investigation of the impact of environmental restrictions on business aircraft, has his reservations about the scheme. "Small emitters have no incentive to reduce their emissions. They're not rewarded for saving carbon," he explains. "The only way they can



reduce emissions is to buy new aircraft with a better fuel coefficient." Where are the incentives, he asks, to fly more slowly or employ other fuel-saving measures?

More accurate, he argues, would be a system based on the measurement of fuel burn. "This would account for everything – speed and payload," he says.

VerifAvia's in-depth investigation of the impact of environmental restrictions on the industry could turn out to be a landmark. So far, it's covered over 50 operators and, as well as including carbon emissions, looks at the effects of limits on noise, nitrogen oxide, fuel taxes, and other factors as well as the ETS scheme.

"The only way they can reduce emissions is to buy new aircraft with a better fuel coefficient"



Tobias Konik, EU ETS Lead Auditor, VerifAvia

In Washington, however, opposition is growing. In late October 2011 the US House of Representatives passed a bill that actually bans all US airlines and general aviation operators from even participating in the scheme. The European Emissions Trading Scheme Prohibition Act of 2011 applies if the scheme is "unilaterally imposed on operators", which is how the US industry sees it. The FAA has also been ordered to do all it can to ensure operators are not penalized by the regulations.

With China and much of Latin America joining this fight, it may yet force significant further modifications to the scheme, although probably not for small emitters.

All systems go?

But so far there's nothing to indicate the scheme won't kick off in 2012 as planned. In effect it means that business jets with low payloads

– that is, inefficient burners of fuel – will have to purchase most of their carbon allowances under the scheme. "They will get a lower percentage of free allowances," explains Duffy.

Still, resentment lingers among operators. Many US operators complain the burden of complying with the ETS scheme isn't justified by the environmental savings. A busy US operator, for example, produces 3,000-4,000 metric tons a year, which is less than 15% of the new 25,000-metric ton benchmark.

Some of the least happy operators are Fortune 500 firms whose executive jets typically fly straight in and out of Europe for business meetings, adding few extra carbon-producing legs in European airspace. "And the majority of those emissions are not in European airspace," points out Hartley.

The pressure is such that the EC may have to listen to North American complaints. ☞