



SUSTAINABLE AVIATION – Are the U.S. and E.U. an Ocean Apart?

Leaders in Washington D.C., Brussels, and national capitals across Europe, are seeking to tie the economic recovery of air travel in a post-COVID world to more sustainable air travel and a greener, more resilient growth strategy. In Europe, the European Green Deal, introduced by the European Commission, has set a new standard for environmental and decarbonization policy, and some policymakers in Washington D.C. are looking to that proposal as a framework for the U.S.'s own sustainability strategy.

With President Biden in the White House and a slim Democratic majority in Congress, there are renewed calls for sustainability efforts. However, while U.S. policymakers are playing catch up with their E.U. counterparts, the private sector and investors alike are prioritizing Environmental, Social, and Corporate Governance (ESG) efforts, which are largely intertwined with a shift towards sustainable travel.

As some U.S. lawmakers have proposed their own version of a “Green New Deal,” we can already see the effects of the “Brussels Effect,” whereby jurisdictions beyond the E.U.'s borders follow the bloc's regulatory lead, on the aviation sector. While the two sides often utilize policy proposals from one another, there are several differences between how the E.U. and U.S. are planning their future. Below we outline some of the key similarities and differences between how both world and market powers are leading the way to establish a greener future for aviation.

Emissions Standards

The aviation sector is unique in its global reach – sustainability efforts in transportation in one part of the world can have a strong impact in other geographies. The most important agreement currently on the international stage comes from the United Nations' (UN) aviation agency, who has set up a carbon offsetting mechanism also known as the (CORSIA). Under this mechanism, participating countries would purchase carbon credits to offset their emissions and airlines are required to report their CO2 emissions annually. From 2021 to 2027, it will only apply to parties that have volunteered to participate.

However, from 2027 to 2035 it will apply to all ICAO member states, except for those with less than 0.5% of international aviation activity in revenue tonne kilometres, Least Developed Countries (LDCs), Small Island Developing States (SIDS) and Landlocked Developing Countries (LLDCs) unless they volunteer to participate. This scheme is often criticized for focusing on trading emissions, rather cutting emissions.

European Union

In Europe, the ICAO's carbon offsetting efforts are considered to lack ambition, since participation in CORSIA is voluntary and lacks enforceability on a global scale, beyond clear issues around carbon offsetting. While the European aviation industry is considered the most advanced in terms of sustainability, there is mounting political and public pressure on the E.U. and European industries at large to lead the way on more ambitious global sustainability agreements. We expect this to be a key topic in the ICAO's biannual meeting in Tokyo, December 2022.

In the meantime, the European Green Deal's set of policy initiatives has the overarching aim of making Europe climate neutral by 2050 and reducing greenhouse gas (GHG) emissions by at least 55% by 2030. In the Sustainable and Smart Mobility Strategy published in December 2020, the European Commission lays out its vision for the future of transport and for its reduction of GHG emissions by 90%.

In light of these environmental developments, aviation has become a target of E.U. policy-makers keen on delivering on the bloc's sustainability objectives. The sector has been a lifeline to European economies and a source of 'national pride' – which helped it emerge generally unaffected by previous environmental legislation. A clear example is the absence of a fuel tax, which the European Commission is determined to rectify when it proposes a revision of the Energy Taxation Directive (ETD) this June. This move is supposed to favour the scalability and uptake of sustainable fuels. Beyond taxation, Brussels will make use of a wide range of policy instruments to curb aviation's emissions.

The EU Emissions Trading Scheme will soon be reviewed to bring down the number of free allowances, and for what concerns aviation, to be made compatible with ICAO's CORSIA whose voluntary phase entered into force in January 2021. Carbon pricing in the EU ETS scheme is proving to be a useful policy tool, although its long-term efficacy for aviation is being debated. In February, the price of carbon soared to more than 40€ per tonne for the first time on record. This trend is bound to bring additional revenue to the EU and Member States' budgets, which in turn will be used to invest in clean technologies and infrastructure.

United States

On the other side of the Atlantic, the United States has taken a far less ambitious approach to curbing airline GHG emissions so far. In December 2020, former President Trump's Environmental Protection Agency (EPA) established the U.S.'s first-ever enforceable standards for GHG emissions from commercial aviation, aligning US standards with the ICAO's international CO₂ emissions standards. The rules require manufacturers to fit all new commercial and business aircraft sold with more fuel-efficient engines that emit less CO₂ by 2028. President Biden promised that he would "lead the world to lock in enforceable international agreements to reduce emissions in global shipping and aviation." Biden campaigned on targeting airline emissions by incentivizing the creation of new, sustainable fuels for aircraft, improving air traffic management, and other changes to aircraft technology and standards.

FTI's Point of View

The EU will be able to pursue a far more aggressive emissions reduction strategy than the U.S. because there is broad support across E.U. member states and public opinion for ambitious climate action. In the U.S., emissions reduction mandates and addressing climate change more broadly is a contentious issue, with strong Democratic backing and overall politicization of the issue. Measures that need approval of the U.S. Congress face very tough odds in the current 50-50 split Senate, as these measures were not passed through reconciliation which requires only a simple majority. We believe that the discord around pursuing emissions reductions may hinder the U.S. from implementing any long-term strategy in the near future, whereas, the European consensus around reducing GHG emissions gives the E.U. flexibility to put a long-term strategy in place, without fear of it being reversed after personnel changes in the Commission, Council, or Parliament. However, the level of flexibility that the European Union will be granting to Member States when they transpose new E.U. legislation into

national law will be a key factor in determining the level of success. Too great flexibility on targets risks to jeopardize the E.U.'s ambition, as Member States tend to see it as a reason to be less ambitious.

ESG Investing

ESG efforts are increasingly being factored into investment decisions in the U.S. and Europe, a trend being led by investors and bolstered by regulatory proposals that inform investors. A link to our recent report on Global Airlines and ESG is found [here](#) some high level views on this are as follows:

European Union

A new E.U. regime on sustainability-related reporting is set to be published this year. The first component of this new regime, governed by E.U. Taxonomy Regulation (2018/0178 (COD)), establishes a common European classification framework for investors and companies to determine which of their activities are sustainable. This is aimed at combatting “greenwashing” and giving investors and firms a clear criterion to facilitate informed investment decisions. Most of the Taxonomy Regulation’s provisions will enter into force on December 31, 2021. The other components focus on ESG disclosure, risk assessment requirements, and regulation. The Commission is expected to issue within the next three months how to achieve compliance with this.

United States

President Biden has made it clear while on the campaign trail and again in office, that he intends to require public companies to disclose climate risks and GHG emissions in their operations and supply chain. Gary Gensler, who recently took over as the head of the Securities and Exchange Commission (SEC), is expected to tackle the issue of ESG reporting early on in his tenure. The strongest mechanism that Gensler would have at his disposal to strengthen environmental reporting for public companies would be amending Regulation S-K under the Securities Act of 1933, which outlines the various qualitative reporting requirements for public companies.

FTI’s Point of View

Environmental considerations are increasingly factored into investing on both sides of the Atlantic. Investors are driving this change in the U.S., whereas in Europe there is more of a synergy between policymakers and industry that they can deliver on higher ambitions as long as the adequate funding can be unlocked for green investments.

Clean Technology & Sustainable Aviation Fuels

The prospects of a more sustainable aviation are most inextricably linked to the aviation industry’s ability to innovate and replace its current equipment and fuel with greener alternatives. Unless cleaner aviation technology and sustainable aviation fuels (SAFs) are developed, the aviation sector cannot decarbonize and grow at the same time. On both sides of the Atlantic, airlines and manufacturers are taking bold steps to invest in greener flying technology and fuels, but with a chasm between the level of government involvement.

European Union

SAFs are generally considered the single most promising option to make air travel greener, particularly for longer-range flights, where alternatives to liquid fuel (e.g. hydrogen and electrification) will not be available within a foreseeable timeframe. The Commission will present its proposal ReFuelEU Aviation in the second quarter of 2021, in order to create a stable policy framework for the nascent (almost non-existent) SAF industry in Europe that helps boost supply and demand in Europe. According to preliminary analyses, the EC is considering – among other measures – introducing SAF blending mandates on fuel suppliers as well as airlines to encourage airlines to increase SAF usage. However key challenges remain to be addressed. Chief among all, production costs remain exceedingly high, with kerosene fuel being three times cheaper than SAFs. Additionally, price volatility of feedstock, a lack of policy framework, limited supply/demand, slow ASTM fuel-approval process also have contributed to SAF representing only 0.01% of aviation fuels in Europe today. The aviation sector – European and global – will be watching closely how the E.U. will try to approach this.

Although EC officials are betting on power-to-liquid fuels for aviation – which will avoid renewable fuels displacement from other transport modes – an additional major hurdle to face is the sustainability criteria for biofuels' feedstock. The issue will be reviewed by the European Commission in the Renewable Energy Directive (RED) in June. In the current directive, there is a clear preference for advanced biofuels made from residues, although certain first-generation biofuels are still tolerated (e.g. bioethanol from corn). However, a growing consensus among politicians and the industry will likely see food crop-based biofuels excluded from the fuels mix, due to the potential impact on the food value chain and the environment at large. The European aviation industry has committed to only opt for advanced biofuels for SAF, as a way to avoid backlash from policymakers and civil society. Despite countries like Sweden have showed openness to first generation biofuels for SAF, it would be counterproductive for the industry to show a lack of ambition on the topic.

Overall, new aircraft and engine technologies will make sure that innovative alternative fuels solutions are made available and deployed rapidly. Although electric and hydrogen-powered aircraft will take decades before being market-ready and will be initially limited to shorter haul flights, it is fundamental to have the correct policy framework and appropriate funding available to boost fleets' renewal in the future..

United States

As it currently stands, subsidies, and research and development grants are the primary tools that the U.S. federal government uses to promote SAFs. Under pressure from industry groups, including the National Air Transportation Association (NATA) and Airlines for America to do so, the Biden administration could incentivize biofuel development and procurement by raising the sustainable fuel subsidy, which is currently set at \$1. NATA was reportedly scheduled to meet with the Federal Aviation Administration (FAA) in February to advocate for an increase in the sustainable fuel subsidy to \$2 a gallon.

There is also potential for congressional action on emissions reductions, namely the Representative Julia Brownley's (D-CA-26) Sustainable Aviation Fuel Act (H.R. 741) that would set a national goal for the U.S. aviation sector to reduce GHG emissions by 34% by 2035. The bill would

Require the EPA to establish an aviation specific low carbon fuel standard, similar to California's Low Carbon Fuel Standard.
Require the EPA to establish a blender's tax credit between \$1.50 and 1.75 per gallon.

Allocate \$1 billion of grant funding over five years to "projects in the US to produce, transport, blend, or store sustainable aviation fuels".

Authorize \$175 million in research funding to push the limits of existing SAF technology.

In 2020, the House of Representatives passed the Moving Forward Act (H.R. 2), which would have created a five-year \$1 billion grant program in the U.S. Department of Transportation to develop, demonstrate, and deploy SAFs and low-emissions aircraft technologies.

The U.S. Air Force's Agility Prime program will spend \$35 million for fiscal years 2020 and 2021, aiming to reduce investment risks and help regulators grant certification, specifically for electric vertical take-off and landing aircraft. Additionally, the National Aeronautics and Space Administration's (NASA) Advanced Air Mobility National Campaign intends to collect data.

The FAA 's Continuous Lower Energy, Emissions and Noise (CLEEN) Program allows the FAA to enter into cooperative agreements with companies that develop SAFs and emissions reduction technology for aircraft. Companies such as Honeywell and Pratt & Whitney have used CLEEN funding to test several SAFs that are now certified to be used in aircraft. Additionally, Boeing used CLEEN funding to develop aircraft wing improvements that resulted in a 2% reduction in fuel burn.

Although it has yet to mandate particularly strict requirements for SAFs and cleaner aircraft technology, the U.S. federal government's investments in private sector research and development is crucial in developing the fuels and technology needed to decarbonize U.S. aviation.

Industry Efforts

As government initiatives to develop clean aircraft and SAFs make varying degrees of progress in the E.U. and U.S., the airline & aviation industries are committing to a greener future for their fleets. Not only are they putting their 'money where their

mouth is', but U.S. airlines are making plans and investments to reduce CO2 emissions through technological innovation that far exceed any policy proposals on currently on the horizon.

European Union

Although the European Commission is positioning itself as a global frontrunner in setting up a policy framework for sustainable aviation, the European industry has also seized the momentum unleashed by the European Green Deal – and the COVID recovery – to work together and make significant investments in clean technologies.

Case in point was Airbus' announcement that it is working on a new generation hydrogen-powered aircraft to be made available by 2035. In February, a partnership between KLM, Schiphol Airport, Shell and the Dutch Ministry for Infrastructure announced to have successfully flown for the first time a passenger flight partly on sustainably produced synthetic kerosene. It is unprecedented that industry and policymakers find themselves so aligned on decarbonization. Europe's airlines, airports, aircraft manufacturers and air navigators recently laid out a pathway towards carbon neutrality by 2050 and for 55% CO2 reductions by 2030, in line with the Paris Agreement and the EGD. The report, called 'Destination 2050 – A route to net zero European aviation, was welcomed by civil society and policymakers alike for its ambition as well as the collaborative effort of the industry. It is a key lesson to be learnt from these unprecedented times: for an industry to be seen as credible and be heard, it is imperative to show unity, clear commitments and policy demands aligned with policy-makers' priorities.

United States

In the U.S., both airlines and aircraft manufacturers are taking the lead in investing in sustainable aviation technologies. American Airlines, Delta Air Lines, United Airlines, and JetBlue Airways (only for domestic flying) are all committed to achieving carbon neutrality over the coming decades and Alaska Airlines recently stepped into this area as well. In May 2019, United committed \$40 million to purchase 10 million gallons of sustainable aviation biofuel, which now powers every United flight departing its Los Angeles hub. Also, in 2019, Delta invested in 10 million gallons per year of sustainable aviation biofuels and announced and Alaska Airlines has experimented with using 20% biofuel on select commercial flight since 2011. Most U.S. airlines have relied on purchasing carbon offsets in pursuit of net zero emissions, United Airlines is making significant investments in carbon sequestration technology. Lastly, Boeing announced that it plans to make its 100% of its fleet able to fly on 100% biofuel by 2030.

Insight: We expect certain E.U. member states, such as the Netherlands and Sweden, to take more ambitious steps on sustainability policies to set the standard for the E.U. and shape the policy debate for the rest of the bloc. In the US, you do have states that are more proactive, such as California, but there has not been significant follow through on federal level.

We also expect that the U.S. is very likely to be more supportive of first-generation biofuels even for aviation, than within the E.U. The E.U. is going the opposite way – and the industry too. Total rejection of food crop-based biofuels for fear of ILUC and public shaming.

Conclusion

Overall, despite the unprecedented impact on the sector, E.U. policymakers are determined to pursue their climate agenda. Higher climate standards mean that aviation will have to step up and contribute more decisively to the climate challenge and build a reputation as a solutions-driven industry that proactively looks for ways to support climate policies.

Whether or not American legislators and regulators will make significant headway in addressing carbon emissions, we expect that investors, airlines, and aircraft manufacturers will continue to push the industry in a more sustainable direction, bolstered by the success and forward-looking commitments of their European counterparts.

The international consensus is also moving into this green direction. Sustainable transport is one of the five key pillars of the upcoming UNFCCC's climate Conference of Parties (COP26) to be held in Glasgow in November. After five years of the Paris Agreement, Parties that have signed up to the Treaty must submit new plans, the so-called National Determined

Contributions (NDCs), outlining renewed ambition for their climate objectives for 2030. During the conference, there will be intense discussions around what transport – and aviation more specifically – can and should do to reduce its carbon emissions. In January the more +400 companies representing the 7 hard-to-abate sectors (cement, steel, aluminium, chemicals, maritime, aviation and trucking) came together to launch the Mission Possible Partnership. This new coalition is looking into how to make aviation more sustainable using SAFs. With the goal of creating a ‘viable, high-ambition roadmap to net-zero emissions by 2050’, the coming months will be rife with industry sustainability announcements with which negotiators in Glasgow will have to reckon with.

With the U.S. back at the table for now, the E.U. should be empowered to be more ambitious in these multilateral forums and fend off competition from China on trade and green investment matters. But an ‘unreliable partner’ – as it re-joined, it might leave again. U.S. commitments to climate leadership will hang in the balance in subsequent presidential elections. Instead, the E.U. can proceed to implement its ambitious goals mindful of Member States’ internal implementation procedures, which may see such goals get watered down. The precarious position of climate change as a cornerstone of U.S. policy gives the Biden administration a very narrow window to act to begin the process of decarbonize American aviation. For this reason, we expect to see the Biden administration act with urgency on this, most expediently through beefing up SEC reporting requirements, and later through harmonizing with E.U. emissions standards.

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