

WASB Position: Environment and Slots

An industry working to achieve significant environmental goals

The aviation industry has made significant progress in fuel, CO₂ and noise efficiency, halving the amount of fuel used per flight compared to 1990. This has been achieved through technological advancement and improvements in operations and infrastructure.

The industry does, however, recognise that there is an environmental cost to providing connectivity, freedom and economic development. This is why the wider industry is strongly committed to addressing its environmental impacts, while continuing to provide the social and economic benefits aviation delivers for consumers.

1,478 airlines operate a fleet of 33,299 commercial aircraft in service serving 3,780 airports through a route network of several million kms managed by 162 air navigation service providers¹. 2019 figures show that world's airports accommodated 9.1 billion passengers, nearly 120 million metric tonnes of cargo and over 102 million aircraft movements².

Already efficient...but room for improvement

The global air transport industry has adopted a long-term climate goal of **net-zero carbon emissions by 2050**, confirming the commitment of the world's airlines, airports, air navigation service providers and the manufacturers of aircraft and engines to reduce CO₂ emissions in support of the Paris Agreement 1.5°C goal.



[Waypoint 2050](#) outlines a number of key elements to achieve the decarbonisation of air transport, including: Increasing use of Sustainable Aviation Fuels (SAF) and a transition away from fossil fuels, the introduction of electric and/or hydrogen powered aircraft alongside evolutionary airframe and propulsion systems, continued improvements in efficiency of operations and infrastructure including at airports and ANSPs, and investment in carbon offsets and removals.

The role slot coordination plays to achieve the industry's environmental commitments

There are 198 slot coordinated (Level 3) airports globally. Slot coordinated airports are the most congested, and just over half of the world's air routes operate at these airports. Their level of demand significantly exceeds the capacity of their infrastructure.

At congested airports slot coordination is implemented to manage the allocation of airport infrastructure to airlines following the global standard outlined in the Worldwide Airport Slot Guidelines ([WASG](#)). The prime objective of airport slot coordination is to ensure the **most efficient declaration, allocation and use of available airport capacity** to optimize benefits to consumers, providing connectivity in a sustainable and responsive manner.

Achieving such objective assists in meeting environmental goals. As the airport industry is asset-intensive, airport operators have no flexibility to redeploy capacity based on patterns of demand. As such, attaining high utilization of existing airport infrastructure is instrumental from a sustainable and environmental standpoint.

The principle of taking environmental factors into account was purposefully added to the WASG in April 2020 as a criterion to be considered when allocating and managing slots. Consequently, as part of the process of ensuring the most efficient use of slots, improving environmental performance is now considered alongside other criteria that ensure competition and connectivity are also improved.

There are additional tangible sustainability benefits from the slot coordination process: it provides flexibility for the industry to respond to regulatory and changing market

¹ September 2020, www.atag.org

² Airports Council International (ACI) World, Annual World Airport Traffic Report, 2020 edition.

conditions, as well as changing consumer demand, and it **minimizes congestion and delays**.

Furthermore, the slot monitoring process disincentivizes any actions leading to congestion and delays.

The Worldwide Airport Slot Board (WASB) consisting of airlines, airport operators and slot coordinators, is the governance body responsible for the WASG with a mandate to review and consider ways of improving the slot process, enhance slot policy and support implementation of the WASG globally.

The WASB has reviewed and analysed the impact of environmental conditions on slots and believes that the industry's joint efforts detailed through the sustainability targets outlined above are far and away the most effective means of taking more advanced steps to improve environmental performance.

Adding further environmental provisions to the WASG would be highly complex in implementation, might reduce operational flexibilities and connectivity, and would only target slot coordinated airports without holistically considering the aviation ecosystem. There are more effectual and less complex methods already in place to achieve superior environmental targets.

Noise management and slots

The ICAO Balanced Approach to Aircraft Noise Management³ should remain the most authoritative guidance material at global level to address noise issues and concerns. When movement caps or night curfews are imposed upon airports to limit noise exposure, the slot process may assist in redistributing traffic and ensure that airport capacity and caps/curfews are not exceeded.

Nevertheless, it has to be considered that noise related measures themselves can lead to unnecessary environmental impacts in terms of longer tracks and holding patterns due to curfews.

The practicalities of 'green slots'

In practice, allocating capacity in relation to the environmental performance of aircraft may prove to be complicated and sometimes counterproductive.

There can be trade-offs and interdependencies between various environmental measures. For example, some technical measures which mitigate the noise impact of aircraft may result in an increase of CO₂ emissions.

Consequently, if so called 'green slots' are allocated based on one environmental metric, they may result in dampening improvements on other environmental impacts. If a green slots concept was introduced to encompass all environmental impacts, the metric to be used would either require an arbitrary over-simplification or end up being extremely complicated to administer.

Green slots may also incentivize airlines to use aircraft which are less suited and efficient for a specific market. Such a counter-productive incentive could potentially shift or even increase noise and emissions at other airports, or shift use of certain aircraft onto airports/routes without slot coordination for no global CO₂ benefit.

The introduction of green slots at an airport may distort competition between carriers

If all slots at an airport were allocated on the basis of the environmental performance of aircraft, carriers based at that airport may be particularly affected. Indeed, home carriers have no choice what aircraft to operate as all their aircraft will have to land and take off at the airport. In practice, such a scheme may force the home carrier to phase-out part of its fleet resulting in aircraft becoming prematurely redundant before the end of their useful economic life.

Many passenger aircraft are converted into freighters when the aircraft are at half their life cycle. Impact to the cargo fleet would be detrimental for necessary growth of this sector.

At airports where green slots would apply only to new capacity or in relation to the use of a specific runway, the home carrier may have an advantage over other carriers as it could capture new capacity by dedicating its most performant aircraft to green slots and continue to operate the rest of its fleet using normal slots. Such distortions may result in retaliatory measures in other jurisdictions.

Given only 5% of the world's airports are slot coordinated and only a proportion of new slots are allocated each season, a complex and burdensome policy of allocating slots according to environmental parameters would be distortive and not meaningful in terms of the broader, global objectives the industry has set itself.

Aviation infrastructure and efficiency

Delivering aviation infrastructure and new efficiencies is key to reducing any capacity constraints that do exist and would support the overall reduced CO₂ objectives of the Net Zero

³ ICAO Assembly Resolution A38-17, Appendix C. See also ICAO Doc. 9829.

2050 ambitions, enabling less holding, optimizing aircraft to market and providing optimal flight routings. Conversely, introducing noise related restriction measures can lead to unnecessary environmental impacts in terms of longer tracks and holding patterns due to curfews. Airport and airspace capacity improvements and enhanced operations go hand in hand with efficient slot coordination as a planning tool to support sustainability objectives.

Airports themselves have long been addressing, minimising, and mitigating the environmental impacts of aviation. This has been demonstrated through their ability to decrease emissions over the last 10 years, supported and enabled by Airport Carbon Accreditation despite significant traffic growth in that time. Concurrently, airport operators invest in their long-term capacity by adopting clean technologies, reducing carbon and greenhouse gas emissions, exploring new market opportunities, and supporting the use of greener aircraft and equipment. Likewise, airlines have made considerable progress on Sustainable Aviation Fuels with over 450,000 successfully operated flights using SAF and \$17 billion of forward purchase contracts. Progress in developing hybrid electric and hydrogen powered aircraft has also been significant, with the first concept aircraft expected to be flying in the next five years.

All in all, the most effective route to achieving net-zero emissions is through the global industry's commitment to ICAO global policy. Critically, this ensures that where carbon emission mitigation policy is applied, competitive distortion and carbon leakage is minimised. The aviation industry has made decisive progress through ICAO with the establishment of the global market based measure, CORSIA and the adoption by ICAO of an "ambitious long-term aspirational goal that is compatible with net-zero global emissions by 2050".

The way forward: implementing the WASG

The WASG remains the industry standard for the management and allocation of airport capacity and reflect the proven best practice for the coordination and management of airport slots and planned operations. Policies and provisions in the WASG are consistent with the aviation industry's environmental objectives and continues to support a sustainable aviation.

Recognizing the everlasting evolution of the aviation industry, we are devoted to persisting in conducting technological advances, operations and infrastructure enhancements, and of foremost relevance, to continue further assessing the responsiveness of the industry to attain such environmental goals.