Towards Sustainable Aviation
A perspective from the Etihad Aviation Group

January 2020
EXECUTIVE SUMMARY

- The United Nations describes climate change as “the defining issue of our time”
- Aviation is attracting global attention in this debate
- Significant initiatives have been announced to help contain aviation’s carbon emissions. But many are in their infancy and will not have near-term impact
- The Carbon Offsetting and Reduction Scheme for International Aviation, devised by the International Civil Aviation Organisation, pledges carbon neutral growth by airlines from 2020, with net emissions by 2050 reducing to 50 per cent of 2005 levels
- But framed against industry forecasts that air traffic will double within 20 years, and passenger kilometres will more than triple by 2050, compared to 2015, there is pressure on airlines to increase and accelerate carbon reduction targets
- The United Nations has set a target of zero net carbon emissions by 2050
- Etihad Airways too is committed to zero net emissions by 2050, and to halving its 2019 net emission levels by 2035
- Etihad Airways believes emissions relief of the magnitude sought can only be achieved through a combination of comprehensive and ambitious collaborative actions across the entire air transport community, including governments, and a meaningful program of carbon offsets
- To support macro ambitions, Etihad is committed to engaging with the broader aviation eco-system and the travelling public to continuously develop and implement practical, incremental and quickly deliverable initiatives
- The airline has formed a global strategic partnership with Boeing, a key element of which is to use the airline’s fleet of Boeing 787 Dreamliners as flying testbeds to assess initiatives to improve aircraft efficiency and reduce emissions
- The airline is also committed to testing and, when possible, introducing sustainable aviation fuels from various sources into its energy mix
- Etihad believes one of the biggest, most effective and most required initiatives to reduce aviation’s carbon emissions is urgent and ongoing investment in reform of airspace management, and greater coordination between national airspace navigation service providers. Such initiatives would markedly improve traffic flows, reduce airspace congestion and significantly reduce emissions
- A deterrent to innovation is the high cost of research and development. Etihad favours funding for products and programmes which, through appropriate qualifying mechanisms, are considered likely to materially reduce aviation’s emissions
- Etihad urges commitment by governments to help expedite research into and development of affordable sustainable aviation fuels, to ensure widespread availability in commercial quantities

TOWARDS SUSTAINABLE AVIATION

Overview

As concerns rise globally over climate change and the growing impact of greenhouse gases, significant pressure is building for industry to reduce carbon emissions and adopt practices to help stem further environmental damage.

While the operating practices of all sectors are attracting significant attention, few have been scrutinised as comprehensively as air transport, which is responsible for approximately two per cent of global carbon emissions.

The International Air Transport Association (IATA) predicts continuing strong growth in global air traffic, with passenger journeys set to double from 4.5 billion in 2019 to an estimated 9 billion by the late 2030s.

The International Transport Forum (ITF) at the Organisation for Economic Cooperation and Development says international aviation will experience compound annual growth of 3.8% through to 2050, forecasting that traffic will reach 16.5 billion passenger kilometres, or 3.6 times the 2015 volume. Additionally, domestic passenger kilometres are forecast by ITF to grow to 5.5 billion; 2.2 times 2015 levels.
With such significant expansion in the face of global expectations that emissions growth will at the very least be neutralised, commitment to, and delivery of, broad and scalable sustainability is critically important.

Through the global Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) of the International Civil Aviation Organization (ICAO) many nations, including the United Arab Emirates, have pledged that from 2020 their airlines will transition to carbon-neutral operations, and by 2050 their net carbon emissions, particularly from aircraft, will reduce by 50% relative to 2005 levels.

But will these be enough?

Current actions by, and proposals of, the air transport industry to mitigate emissions range from fleet renewal and operational measures to longer-term steps such as widespread production of affordable quantities of sustainable alternative fuels, development of zero-emission electric aircraft for short haul flights and development of ‘super-aerodynamic’ airframes and ultra-efficient engines.

Given the paucity of options to deliver immediate reductions in emissions, carbon offsets – the basis of CORSIA - are intended as a significant medium-term counterbalance to aviation’s CO2 through investment in other environmental projects.

However, there is an urgent requirement for more achievable actions in the short to medium term, starting with innovative measures to reduce carbon emissions incrementally on the path to more permanent solutions.

Etihad Aviation Group is committed to achieving zero net carbon emissions by 2050, and to halving its 2019 net emission levels by 2035.

Etihad views emission reductions as a whole-of-industry responsibility and is actively exploring collaboration across the entire aviation eco-system, including partnerships with government agencies, to address structural opportunities such as airspace management reform, which, even with small measures, could deliver seismic reductions in aviation’s carbon footprint.

There is a saying that in times of crisis, families can either pull themselves together, or pull themselves apart. It’s a choice. And now, more than ever before, the aviation family needs to pull together.

SUMMARY: Air travel is growing rapidly. So are aviation’s carbon emissions. There are significant measures in place, or proposed, to reduce emissions. But with many measures unlikely to deliver short term outcomes, more immediate initiatives need to be identified and implemented by the entire aviation family.
ETIHAD AIRWAYS

Etihad Airways is the national airline of the United Arab Emirates.

Established in 2003 in the UAE capital, Abu Dhabi, Etihad today is a high quality, mid-size, full-service airline, using a fleet of modern Airbus and Boeing aircraft to operate passenger services to almost 80 international destinations.

Etihad’s mission is to deliver an innovative value proposition which focuses on the needs of customers in Abu Dhabi and around the world.

One of the company’s core commitments is to contribute in a meaningful and continuous way to help minimise its impact on the environment, and to this end the Etihad Aviation Group is committed to achieving zero net carbon emissions by 2050, and to halving its 2019 net emission levels by 2035.

In addition to organic sustainability initiatives, Etihad believes collaboration with its aviation partners to develop and deliver sustainable products and practices is both essential and the most immediate and workable way to address its own emissions and help produce solutions for broader use in the air transport community.
REDUCING THE CARBON FOOTPRINT, ONE STEP AT A TIME

The sustainability strategy of the Etihad Aviation Group is aligned to the 17 Sustainable Development Goals of the United Nations. This document addresses one specific element of the UNSDG program – helping to stem CO2 emissions created by aircraft operations throughout the ‘life cycle’ of each journey.

Typically, this involves preparation of each aircraft, including maintenance, cleaning, fuelling, loading, powering and temperature-controlling on the ground; optimal route and load planning, fuel optimisation measures on the ground and in the air, and managing real-time variables such as weather, winds and air traffic congestion; then arrival procedures, including the most efficient approach and descent, taxiing to the terminal, powering the aircraft on the ground, unloading, cleaning, and waste disposal, before the whole process starts again.

Aircraft catering and supply are separate, adding another level of complexity.

Beyond the direct activities of the airline, the life cycle of a flight is influenced heavily by external parties - the aviation eco-system – which includes the manufacturers of airframes, engines, cabin fittings and every component on and in each aircraft; the suppliers of fuels and oils; suppliers of onboard products; ground handling companies, freight forwarders, caterers, airports, air navigation service providers, and all of their respective suppliers.

Governments, too, are integral stakeholders in the air transport industry, not only through their regulatory responsibilities but also through their actions as providers or facilitators of aviation infrastructure, in the air and on the ground. Additionally, the broader policy actions of governments, even those not specifically focused on aviation, frequently impact the sector.

Put simply, this eco-system is significant and complex. Collaboration is critical if the airline industry is to deliver meaningful solutions to the emissions emergency, and collectively even single initiatives will make a difference.

SUMMARY: There are many stakeholders in commercial aviation, and all share the responsibility of reducing carbon emissions. Collaboration between all stakeholders is critical.
FLEET

The largest and most prominent investment an airline makes is in its aircraft. While purchase or lease prices paid for new aircraft vary between airlines according to their specifications and requirements, list prices provided by major airframe manufacturers still reflect clearly the magnitude of investment by carriers, regardless of the financing instrument used.

The January 2019 list prices published by Boeing ranged from USD$89.1 million for a narrowbody 737-800 to USD$244 million for a widebody 787-9 Dreamliner and USD$315 million for a 777-300ER, while in 2018, Europe's Airbus Industrie revealed list prices ranging from USD$81 million for a small, narrowbody A220-100 to USD$110.6 million for an A320neo, and USD$366.5 million for its new A350-1000.

Since its inception in 2003, Etihad Airways has continually been an early adopter of new aircraft types, to ensure that it operates not only the most ‘fit for purpose’ and passenger-attracting fleet, but also the most cost-effective and sustainable.

Etihad has one of the youngest aircraft fleets in the world, averaging just under six years. The company continues to invest in the latest-technology aircraft from Airbus and Boeing, while progressively retiring older, less-efficient types.
In December 2014, Etihad received its first twin-engine Boeing 787-9 ‘Dreamliner’, an aircraft which delivered a quantum leap in fleet technology for airline operations.

The Dreamliner was the first commercial airliner to be constructed primarily of lightweight composite materials to reduce its weight and increase its flying range, while consuming significantly less fuel than earlier-model aircraft of similar size.

Based on a standardised measure of cost per available seat kilometre, the Boeing 787 is at least 15 per cent more fuel-efficient than any aircraft type previously operated by the airline.

The 787 is now the backbone of the Etihad Airways fleet. At the time of writing, in January 2020, Etihad operated 37 of the type, representing almost 40 per cent of its total fleet and serving almost 40 of its 76 passenger routes. By 2023, this aircraft will represent 50 per cent of the airline’s fleet.

As well as continuing to induct Boeing 787s, Etihad has firm orders for three other next-generation aircraft types – the wide-bodied Airbus A350-1000 and Boeing 777-9, and narrow-bodied Airbus A321neos - while concurrently phasing out older units.

This process of continuous renewal will elevate next-generation aircraft to well over half of the airline’s total fleet by the mid-2020s and, together with a growing number of other sustainability initiatives, will reduce even further the company’s fuel consumption and carbon emissions per available seat kilometre.

But even with such enormous commitments to the most sustainable aircraft available Etihad acknowledges that much more must be done.

SUMMARY: Air transport is an expensive industry. Airlines invest billions of dollars in new, fuel efficient aircraft, with each new model incrementally reducing the impact of aviation on the environment. But even with such heavy investment by airlines, fleet technology alone is not sufficient to address this issue.
THE ETIHAD GREENLINER PROGRAM

In November 2019, Etihad Airways and Boeing signed a groundbreaking global strategic partnership, centred on the Boeing 787 Dreamliner family of aircraft.

In addition to maintenance, training and other operational activities, a key underlying theme of this partnership was a commitment to work towards more sustainable aviation.

Through this partnership, Etihad and Boeing will work together to research and test innovative technologies designed to improve flight efficiencies, cut fuel consumption, introduce more sustainable products and practices and ultimately achieve further reductions in carbon emissions.

These activities will form part of The Etihad Greenliner Program, beginning in late January 2020 with the delivery of new ‘signature’ Boeing 787, wearing a special themed livery to highlight both the Etihad-Boeing partnership and their sustainability research activities, which will include sharing knowledge, resources and learnings to benefit all Dreamliner operators.

Etihad and Boeing will also collaborate on Boeing’s existing 787 EcoDemonstrator program, and to support their alliance the companies announced that Etihad’s entire fleet of Boeing 787s would be available as ‘flying testbeds’ to help assess the sustainable qualities of new products and processes.
This will be a long-term joint program, commencing with the delivery flight of Etihad’s signature ‘Greenliner’ aircraft, on which a number of tests will be conducted using real-time data and analysis drawn from the aircraft’s computer systems.

Supporting its contention that reducing aviation’s carbon emissions is an industry issue, and not specifically an airline issue, Etihad has extended an invitation to aviation suppliers, urging them to consider their own sustainability initiatives, and how they might dovetail with airline efforts to become more sustainable, whether by developing affordable, lightweight replacements for single-use plastic items in the cabin or reducing component or equipment weights to lower fuel burn and emissions.

Etihad also will offer approved partners in the Etihad Greenliner Program the opportunity to test their own sustainability initiatives aboard scheduled flights of the airline’s Boeing 787 aircraft on any of the 40-plus international routes which they fly.

The results will be processed and validated, and the most sustainable initiatives will be used as a base for improving the performance not just of Etihad or its specific suppliers but also of the entire 787 operating community.

SUMMARY: Etihad and Boeing have formed a global strategic partnership which includes The Etihad Greenliner Program, through which they and partners will use Etihad’s fleet of Boeing 787 Dreamliners to research and test sustainability initiatives, with results to be shared with the broader industry.
SUSTAINABLE AVIATION FUELS

The United Arab Emirates is committed to carbon-neutral growth in all of its activities beyond 2020. A major objective of the Emirate of Abu Dhabi, and a guiding principle of its Abu Dhabi 2030 social and economic plan, is to reduce its historic reliance on oil and diversify its economy into a range of new activities.

These include the development of sustainable alternative fuels, which can be produced in commercial quantities for use not only within the Emirate, but also nationally and internationally.

In support of the national objective and of global community expectations, and in line with the global CORSIA scheme, Etihad Airways is an active supporter of alternatives to fossil fuel, and by the end of the first quarter of 2020 the airline will have operated four fights using synthetic fuels, three of them on revenue passenger services from Abu Dhabi and one on the delivery flight of the signature ‘Greenliner’ 787 from Boeing’s South Carolina manufacturing facility.

Through Abu Dhabi’s Sustainable Bioenergy Research Consortium (SBRC), in which Etihad partnered with Khalifa University, Boeing, Abu Dhabi National Oil Company (ADNOC), General Electric, Safran and Bauer Resources, saltwater-tolerant plants were developed, the oil of which is used to produce biofuel.
In 2012, the airline operated a flight using biofuel based on cooking oil, followed in 2014 by a flight using plant-based biofuel sourced externally but refined in Abu Dhabi.

Then, in January 2019, Etihad operated the first commercial flight using sustainable aviation fuel sourced and refined in Abu Dhabi – a Boeing 787-9 service from Abu Dhabi to Amsterdam.

Additionally, it has signed a memorandum of understanding with Tadweer (Abu Dhabi Waste Management Centre) to convert Abu Dhabi municipal waste into jet fuel.

Late in January 2020, Etihad’s newest Boeing 787 will use sustainable aviation fuel produced in the US on its delivery flight to Abu Dhabi from Boeing’s assembly plant in Charleston, South Carolina.

These initiatives are progressive and exciting, and Etihad will continue to participate in research flights to help expedite bringing alternative fuels to market.

But widespread global availability of affordable alternative fuels in sufficient quantities for regular use is still many years away. So Etihad continues to explore more immediate measures to help contain and reduce its carbon emissions.

SUMMARY: *Etihad Airways is strongly committed to the use of sustainable alternative fuels, has tested multiple types and will continue to do so. But development of alternative fuels is in its infancy, and they are neither affordable nor available in commercial volumes.*

**SUSTAINABILITY CASE STUDY: SINGLE USE PLASTICS**

On 22 April 2019 – Earth Day – Etihad became the first airline in the Middle East to operate a flight without any single-use plastics on board.

The route chosen for this trial was Abu Dhabi to Brisbane, Australia, one of the longest sectors in the airline’s network, and the wide range of items used on board this Boeing 787 flight ranged from eco-thread blankets made from recycled plastic bottles to edible coffee cups.
Ahead of this flight, Etihad carried almost 100 single-use plastic items aboard similar aircraft, and by the end of 2019 the airline had removed from its flights 41 of these items, representing 17 tonnes of single-use plastics.

It also pledged that by the end of 2022, it would reduce by 80% the number of single-use plastic items used throughout its business, compared to April 2019.

But there is a problem.

Despite global calls for the elimination of single-use plastics, there are insufficient suitable replacements for use aboard aircraft.

Alternatives such as glass and metal cutlery are readily available – but they are much more expensive to acquire and expensive to carry as they increase the weight of aircraft, and consequently fuel burn and carbon emissions, effectively replacing one problem with another.

As well, even when airlines do invest in compostable or recyclable items for use on their flights, many countries still require waste from commercial flights to be incinerated, negating the benefits of using sustainable products.

Etihad will continue to identify and encourage suppliers to provide or explore alternatives to products such as these, which it can test in service.

The airline also has encouraged all its suppliers to review their own sustainability programs, and identify which, if any, initiatives can be integrated into broader programs of the air transport industry to collectively help reduce the environmental impact of air travel. Sharing of research and resources is critical to collective solutions.

SUMMARY: Sustainable air services cannot be delivered by airlines alone. Suppliers to airlines are also part of the solution. Etihad urges the aviation supply chain to also explore sustainable solutions, and to collaborate with or share their research and innovations with the airlines they supply.
SUSTAINED BY DATA

A key and emerging driver of sustainable flight operations is the data produced by modern aircraft.

More than ever before, information generated during scheduled flights quantifies not only an aircraft’s record of performance but also an historical pattern of flight parameters and technical behaviour, and a valuable predictive tool for future flight planning.

Etihad is embracing data to drive sustainable outcomes, and currently is engaged in multiple research programs, designed to improve efficiency and help reduce carbon emissions.

Here are just two examples.

Etihad is now using aircraft-generated statistical data to assess requirements at individual airports and customise fuel volumes to meet actual needs.

This will reduce carriage of unnecessary taxi fuel and lead to reduced aircraft weights, lowering fuel consumption and emissions.

Data also has yielded similar information about the use of potable water carried on aircraft for toilets and wash basins, presenting a pattern of usage across a range of flights, routes and even times of travel. Historically, many flights have carried more than required.

Etihad is leveraging this rich data, and advances in aircraft sensor technologies, to determine optimum volumes of potable water to be loaded onto flights, again leading to sizable weight reductions on targeted services and delivering lower fuel consumption and CO2 emissions.

Data collected from these evaluations, and many more, will also present fresh opportunities to enhance sustainable operations, while the collective outcomes of these and other incremental measures will deliver substantial emission reductions.

SUMMARY: In addition to fresh research and development, the data already collected by modern aircraft provides significant new paths to sustainable change.
PARTNERSHIPS WITH GOVERNMENTS

Governments across a range of levels are among the largest and most important partners in the global drive to achieve sustainable airline services.

But their actions can also be disconnected from, and even counter to, the efforts of the air transport industry to lower its impact on the environment. Alignment of purpose and processes is essential if each is to support the other in helping to reduce industry emissions.

INVESTING IN AIRSPACE EFFICIENCY

A significant impediment to both the efficiency and sustainability of the airline industry is historic underinvestment by governments in global airspace infrastructure and capabilities, and inconsistency between jurisdictions.

Additionally, a lack of coordination between air navigation service providers continually and critically disrupts the efficient flow of international air traffic.

These shortfalls in airspace productivity will continue to compromise global efforts to reduce the carbon emissions of airlines by lengthening flight paths and causing congestion in critical air traffic lanes.

And as global air traffic volumes continue to soar, disruptions to air traffic will become longer and more frequent, increasing sky congestion, aircraft fuel burn and carbon emissions.

Airlines have invested many billions of dollars in next-generation aircraft, supplemented by a range of organic or partnered initiatives to operate more efficiently.

Greater alignment of air navigation service providers together with increased investment in traffic management infrastructure and continuous development of efficient traffic management practices would deliver seismic improvement in the airline industry’s efforts to achieve carbon-neutral growth, while substantially boosting airspace productivity and driving down both economic and environmental costs.

Etihad Airways has worked independently with a range of air navigation service providers including the GCAA, based at UAE’s Sheikh Zayed Centre and Europe’s Eurocontrol to explore and test more efficient practices, including optimal flight paths, and will continue to work with airspace organisations to help identify further opportunities for more sustainable operations.
The lack of consistent and continuous investment by governments in airspace infrastructure development, reform and alignment seriously undermines airline efforts to become more sustainable.

Ironically, continued underinvestment in airspace management also limits the ability of airlines to meet the stringent sustainability conditions demanded of them by governments.

**SUMMARY:** *Investment in efficient, coordinated airspace management is critical to the delivery of more streamlined flight operations, reducing aviation emissions.*

**INVESTING IN INNOVATION**

Sustainability and innovation go hand in hand. But in an industry as complex, capital intensive and regulated as air transport, the complexity and cost of solutions can seriously slow both.

Etihad Aviation Group views the carbon crisis not just as an issue for airlines, but more broadly as an issue for the entire air transport industry, extending beyond carriers, airports and air navigation service providers to their broader supply chains.

A major deterrent to broad industry participation in developing sustainable solutions in aviation is the high cost of research and development.

Subject to strict qualifying conditions, Etihad favours the introduction by governments of research and development funding to support industry initiatives which have real prospects of affordably and materially progressing aviation’s transition to carbon neutrality.

**SUMMARY:** *Research and development is expensive. The aviation supply chain needs financial incentives to help deliver more sustainable products to airlines.*

**INVESTING IN SUSTAINABLE ALTERNATIVE FUELS**

Sustainable Alternative Fuels are a critical element in the package of measures required to progress the aviation industry to carbon neutrality.

Multiple variants of alternative fuels have been identified and tested by many airlines, including Etihad, but the high cost of research and development has meant that supplies are scarce and prices extremely high, limiting both the production and uptake of early supplies.
The International Transport Forum at the Organisation for Economic Cooperation and Development estimates that under current global energy policy settings, alternative aviation fuels are four times more expensive than the 2015 prices of conventional fuels.

But even under what it describes as a “high ambition scenario”, in which “more advanced aspirations” are implemented by governments, the ITF estimates that alternative fuels will still be approximately triple the 2015 price of conventional supplies.

If affordable alternative aviation fuels are to become widely available, substantial research and development funding will be required by governments to facilitate development, production and distribution of commercial quantities across global markets.

SUMMARY: Sustainable alternative fuels are a key element in the delivery of sustainable air services. But development of alternative fuels is extremely expensive, preventing the development of affordable supplies or commercial quantities. For this to occur in the near term, governments must provide significant financial support, globally, for research and development of these aviation fuel variants.

SUSTAINABLE FLIGHTS:

WHAT ETIHAD WILL DO

Etihad Aviation Group is committed to achieving zero net emissions by 2050 and to halving its 2019 net emission levels by 2035.

These targets will be achieved across its entire global business, as part of a wholistic commitment to support the Sustainable Development Goals of the United Nations.

To help maximise the environmental sustainability of its flight operations, Etihad Airways has identified a range of opportunities and strategies to help mitigate the CO2 impacts of commercial aviation and to expedite reduction of its carbon emissions.

Some initiatives are not new. They build upon successful and relevant existing practices and tailor them to meet Etihad’s specific requirements for sustainable operations.

Others are not direct actions by the airline, but rather proposals for collaborative solutions in which industry partners and customers are urged to consider ways in which they can help address the impact of aviation on the environment, and where possible dovetail their proposals into airline activities.

Some initiatives are enablers of sustainable activity. Etihad is proud to have been the first airline to gain commercial finance conditional upon its compliance with all 17 Sustainable Development Goals of the United Nations.
This loan, which was secured to help fund an ‘eco property’ development in Abu Dhabi, was based on a package of sustainable practices, and verified by an external audit.

Additionally, while acknowledging initiatives such as the new European Commission’s ‘Green Deal’ on the environment, Etihad respectfully urges governments to actively and increasingly work with the entire aviation industry, not only to help expedite carbon neutrality, but also to assist airlines in meeting ambitious CO2 targets.

Following is an initial package of actions to which the Etihad Aviation Group has committed to help neutralise the impact of commercial aviation upon the global environment, and to spark fresh thinking in and around the aviation community of practical and immediate measures. This process will continue to evolve.

THE FLIGHT LIFE CYCLE

In 2020 Etihad Airways will commence a comprehensive review of all elements of a typical flight, in the air and on the ground, to identify ways in which to improve the ‘Flight Life Cycle’, including maintenance, pre-flight preparation, aircraft loading and unloading, on-board practices and supplies, the way each aircraft is flown, and arrival procedures. This study also will include all suppliers.

SUSTAINABLE ALTERNATIVE FUELS

Etihad Airways will continue to work with expert partners in the UAE and elsewhere to test and support development and provision of a diverse range of sustainable alternative fuels, with a view to regular future use of multiple sources and blends. A critical enabler of affordable alternative fuels will be financial support from governments to help expedite research and testing for the production and distribution of commercial quantities of alternative fuel variants.

INDUSTRY PARTNERSHIPS

Through various industry partnerships such as the Boeing EcoDemonstrator for the Boeing 787, the Etihad/Airbus A320 ‘testbed’ aircraft or the General Electric GE90 and GenX engine wash programs, Etihad will collaborate with like-minded partners to test, research and implement meaningful and measurable initiatives designed to reduce carbon emissions, both in the air and on the ground. Partners will be represented across the aviation and travel industries.
SUSTAINABLE FINANCE

Having become the first airline to secure commercial finance based upon verified compliance with the Sustainable Development Goals of the United Nations, in partnership with First Abu Dhabi Bank and Abu Dhabi Global Markets, Etihad Airways will explore and undertake fresh opportunities to raise funds through ‘sustainable finance’ programs.

CARBON OFFSETS

In compliance with its obligations under the CORSIA program, and to help meet its own ambitious targets for emissions reductions, Etihad Airways will develop and implement in 2020 a relevant and considered program of carbon offsets, both within its home market of the UAE and in selected markets which it serves.

In doing so, the airline will identify initiatives which add value to local markets, and which complement its direct initiatives to reduce carbon emissions across its global operations.

CHANGING MINDSETS

Over many years, community behaviours have been changed globally by conscience-based campaigns. ‘Unsafe or unsociable’ activities such as speeding, drink driving, and littering have been reduced, while desirable practices such as regular exercise, balanced diet and ‘sun-smart’ practices to avoid skin cancer have been encouraged.

Successful outcomes have been achieved as a direct result of voluntary participation.

If, for example, 10 million air passengers each reduced their luggage weight by a nominal one kilogram, the estimated 10 million kilogram (10,000 tonne) weight saving would equate to 17 fully-laden Airbus A380 super jumbos or 128 narrowbody Airbus A320s – and that would equate to just part of the Etihad operation.

The potential outcome of a similar action across the whole industry would be enormous if the industry globally were to encourage passenger participation in such initiatives.
SUMMARY

Etihad Airways is committed not only to the implementation of major and long-term sustainable practices and initiatives but also to identifying, developing and delivering actions, organically or in partnership, which lead to more immediate outcomes.

Although major aspirational measures have been highlighted, such as widespread use of sustainable alternative fuels or development and introduction of electric or super-aerodynamic aircraft, Etihad is principally focused on a strategy of continuous and collaborative development of practical, incremental and measurable initiatives to support larger actions, supported by a strong program of carbon offsetting.

The airline further supports and urges expeditious investments by governments in airspace reform, and facilitation of sustainable alternative fuels and other relevant research and development initiatives to help contain and reduce the growth of aviation’s emissions.

Such initiatives are imperative given the strong and rapid growth projections for air travel, the rising pressure on the airline industry to expedite its emissions reductions, and the potential of soaring passenger and freight volumes to overtake the remedial and preventive measures proposed for emissions mitigation.