ACI EUROPE
AIRPORTS COUNCIL INTERNATIONAL

SUSTAINABILITY STRATEGY FOR AIRPORTS

COVER / PHOTOS

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This strategy was prepared with the support of Quantis and Dr. Panagiotis Karamanos (Senior Advisor of A*irport Carbon Accreditation*).

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FOREWORD

by Olivier Jankovec, Director General of ACI EUROPE

The concept of sustainability refers to a balance between the social, economic and environmental impacts of an activity. As highlighted by the International Civil Aviation Organization (ICAO), *"the three pillars of sustainable development are especially relevant to the aviation sector that, by offering a safe and efficient means of mass transportation, is universally recognised as an essential component of the global economy and universal social progress."* [1]

Traditionally, airports' sustainability efforts have been focusing on minimising the environmental impacts of their operations. Of course, such perspective remains critical and requires continued efforts given the existential challenge of global warming in particular. However, there is an increasing awareness that a sole focus on environmental impacts is not sufficient anymore. The airport industry needs to address the three sustainability dimensions in a comprehensive manner.

As a matter of fact, economic disruption, rising inequality, depleted resources, changing consumer behaviour and new political dynamics mean that airport operators are facing a new imperative: putting the social purpose of their business at the core of their strategies and thus embracing a new Business-to-People paradigm. Consequently, airports need to both maximise the added value they provide to society – and articulate that value through enhanced engagement and communication with their communities and other stakeholders.

This is all the more important as airports are immovable facilities, embedded in their territories. They also represent a key interface between various aviation and non-aviation stakeholders - providing essential connectivity services to their local communities. This means that airports have a significant potential to lead transformational change beyond their fences, with the ability to become a role model within and outside the aviation industry. Ultimately, being a sustainable airport operator also means being resilient and contributing to more cohesive and resilient societies, making them better equipped to withstand major environmental, economic or social pressures in a fast changing world. This of course also implies preserving the foundations of a prosperous world for future generations.

As the trade body serving and leading European airports, ACI EUROPE has been at the forefront of sustainability developments. A case in point is *Airport Carbon Accreditation*[2], which was launched in 2009 as part of the European response to the climate change challenge, and which has now become

1. https://www.icao.int/environmental-protection/Documents/RIO+20_booklet.pdf
2. https://airportco2.org/

the global standard for carbon management in the airport industry. By developing this Sustainability Strategy, ACI EUROPE is reaffirming its leadership role in this area.

Our objective is to advance airport management based on the paradigm "Business-to-People" and future proof the airport industry (and beyond that, aviation and air connectivity) through the provision of guidance enabling airport operators to embed sustainability at the core of their business strategy.

Therefore, the ACI EUROPE Sustainability Strategy for Airports is built as an industry-wide framework and guidance, articulated around a shared vision of the sustainable airport of the future. This framework and guidance introduces a contemporary, balanced business approach that accounts for financial and non-financial impacts, suitably adapted to the priorities of our industry. As such, this strategy aims to provide a general direction and guidance to the sustainability efforts of European airport operators.

Consequently, it identifies recommended actions that can help airports become more sustainable and provides indicative metrics to help them measure their achievements and identify areas for further progress. Given the breadth of the topic and the diversity of Europe's airports, it does not provide an exhaustive nor prescriptive list of sustainability related activities and metrics that airports might wish to implement. For instance, while recognising that areas such as safety of operations and security are key components of airport sustainability, this strategy does not cover them, as they are highly regulated and addressed through existing international frameworks and standards. The strategy focuses on areas where ACI EUROPE sees significant potential for airports to be more ambitious and step up their efforts, in particular by implementing voluntary measures beyond regulatory requirements.

In closing, I would like to thank Athens International Airport, Brussels Airport, Geneva Airport, Heathrow Airport, Hermes Airports, Munich Airport, GESAC (Naples International Airport) and the Royal Schiphol Group for their invaluable support and extensive contributions to the development of this strategy.

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GLOBAL CONTEXT

The common language for sustainability is defined in the 17 Sustainable Development Goals (SDGs)[3] as adopted by the United Nations in 2015:

Along with the dissemination of the SDGs, governance has gained global acceptance as a major building block of sustainability. The adoption of materiality analysis for defining priorities, the use of strategy & reporting standards (such as the Global Reporting Initiative, GRI), the engagement of third-party assurance to add validity to disclosures and forward-looking planning for sustainability outcomes (in line with the six capitals of the International Integrated Reporting Council, IIRC[4]) are important components.

Within this framework, airports generally relate their sustainability actions with the SDGs and the GRI *Sustainability Reporting Guidelines and Airport Operators Sector Supplement (AOSS)*. Depending on their local specificities, airports are defining different priorities, however SDG 13 – Climate Action – is of undisputed importance worldwide. This is especially true since the adoption of the Paris Agreement (December 2015), which sets the objective of limiting global warming to 2° and ideally 1.5° C - to prevent catastrophic consequences for our planet and mankind. The urgency of responding to what is now being referred to as the climate emergency has been highlighted by the Special Report of the Intergovernmental Panel on Climate Change (IPCC), issued in October 2018. This report calls for "urgent & drastic action to limit global warming in line with the Paris Agreement", including "unprecedented & deep emissions reductions in all sectors" so that global emissions decline by -45% by 2030 and reach net zero by 2050. Subsequently, the European Commission (EC) has set out the EU's political ambition & vision for a net zero carbon economy by 2050 in its Communication "A Clean Planet for All" adopted in November 2018. This ambition places a particular responsibility on aviation, whose emissions in Europe have increased by 10% between 2014 and 2017, and are expected to grow by further 21% by 2040.[5]

3. https://www.un.org/sustainabledevelopment/sustainable-development-goals/
4. The six capitals are: financial, infrastructural, intellectual, human, social and natural. For more information, refer to https://integratedreporting.org/wp-content/uploads/2013/03/IR-Background-Paper-Capitals.pdf
5. EASA, EEA, EUROCONTROL: European Aviation Environmental Report 2019: https://ec.europa.eu/transport/sites/transport/files/2019-aviation-environmental-report.pdf

Aviation in Europe accounts for 28% of global passenger traffic.[6] It directly and indirectly provides more than 12 million jobs and makes a 700+ billion euros contribution to the economy. Direct employment with airport operators and at airport facilities (e.g., retailers, ground handlers, etc.) is around 1.7 million. Demand for air transport is growing and it is expected that the number of flights in Europe will increase by more than 50% in 2040 compared to 2017. EUROCONTROL (2018) estimates that in 2040 the annual number of flights will reach 16 million according to its most likely scenario.[7]

The question of how to manage this growth in a way that balances social, economic and environmental impacts is of key importance to the airport industry. In the context of wide societal transformations and changing values, failing to provide the necessary answers would put at risk not just the industry's license to grow but increasingly its license to keep operating.

6. Preliminary ACI traffic data for 2018.
7. EUROCONTROL Challenges of Growth (2018): https://www.eurocontrol.int/articles/challenges-growth

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HOW DOES THE SUSTAINABLE AIRPORT OF THE FUTURE LOOK LIKE?

A sustainability vision is essential as a basis for the formulation of a sustainability strategy. It outlines how a sustainable airport of the future could look like. ACI EUROPE sees its vision of a sustainable airport reflected in the following statement:

> **Every airport builds local and global partnerships to accelerate the journey towards fair, prosperous and environmentally responsible societies.**

"Every airport"

Reflects ACI EUROPE's commitment to engage each and every member airport in working towards this vision.

"builds local and global partnerships"

Refers to the airport's leadership role in building partnerships at the local level and being a key interface in the aviation business and the global connections it creates.

"to accelerate the journey"

Relates to the capacity of airports to mobilise and drive change for the better, by promoting sustainable connectivity, supporting education, fostering innovation, implementing new business models and diversifying services. Ultimately, this will also establish the airport as a role model in sustainability for other sectors.

"towards fair, prosperous and environmentally responsible societies"

Introduces three of the most important objectives and principles underlying the understanding of sustainability by the airport industry. More specifically:

➔ Contributing to Fair Societies

Being a sustainable airport means contributing to the universal principles of fair and caring societies. Consequently, the airport operator will strive to uphold the UN Guiding Principles on Business and Human Rights as part of its operations and exercise leverage to ensure adherence by business partners within its sphere of influence. It will actively fight against those who abuse of its services through human trafficking.

The airport operator will strive to enhance the quality of life of its surrounding communities, by ensuring that they benefit from a wide array of services as well as educational and employment opportunities. It will also aim at providing new types of value to local communities by contributing to social entrepreneurship that addresses social challenges. The burden arising from noise exposure of these communities will be reduced as much as possible and residents will contribute to the decision-making process to determine how to best achieve this, based on mutual trust and goodwill.

The airport operator will provide a safe, motivating, fulfilling and inclusive workplace that offers equal career development opportunities and appropriate compensation to all employees. The airport's workforce will reflect and promote the diversity of the communities it is embedded in.

All passengers and visitors of the airport will benefit from a safe, seamless and positive airport experience regardless of their physical and mental conditions. The airport operator will make use of new opportunities provided through digitalisation to enhance the quality of services at the airport.

➔ Contributing to Prosperous Societies

The airport will continue providing value-adding, diversified and essential air connectivity services and thus enabling societies worldwide to reap the economic, social and cultural benefits of aviation. The airport operator will strive at integrating the external costs of its activities as well as their non-financial value in its business and master planning. In particular, it will continue supporting the creation of jobs in its sphere of influence as well as implement, where relevant, appropriate reskilling and upskilling of (potential) staff to ensure their continued employability in spite of developments such as automation or Artificial Intelligence.

The airport operator will exercise responsible procurement practices for promoting corporate values of fairness, transparency and environmental responsibility across its supply chain. It will integrate local businesses as partners into its value creation, for instance by locally sourcing products and services.

The airport operator will work with the local hospitality sector to ensure its region is a sustainable destination for travellers. In particular, this implies promoting sustainable tourism products and services.

➔ Contributing to Environmentally Responsible Societies

The airport operator will respect the environment and preserve means of livelihood for present and future generations through thoughtful use of water and other natural resources, applying the principles of circular economy. By 2050 at the latest, airport operators will have a net zero carbon emissions for sources under their direct control. The airport will also cooperate with airlines and other partners to support them in reducing and ultimately eliminating their climate impact. These initiatives will also contribute to improving local air quality.

The airport operator will protect biodiversity on its site, in the region and globally, including the fight against illegal wildlife trafficking. It will also adapt its infrastructure and operations to the changing climate, so they can continue providing their essential social and economic services in the long-term.

Based on this vision, the present strategy relies on the following three key pillars of sustainability:

Environmental impacts

- Climate Change
- Local Air Quality
- Material Resources
- Water
- Biodiversity

Social impacts

- Human Rights, Values & Ethics
- Noise & Quality of Life of Local Communities
- Employee Experience
- Quality of Service

Economic impacts

- Balanced Business Model
- Economic Development & Employability
- Sustainable Supply Chain
- Sustainable Destination

3

HOW TO USE THE ACI EUROPE SUSTAINABILITY STRATEGY?

The ACI EUROPE Sustainability Strategy for Airports is based on a review of existing airport sustainability strategies, sustainability frameworks, relevant technological, economic and political developments as well as societal expectations. However, each airport is unique and operates within a specific context. These individual aspects cannot be captured by the present strategy.

As such, this strategy aims at providing a general direction and guidance to the sustainability efforts of European airports. It does not define any mandatory actions nor establish reporting requirements. It is therefore important that as a first step for the establishment of its individual sustainability strategy, each airport performs a materiality assessment. A materiality assessment (or analysis) is based on:

- Reviewing the different areas of environmental, social and economic impact of a company;
- Identifying the most significant ones based on the magnitude of the impact and the influence these topics have on decisions of key company stakeholders;
- Defining actions and allocating resources accordingly.

Airport operators are encouraged to refer to the 13 material issues identified in this strategy as a common baseline for identifying priorities and action planning. However, they should not limit their individual materiality analysis to these topics only and should assess whether additional topics should be included depending on their local conditions and priorities, such as cultural heritage. In a similar manner, airports may decide to include safety of operations and security as part of their individual sustainability strategies. For more guidance on how to carry out a materiality assessment, airports should refer to GRI.[8]

In a similar manner, for an airport operator to implement the most relevant projects to increase the added value it provides to society, it is important to identify and assess their impacts on non-financial capital. Based on the *Natural Capital Protocol and Social and Human Capital Protocol*, related guidance is outlined in Annex 1.

In addition, as a pre-requisite to the implementation of any sustainability related work, sound governance is required. This relies on:

- Defining clear roles and responsibilities;
- Establishing processes for the collection of relevant, consistent and high-quality data and the associated external assurance;
- Putting in place regular, transparent and holistic reporting - in line with globally-acknowledged reporting standards, such as those provided by GRI.

In this strategy, for each of the environmental, social and economic material issues, a sustainability pathway is proposed, structured around 4 steps: Launch, Development, Maturity and Leadership. They are defined as follows:

8. https://www.globalreporting.org/standards/media/1036/gri-101-foundation-2016.pdf

Launch

- The airport operator starts the analysis of its performance on a given topic. It usually means performing a first mapping and assessment of its activities and impacts in order to define a baseline.

Development

- The airport operator defines objectives to address its impacts, establishes a strategy and an action plan.
- The airport operator puts in place the governance required to implement the strategy.

Maturity

- The airport operator is able to track progress and report improvement. This is also usually the stage at which airports extend their sustainability efforts to actions and collaborations outside their direct operational boundaries.

Leadership

- The airport operator demonstrates high performance in a specific area by reaching its objectives and industry-wide targets where applicable.
- The airport operator serves as a role model to its partners in and outside the airport sector.

Key Performance Indicators (KPIs) relating to the implementation of processes, key baseline measurements and the achievement of performance objectives will help airports assess their progress throughout the pathway. In alignment with the UN SDG framework, performance objectives refer to year 2015 as the baseline and 2030 as the target year, unless specified otherwise in this strategy or justified as more relevant by an airport in its specific local context.

In addition, this strategy identifies two transversal enablers, supporting airports' efforts towards enhanced sustainability. They apply to most of the sustainability pathways and can be applied at any time during their sustainability journey:

- Innovation - highlighting innovative approaches in the different sustainability areas. Depending on the societal, economic and political environment that an airport operates in, different technologies and processes can be considered as innovative. Therefore where relevant, this strategy outlines a non-exhaustive range of potential innovative solutions or processes that airports might wish to use in their sustainability work.

- Partnerships – highlighting opportunities for airports to build on their critical role as the operational interface between stakeholders and the resulting potential to influence the sustainability performance of those stakeholders.

  Establishing partnerships is particularly important to address environmental impacts at airports because of strong interdependencies between the activities of different stakeholders on the airport site. To support this process, EUROCONTROL's Collaborative Environmental Management (CEM) specifications[9] provide a step-by-step and comprehensive guidance. ACI EUROPE has adopted CEM as a Recommended Practice and encourages airports to use it to support the implementation of partnerships as suggested for each environmental theme below.

Finally, where relevant, the association between the proposed sustainability pathways and metrics and the UN SDGs and/or GRI is highlighted in Annex 2 of this document. A non-exhaustive list of relevant reference material is presented in Annex 3.

In order to support airports in the use of this strategy, an Excel-based toolbox with the pathways and metrics presented in this document is provided. It allows for self-assessment of an airport's performance and helps identify areas for improvement taking into account the airport's individual materiality analysis. A dashboard provides the output of the evaluation in a user-friendly manner. The toolbox is a dynamic instrument that will be further developed and refined in line with potential future changes in sustainability standards and the needs of airports. It is for internal use by airport operators only and is not related to any reporting mechanisms.

The structure of this strategy is summarised in the table on the next page.

9. https://www.eurocontrol.int/node/6617

Impact	Material Issue	Link to SDGs	Pathways
Environmental	Climate Change	13 CLIMATE ACTION; 7 AFFORDABLE AND CLEAN ENERGY; 11 SUSTAINABLE CITIES AND COMMUNITIES	Launch; Development; Maturity; Leadership; KPIs
	Local Air Quality	3 GOOD HEALTH AND WELL-BEING; 11 SUSTAINABLE CITIES AND COMMUNITIES	
	Material Resources	12 RESPONSIBLE CONSUMPTION AND PRODUCTION	
	Water	6 CLEAN WATER AND SANITATION	
	Biodiversity	15 LIFE ON LAND	
Social	Human Rights, Values & Ethics	8 DECENT WORK AND ECONOMIC GROWTH; 16 PEACE, JUSTICE AND STRONG INSTITUTIONS	
	Noise & Quality of Life of Local Communities	3 GOOD HEALTH AND WELL-BEING; 11 SUSTAINABLE CITIES AND COMMUNITIES	
	Employee Experience	8 DECENT WORK AND ECONOMIC GROWTH; 5 GENDER EQUALITY	
	Quality of Service	9 INDUSTRY, INNOVATION AND INFRASTRUCTURE	
Economic	Balanced Business Model	8 DECENT WORK AND ECONOMIC GROWTH; 17 PARTNERSHIPS FOR THE GOALS	Enablers: • Innovation • Partnerships
	Economic Development & Employability	8 DECENT WORK AND ECONOMIC GROWTH; 4 QUALITY EDUCATION	
	Sustainable Supply Chain	12 RESPONSIBLE CONSUMPTION AND PRODUCTION	
	Sustainable Destination	8 DECENT WORK AND ECONOMIC GROWTH; 11 SUSTAINABLE CITIES AND COMMUNITIES	

4

SUSTAINABILITY PATHWAYS

4.1. Environmental Impacts: Contributing to Environmentally Responsible Societies

The selection of the material issues considered under this pillar is based on the concept of Planetary Boundaries, which was developed in 2009 by a network of internationally recognised scientists led by the Stockholm Resilience Centre.[10]

This holistic approach aims to ensure a safe operating space for humanity to thrive by defining a science-based framework with quantitative thresholds. The assessment of these boundaries revealed that our current social system is not sustainable. The World Economic Forum (WEF), in its Top 10 Risks for the World, ranks three climate change related risks at the top. Three other risks in the Top 10 relate to ecosystems and water.[11]

➔ Climate Change

Climate change is the biggest risk facing our world and the most recognised environmental issue, especially for the airport and broader aviation sector. Two approaches are required to respond to climate change:

- Mitigation: Reducing emissions of and stabilising the levels of heat-trapping greenhouse gases in the atmosphere.
- Adaptation: Adapting to the climate change already occurring on our planet.

For each of these approaches, a separate pathway is proposed below.

Climate Change Mitigation

The sustainability pathway reflects a Resolution issued by ACI EUROPE on 26 June 2019 in response to the above mentioned IPCC Special Report and other developments, through which European airports:

- Call on the aviation industry, ICAO and governments to work towards net zero emissions aviation,
- Commit to reach net zero carbon emissions for operations under airport operators' direct control (Scope 1 and 2) by 2050,
- Call on governments to accelerate, where relevant, the transition towards a clean energy system as a key enabler for airports to reach net zero emissions.

It is also based on the best practices implemented through the *Airport Carbon Accreditation* programme.

The innovation and partnership enablers focus on engagement with stakeholders to contribute to the decarbonisation of the aviation sector as a whole. This includes in particular initiatives related to Sustainable Aviation Fuels (SAF) and electrification of aircraft operations.

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10. https://www.stockholmresilience.org/research/planetary-boundaries/planetary-boundaries/about-the-research/the-nine-planetary-boundaries.html
11. https://www.weforum.org/agenda/2019/01/these-are-the-biggest-risks-facing-our-world-in-2019

Recommended Actions		Indicative KPIs
Launch	• Measure Scope 1 and 2 emissions. • Formulate high-level commitment to emissions reductions.	Absolute CO_2 emissions (Scope 1, 2 and 3) per passenger or traffic unit. Energy intensity of the airport operator (consumption per traffic unit or m^2). % of zero emissions energy in airport operator's consumption. *Airport Carbon Accreditation* Level.
Development	• Define carbon management plan. • Identify emissions reduction targets. • Demonstrate emissions reductions as a result of action plan implementation.	
Maturity	• Add Scope 3 emissions to your carbon footprint. • Involve third parties in carbon management efforts. • Reach carbon neutrality under *Airport Carbon Accreditation*.	
Leadership	• Reach net zero emissions for Scope 1 and 2. • Implement initiatives to contribute to quantified emissions reductions from aircraft operations.	

Enablers	Indicative Initiatives
Innovation	• Generate energy from renewable sources on-site (e.g. solar, wind, geothermal). • Design energy-positive buildings. • Explore use of excess green electricity generated on site for production of hydrogen/synthetic fuels. • Perform feasibility studies to identify implications of Sustainable Aviation Fuel (SAF) provision to airlines and electrification. • Anticipate potentially required adjustments in infrastructure and services to accommodate the above. • Explore availability of local feedstock for SAF production. • Provide incentives for the use of SAF and electrification.
Partnerships	• Support other airports in defining and implementing their decarbonisation pathways. • Cooperate with industry partners – especially airlines, ANSPs and manufacturers, as well as governments, to identify pathways towards net zero emissions aviation. • Engage with governments to support clean energy transition. • Support research activities on radically new aircraft technologies, new types of jet fuel (e.g. synthetic fuels) and operational improvements.

Climate Change Adaptation

Airports are already impacted by extreme weather events, whose frequency is expected to increase in the coming years due to the changing climate. In addition, changes to average temperatures or sea level rise as well as changing wind patterns are likely to affect a growing number of airports in the future. Such impacts are not only detrimental to the airport and its passengers but have knock-on effects on local communities (e.g. flooding blocking the road transport network) and can harm the airport's role as key platform to support disaster relief.

The sustainability pathway therefore encourages airports to take action to adapt their infrastructure and operations to the changing climate, performing climate related risk assessment and mitigation, putting in place measures to ensure business continuity, especially in the case of a crisis situation, and ensuring mechanisms for a quick recovery after an extreme event. The innovation enabler suggests ways to implement adaptation measures with environmental co-benefits, while the partnership enabler stresses the importance of effective communication for crisis response.

Recommended Actions		Indicative KPIs
Launch	• Identify potential changes in the climate in the airport's location. • Identify and assess risks arising from these changes for the airport's infrastructure and operations.	Existence of a full (approved, funded and executable) climate adaptation plan. % of actions from adaptation plan implemented.
Development	• Identify relevant climate adaptation measures, with specific focus on airport master planning, business continuity during extreme weather events and emergency planning. • Establish adaptation plan.	
Maturity	• Implement adaptation plan. • Engage with third parties to enhance their climate resilience.	
Leadership	• Track the evolution of risk levels. • Share lessons learned with relevant stakeholders from local communities to support their climate resilience.	

Enablers	Indicative Initiatives
Innovation	• Explore synergies between adaptation and mitigation: consider mitigation when implementing adaptation measures (e.g. use the opportunity of designing more climate-resilient infrastructure to implement energy efficient design). • Consider implementation of green infrastructure (e.g. optimise use of green areas for storm-water retention).
Partnerships	• Establish effective communication channels with airport partners and local communities to ensure effective and rapid crisis response.

➔ Local Air Quality

Up to a third of Europeans living in cities are exposed to air pollutants levels exceeding EU air quality standards. Among the harmful pollutants, NO_x, PM_{10} and $PM_{2.5}$ are considered particularly relevant to air quality at and near airports, principally because amongst other sources, they are associated with airport-related activities.[12] Indeed, NO_x and PM pollution arises from various airport and airline related sources - including ground equipment, power generation on-site, emergency generators, road traffic and aircraft.

The sustainability pathway focuses on measuring the airports' contribution to the pollutant concentrations in their vicinity and designing mitigation actions accordingly. The innovation and partnership enablers encourage airports to extend the coverage of their local air quality management and outline possible actions to support emissions reductions by third parties. It must be noted that many of the measures relevant to CO_2 emissions reductions also produce co-benefits in terms of reducing pollutant emissions, and vice versa.

Recommended Actions		Indicative KPIs
Launch	• Map emissions sources at the airport and in its vicinity. • Calculate the associated emissions. • Implement local air quality monitoring.	Main pollutant emissions (e.g. NO_x, PM_{10}, $PM_{2.5}$) per passenger or traffic unit. % of low emissions GSE and vehicles in full fleet at the airport. Provision of PCA and/ or electric charging infrastructure to aircraft and ground vehicles (for staff and/ or passengers). % of airport users accessing the airport by public transport. Number of local air quality threshold exceedances (as per applicable regulation).
Development	• Perform dispersion modelling. • Assess contribution to local pollutant concentrations. • Define mitigation plan.	
Maturity	• Implement emissions reduction measures. • Track progress. • Publicly report on progress in a transparent manner.	
Leadership	• Reach emissions reduction targets. • Achieve zero emissions ground vehicle fleet operating at the airport and minimal emissions from other sources.	

12. https://www.sustainableaviation.co.uk/wp-content/uploads/2018/06/SA-A4_UK-Aviation-and-Air-Quality_Report1.pdf

Enablers	Indicative Initiatives
Innovation	• Consider measures identified under the Climate Change section. • Implement emissions-related modulation of airport charges to promote use of cleaner aircraft. • Extend the range of air pollutants monitored and mitigated. • Implement biomonitoring: use biological indicators, such as concentration of pollutants in plants, to assess air quality.
Partnerships	• Engage with ground handlers to promote use of low/zero emissions vehicles and other equipment. • Engage with airlines to limit use of Auxiliary Power Units (APUs) and introduce other restrictions on aircraft ground operations where relevant. • Cooperate with authorities and public transport companies to increase the offer of clean public transportation to the airport. • Cooperate with research community to work towards new technologies, minimising or eliminating air pollutant emissions.

→ Material Resources

Limited material resources coupled with growing consumption patterns are a complex challenge, with both local and global implications. According to the European Commission, in Europe each person uses 16 tonnes of material per year, of which 6 tonnes are waste. The continuously growing demand for materials and energy as well as a growing world population surpasses the planet's capacity to provide these resources. The EU is at the forefront of addressing this challenge, having launched in 2018 the Circular Economy Package including a number of initiatives on waste, plastics, strategies, and monitoring. Airports are part of the many stakeholders which have a role to play - especially regarding waste management initiatives and implementation of circular economy principles.

Consequently, the sustainability pathway focuses on the assessment of waste streams, involvement of key stakeholders, strategy formulation, implementation of long-term measures and incorporation of circular economy principles in infrastructure projects.

The innovation enabler further explores opportunities related to circular economy - aiming at retaining *"as much value as possible from resources, products, parts and materials to create a system that allows for long life, optimal reuse, refurbishment, remanufacturing and recycling."* [13] It thus offers the opportunity to trial new business models, e.g., product-as-a-service. This implies dissociating the service provided by a product from the product ownership, in which the customer (airport) only pays for the service (e.g., light) and not the product itself (e.g., light bulb). Such an approach incentivises the owner to optimise the product lifetime and associated use of resources. In a context where many airports are looking at refurbishing and/or expanding their infrastructure, it is particularly important to consider how related projects can rely on fully recyclable or standardised components, which can be reused in other infrastructure at a later stage.

13. http://docs.wbcsd.org/2017/06/CEO_Guide_to_CE.pdf

Recommended Actions		Indicative KPIs
Launch	• Categorise and quantify waste streams and identify relevant stakeholders.	Waste production per source/ type/passenger. Existence of reduction targets on waste. Single-use plastics ban. At least 50% reduction of food waste per passenger.
Development	• Develop a comprehensive waste management strategy in cooperation with the stakeholders to minimise waste generation, optimise waste treatment and consider waste recovery.	
Maturity	• Implement waste management strategy and strengthen partnerships. • Extend strategy to cover optimised use of material resources, in particular through circular economy principles.	
Leadership	• Ban single-use plastics within the airport perimeter. • Achieve an at least 50% reduction in food waste per passenger. • Incorporate circular economy principles in infrastructure projects.	

Enablers	Indicative Initiatives
Innovation	• Undertake Life Cycle Analysis of material and products used by the airport, including in buildings. • Explore new product designs. • Consider new business models (e.g. shared resources, product as a service). • Improve supply chains (e.g. new technologies, resource recovery). • Consider the use of waste for energy generation (e.g. biomass). • Consider food waste composting to produce fertilisers for use by and beyond the airport. • Use waste disposal providers with shortest routes to and from the airport, as well with the most efficient frequency and technology of disposal to reduce amount of journeys. • Explore synergies between digitalisation and circular economy, for instance by optimising the automatic scheduling of maintenance/repairs, maximising the lifetime of equipment.
Partnerships	• Cooperate with airlines, handlers, and other airport partners to minimise waste generation and ensure proper waste management. • Engage local and national authorities to plan and implement waste management initiatives in line with airport requirements. • Collaborate with catering companies especially regarding food waste and packaging. • Liaise with alternative waste management providers (e.g. food waste recovering institutions, local charities for material reuse).

➔ Water

Water covers two aspects of relevance to airports:

- Quality and quantity of potable water used by employees and passengers.
- Pollution levels of local water basins, which might be impacted by wastewater, in particular from de-icing operations.

The sustainability pathway focuses on water consumption reduction and water quality improvement, target setting, development of KPIs and guidance on the steps to reach a credible and robust water management strategy to ensure the long-term sustainability of water resources.
The innovation and partnership enablers focus on setting contextual water targets and developing cooperation with local communities, airlines and other key stakeholders. Contextual water targets take into consideration the level of water that is available for airports to consume while enabling the entire ecosystem to have access to a fair share of water. The UN Global Compact CEO Water Mandate or the European Water Stewardship provide additional guidance.[14]

Recommended Actions		Indicative KPIs
Launch	• Establish water management policy. • Map types and quantities of water used as well as the impacts of airport operations on local water basins (e.g. due to de-icing) on water basins. • Assess impacts and identify risks.	Presence of a water management policy. Water consumption by source and use. Total water discharge by quality. % water recycled, reused, or reduced.
Development	• Develop comprehensive water stewardship plan to address risks, including improvement targets.	
Maturity	• Implement water stewardship plan. • Track target achievement.	
Leadership	• Reach targets. • Engage with stakeholders to share best practices and collectively improve water management in the region.	

Enablers	Indicative Initiatives

Innovation	• Set contextual water targets, enhancing the development of solutions while integrating the local context. Airports should consider two key dimensions:
	  • Water share (Assess the water amount airports should consume taking into consideration the needs of other stakeholders using the same watershed as well as the environment) and
	  • Watershed conditions (the capacity of the basin's renewable supply of water and ability to assimilate pollutants).

Partnerships	• Engage local authorities to increase awareness, understand challenges and plan management initiatives. • Collaborate with maintenance services to minimise water consumption and ensure proper/minimum use of chemical agents. • Cooperate with airlines to minimise water consumption. • Liaise with research centres for water quality monitoring, modelling, assessments, and management initiatives.

14. https://ews.info, https://ceowatermandate.org

➔ Biodiversity

Biodiversity is under serious threat as a result of human activities. Pollution, climate change, deforestation and habitat loss, over-exploitation and invasive species are some of the key risks. According to the United Nations Development Program, 13 million hectares of forests are lost every year, desertification affects almost 4 billion hectares, while around 7,000 species of animals and plants are illegally traded.

Biodiversity at the local level is affected by airports as they often occupy large open areas near natural ecosystems. Wildlife trafficking is also a relevant global topic as airports have been used as hubs to perform this illegal activity.

In order to reverse these trends and protect, restore, and promote sustainable ecosystems, airports should integrate biodiversity impact mitigation in their sustainability strategy.
Protecting biodiversity at or near airports can take many forms, including habitat management studies, establishment of nature conservation funds, reforestation, recording of species, as well as measures to fight wildlife trafficking. In the context of infrastructure development projects, airports should compensate any biodiversity losses - for instance by restoring lost habitats in a different area, and ideally aim for a net gain in biodiversity.

The sustainability pathway focuses on the monitoring of biodiversity at and near the airport, implementation of protection measures, providing training and raising awareness of employees and passengers on wildlife trafficking as well as investing in biodiversity protection partnerships and initiatives. Additional information and guidance on these areas can be obtained from the Ecosystem Services Partnership (ESP), the Sub-Global Assessment (SGA) Network or the Intergovernmental Panel on Biodiversity and Ecosystem Services (IPBES).[15]

Recommended Actions		Indicative KPIs
Launch	• Assess status of biodiversity at and near the airport. • Identify local partners and areas suitable to conduct biodiversity protection projects. • Raise awareness of airport employees on wildlife trafficking.	m^2 of restoration / biodiversity projects. Biodiversity net gain of protection projects. % relevant airport staff trained in detecting wildlife trafficking.
Development	• Implement biodiversity protection initiatives with relevant partners. • Deliver training and take actions to address wildlife trafficking.	
Maturity	• Monitor status of biodiversity following implementation of protection measures. • Raise awareness and educate passengers on wildlife trafficking and endangered species.	
Leadership	• Invest in biodiversity partnerships and initiatives further outside the airport's vicinity, focusing on highly sensitive areas and species habitats. • Achieve biodiversity net gain. • Raise awareness and educate local communities and passengers on biodiversity at and around the airport.	

15. https://www.es-partnership.org/ , http://www.ecosystemassessments.net/, https://www.ipbes.net/

Enablers	Indicative Initiatives
Innovation	• Adapt mowing management to minimise impacts on biodiversity. • Replace herbicides. • Implement projects to actively support biodiversity at and around the airport (e.g. beehives). • Implement non-lethal wildlife control techniques (e.g. establish remote, grassy meadow areas or ponds to attract birds and thus prevent collision with aircraft).
Partnerships	• Engage local and national authorities to plan and implement biodiversity and wildlife protection initiatives. • Collaborate with biodiversity institutions and experts on developing relevant studies and measures. • Liaise with conservation organisations and volunteers to implement the measures. • Sign United for Wildlife Buckingham Palace Declaration, committing to fight against illegal wildlife trafficking through enhanced sharing of relevant information within the transport sector and with national authorities.

4.2. Social Impacts: Contributing to Fair Societies

To ensure fairness, the respect of human rights and basic ethical principles, values and standards is a key requirement for each company and as such the foundation of the proposed social sustainability pillar. The three other themes considered are articulated around the main airport stakeholders: local communities, employees and passengers/visitors to the airport.

➔ Human Rights, Values and Ethics

In 2011, the United Nations published the *Guiding Principles on Business and Human Rights*[16]. Airport operators should apply these principles, according to which every company has to ensure prevention, due diligence and remediation of violations of human rights, including labour rights. Airport operators should also respect fundamental values and business ethics principles of integrity, trust and anti-corruption, for example by establishing a Code of Conduct. By doing so, and given their role, standing and visibility, airports have the opportunity to influence the ethical climate far beyond their operational boundaries, in particular in their region.

In the airport context, one specific form of human rights violation requires particular attention: human trafficking, which consists of recruiting, transporting, harbouring and/or exercising control, direction or influence over the movements of persons in order to exploit them. While the formal responsibility of fighting this crime lies with law enforcement, as airports are a point of transit for human traffickers, they can take relevant supportive actions, which are outlined in the *ACI Handbook on Combatting Human Trafficking*.[17]

The sustainability pathway focuses on the implementation of internal policies and procedures, awareness-raising and education of the airport staff and where relevant, engagement with passengers and business partners. The innovation and partnership enablers emphasise technology use and cooperation between key stakeholders.

Recommended Actions		Indicative KPIs
Launch	• Define policy and processes in accordance with the UN Guiding Principles on Business and Human Rights as well as fundamental values and business ethics such as anti-corruption, e.g. through a Code of Conduct.	Presence of human rights & business ethics policies and processes. Consideration of human rights & business ethics in airport's procurement process. % relevant airport staff trained in detecting human trafficking.
Development	• Monitor adherence to internal policy and processes. • Where relevant, identify need for awareness raising/ training and/or improvement. • Map and assess human trafficking related risks (e.g. identify high-risk air routes, schedules, etc.).	
Maturity	• Implement changes to internal policy and processes where relevant. • Train staff and raise passenger awareness on prevention of human trafficking.	
Leadership	• Promote adherence to Human Rights, values & business ethics principles amongst the airport's business partners.	

16. http://www.ohchr.org/Documents/Publications/GuidingPrinciplesBusinessHR_EN.pdf
17. https://store.aci.aero/product/combatting-human-trafficking-handbook-2019/

Enablers	Indicative Initiatives
Innovation	• Use technology means to engage internal/external stakeholders, increase awareness, and address compliance gaps. • Use airport terminal advertising facilities to promote anti-trafficking messages and create awareness for the public. Use technology for recognising indications of human trafficking (e.g. analysis of suspicious passenger flows).
Partnerships	• Engage with law-enforcement authorities, airport sub-contractors working in the terminal, airlines, NGOs and local communities.

➔ Noise and Quality of Life of Local Communities

Airports are deeply embedded in the region they are located in and as such have strong ties with the local communities in their vicinity. To be a responsible neighbour, airports should strive to minimise the negative impacts their operations might have on these communities, in particular noise, while also maximising the benefits they can bring to them by initiating dedicated social entrepreneurship projects, i.e. projects fostering the social and human capital of communities and consequently their quality of life,[18] without following strict financial performance criteria. Such projects can have a focus on education, employment, culture and identity, sports and health. Creating opportunities for communities to contribute to related decision-making is particularly important.

To assess the value of associated projects, airports are encouraged to refer to Annex 1 of this document.

Quality of Life – Noise Management

Noise exposure around airports can have negative impacts on the health and well-being of residents. These impacts depend on the physical levels of noise produced but it is also increasingly recognised that non-acoustic factors play a role, especially with regards to annoyance. They cover, amongst others, subjective variables related to people's attitudes and perceptions.

Therefore, the degree to which aircraft noise is a material issue is airport-specific, consequently no one solution will be appropriate for all airports. ICAO has established a comprehensive approach to managing aircraft noise known as the Balanced Approach that requires the involvement of all stakeholders, including airport operators. At the core of the sustainability pathway, informing and engaging local communities on the issue of aircraft noise is critical to ensure their needs and preferences are taken into account.

18. For more information on the definition of quality of Life and the associated indicators, please refer to the well-being framework defined by the Organisation for Economic Cooperation and Development (OECD): https://www.oecd.org/statistics/measuring-well-being-and-progress.htm

Recommended Actions		Indicative KPIs
Launch	• Implement noise monitoring. • Establish and assess noise footprint. • Define mechanism to receive and address noise complaints.	Number of people exposed to excessive noise levels as per relevant regulation. % change in the number of people exposed. % change in the number of people complaining about noise. % ICAO Chapter 14 aircraft serving the airport.
Development	• Engage (in a structured way) with local communities on noise issues. • Set mitigation targets and identify the most relevant and effective mitigation options.	
Maturity	• Implement agreed mitigation measures and track progress. • Publicly report on progress in a transparent manner.	
Leadership	• Reach mitigation targets. • Identify best practices potentially applicable to other airports.	

Enablers	Indicative Initiatives
Innovation	• Implement noise-related modulation of airport charges to promote use of quieter aircraft. • Provide for noise respite (predictable relief from noise). • Diversify format and channels of communication on noise. • Explore new building design and landscaping for noise abatement. • Contribute to the development and implementation of new operational measures.
Partnerships	• Engage airlines and ANSPs in noise mitigation efforts. • Ensure regularity and transparency in engagement with local communities. • Allow for communities' contribution to decision-making on noise mitigation. • Engage with local authorities to avoid land use incompatible with airport operations. • Cooperate with research community to enhance understanding of all factors influencing the perception of noise and its health impacts.

Quality of Life – Community Engagement

Airports usually approach community engagement from a noise management perspective. Whilst this is an important factor to consider, a more proactive and comprehensive approach, addressing needs and aspirations of local communities independently from noise exposure, is proposed in a separate sustainability pathway. Engagement with stakeholders is key at all the stages of the pathway, to understand the societal challenges and needs that an airport could decide to focus on to increase value, but also to define a relevant action plan and assess the results.

The sustainability pathway focuses on identifying community needs, developing social entrepreneurship initiatives and revising or extending them based on their results.

Recommended Actions		Indicative KPIs
Launch	• Engage local communities to collect aspirations and expectations on social areas in which airport could invest (including through sponsorship).	Number of local community beneficiaries from social entrepreneurship projects. % of investment in local community projects on total turnaround. Presence of non-financial impact assessment for projects.
Development	• Define and deploy a social entrepreneurship project or set of projects.	
Maturity	• Measure and assess outcomes of the implemented project(s). • Communicate the results to local communities. • Jointly with community stakeholders, identify points for improvement.	
Leadership	• Revise and/or extend social entrepreneurship portfolio as per community needs. • Become a significant force for social progress and community cohesion.	

Enablers	Indicative Initiatives
Innovation	• Offer training and skills enhancement, apprenticeships, to local communities. • Use the airport space for community events and awareness raising on sustainability. • Support urban design offering green spaces and recreational areas.
Partnerships	• Before launching a social entrepreneurship project, reach out to stakeholders to prevent overlaps and identify potential synergies. • Establish partnerships with local communities for renewable energy generation. • Invest in transport infrastructure development beyond the airport-city connection.

→ Employee Experience

A Gallup Poll conducted between 2014 and 2016 across 150 countries and 1,000 individuals per country revealed that the percentage of adults who work full time for an employer and are engaged at work (highly involved and enthusiastic about their work) was just 15%. This points to the need to proactively enhance employee well-being and satisfaction. In turn, it can lead among other benefits to talent attraction, higher service quality, operational excellence, higher retention levels, lower absenteeism, and greater productivity.

A case in point is diversity. For instance, while 41% of aviation's workforce in Europe are female, a much lower share of it is working in technical or senior management positions. Increasing gender equality in the industry is a matter of fairness but it is also essential to attract an increasing number of skilled professionals that a growing industry needs. Furthermore, a recent study by the International Labour Organization (ILO) concludes that a gender-diverse workforce contributes to an average profit increase

of 10% to 15%.[19] More generally, it is important to ensure that people with diverse backgrounds (e.g. cultural, socio-economic, age, health conditions) have equal employment and career development opportunities.

Furthermore, airport operators should provide a safe workplace and relevant training as well as adequate measures for improving health and safety, including aspects related to the quality of the workplace, such as indoor air quality and healthy food options. Along the same lines, it is necessary to ensure labour representation and labour rights related grievance and remediation mechanisms in accordance to regulatory requirements.

Another aspect to bear in mind is that young professionals are increasingly seeing societal purpose-orientation of companies as a key factor in their choice of employer. Putting sustainability at the core of an airport's business is thus becoming more and more important to attract and retain talent. Overall, airports should provide a motivating, fulfilling and inclusive workplace.

The sustainability pathway converges with standard practices in most other industries, with objectives and KPIs mostly aligned with the Global Reporting Initiative, focusing on measuring the level of engagement of employees (e.g. satisfaction survey). Many industries, including the airline industry, are using Net Promoter Score (NPS) (*Would you recommend the airport to a friend looking for a job?*), as they find it correlated to other dimensions of employee satisfaction. The innovation and partnership enablers focus on deploying cultural and managerial transformation programmes and working with employee well-being specialists.

Recommended Actions		Indicative KPIs
Launch	• Carry out a survey to establish the baseline of employee satisfaction. • Measure representation of people with diverse backgrounds at different levels of the organisation and assess results.	Satisfaction rate, e.g. Net Promoter Score ("Would you recommend the airport to a friend looking for a job?"). Lost-time injury frequency rate (e.g. per 1,000,000 hours worked). Training hours per employee. % of employees with diverse backgrounds.[20]
Development	• Identify areas for improvement, e.g. in the mode of management, health and safety, diversity, inclusion of people with disabilities. • Establish action plan.	
Maturity	• Implement action plan. • Track employee satisfaction performance and diversity overtime.	
Leadership	• Identify and focus on employee satisfaction and diversity promotion measures and quantified improvements.	

19. ILO, The business case for change, https://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/---publ/documents/publication/wcms_700953.pdf , page 15
20. This covers several KPIs - per type of diverse background. This strategy recommends as a minimum the use of a gender-related KPI and encourages airports to define other categories depending on their local circumstances and regulation.

Enablers	Indicative Initiatives
Innovation	• Deploy cultural and managerial transformation programmes, including top-down but also employee-based and cross-functional process redesign, workshops, organisational reviews, etc. • Explore employee compensation schemes based on sustainability-related performance. • Offer child care facilities to airport employees. • Encourage physical activity of employees, e.g. by providing free sports facilities or reimbursing costs of external sports activities.
Partnerships	• Collaborate with employee well-being specialists, including occupational physicians and psychologists, to improve employee experience and develop specific initiatives. • Cooperate with management training agencies to ensure adoption of best practices in line with airport needs. • Liaise with technology providers to explore real-time employee satisfaction monitoring.

➔ Quality of Service

Passenger expectations are increasing as they wish to experience an enjoyable and smooth trip. Understanding the needs of passengers and other visitors to the airport as well as providing high-quality services is an important component of successful airport operations and management. A number of stakeholders, including passengers, regulators, and non-government organisations, monitor the service quality of airports and the relevant indicators through various initiatives. An example is the Airport Service Quality (ASQ) programme by ACI World[21], which independently measures passenger satisfaction across a number of key performance indicators. More than 300 airports are part of ASQ, and as a result in 2018 more than half of the world's 8.3 billion travellers passed through an ASQ airport.

The sustainability pathway focuses on service quality measurements that provide a standardised and detailed view of service areas needing improvement, as well as benchmarks for a comparison with peers. Airports are encouraged to consider measurement programmes that break down the different steps of passenger experience (access, welcome, security check, shopping, restaurants, boarding, etc.), providing a high level of granularity and thus allowing to identify specific areas of high performance or concern and invest in service quality improvement in a targeted manner. In addition, particular attention should be paid to ensuring a positive airport experience for persons with reduced mobility or disabilities.

The innovation and partnership enablers are related to digital solutions to enhance passenger experience and cooperation with key stakeholders to invest in service improvement. Of particular interest is also the concept of "sustainability-as-a-service": at the crossroads between service quality and sustainability, it can involve projects such as the development of sharing apps to reduce food waste in cooperation with airport restaurants, awareness-raising on sustainability through displays/announcements at the airport terminal or the provision of a platform through which passengers can offset emissions from their flights.

21. https://aci.aero/customer-experience-asq/

Recommended Actions		Indicative KPIs
Launch	• Measure baseline passenger experience (for instance by participating in the ASQ programme).	Different levels of achievement in service quality measurement programme. Improvement of service quality score with regards to investments made (3 years rolling average). Passenger accidents within the airport's control per 1,000,000 passengers.
Development	• Manage passenger experience performance through survey analysis, identification of trends and development of improvement actions.	
Maturity	• Improve service quality through targeted investments.	
Leadership	• Achieve service excellence based on the adoption of best practices. • Implement "sustainability-as-a-service".	

Enablers	Indicative Initiatives

Innovation	• Test and develop with business partners digital solutions which improve passenger experience and "seamless travel" including:
	  • Big data and real-time analytics
	  • Development of web applications
	  • Promotion of robotics and artificial intelligence
	  • Deployment of sensors and digital tags
	• Extensive use of biometrics.

Partnerships	• Collaborate with airlines, handlers, security providers, commercial establishments, food and beverage, IT and other business partners to analyse service quality survey results and invest in targeted service improvements.

4.3. Economic Impacts: Contributing to Prosperous Societies

➔ Balanced Business Model

In order to be purpose-oriented businesses, airports should strive to extend the way they approach value creation and to establish a balanced business model – i.e. aiming at an optimal balance between economic, social and environmental impacts of their activities.[22] To achieve it, the internal and external costs of their activities as well as the social and environmental value created need to be assessed and reflected in strategic decision-making. Integrated Performance Management provides for a framework to support this process; it refers to organisational performance management which integrates environmental and social considerations in the development of a business strategy, supported by a set of KPIs.[23]

Airport operators will continue to serve their core function of providing aeronautical services – landing, parking, embarking and disembarking of passengers, terminals and baggage halls, etc. In this area, airports can seek to apply a pricing strategy that encourages quieter and cleaner operation of aircraft. This type of modulation of charges can happen at many airports, but not all, as small airports will continue to rely on a single bundled charge for activities. Similarly, airports should strive to ensure that they are covering the full costs of providing aeronautical services through aeronautical charges. This cost-revenue balance ensures that the pricing signal is appropriate for the level of demand.

Airport operators also have a commercial interest to develop their non-aeronautical businesses, such as retail concessions, food & beverage concessions, advertising, mobility concessions and more. In these areas, the airport can seek to increase revenue from sustainability-related services (e.g. retail offering organic/Fairtrade products, sports facilities, educational services, cultural events), potentially also attracting non-passenger visitors and thus gaining a competitive advantage.

The sustainability pathway focuses on launching a comprehensive assessment of the airport impacts on non-financial capital and identifying ways to optimise them. Ultimately, such an approach helps the airport integrate actions relating to the social and environmental pillars into the company strategy and thus address them in a holistic and systematic manner rather than as an add-on to the regular business activity.

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22. For more information on the definition of a business model, see for instance Business Model Background Paper for Integrated Reporting: https://integratedreporting.org/wp-content/uploads/2013/03/Business_Model.pdf
23. For more information, see for instance WBCSD, Accenture: Integrated Performance Management: https://www.wbcsd.org/contentwbc/download/2926/37488

Recommended Actions		Indicative KPIs
Launch	• Commit to sustainability as business objective. • Map and assess the social, human and environmental impacts of airport activities, covering positive impacts (value created) and negative impacts (external costs); (refer to Annex 1 for more guidance).	% of revenues generated from sustainability-related services. % of aeronautical revenue earned from charges with an environmental modulation. % of revenue streams reflecting the integration of externalities. Number of sustainability-related KPIs in the airports performance management plan. % of non-passenger visitors to the airport.
Development	• Identify potential changes in the airport's business model to enhance value and reduce external costs. • Establish implementation strategy if relevant changes identified.	
Maturity	• Implement strategy. • Measure and assess outcomes and the associated impacts. • Identify potential additional, sustainability-related services.	
Leadership	• Systematically integrate full internal and external costs as well as value created in strategic decision-making and master planning. • Generate increasing revenue share from sustainability-related services.	

Enablers	Indicative Initiatives
Innovation	• Become an incubator for start-ups: provide start-ups with work space, development and access, while receiving a negotiable revenue share from the start-up's product. • Become laboratory/live testing environment for innovative ideas serving sustainability purposes, e.g. in the areas of new propulsion systems for aircraft, seamless door-to-door travel. • Promote the airport as a multimodal service centre.
Partnerships	• Engage with local authorities and business representatives to ensure alignment between the airport business plan and the overall vision for its region's development. • Partner with universities/research organisations for activities related to innovation support. • Support further development of methodologies on valuation of non-financial capital.

➔ Economic Development and Employability

Airports are engines of economic development for their regions and countries. According to a 2015 study by InterVISTAS[24], European airport contribute in total to the employment of 12.3 million people. These effects occur at four levels:

- **Direct employment:** associated with the operation and management of activities at the airports including companies on-site at the airport and airport-related businesses located elsewhere near the airport.
- **Indirect employment:** generated by industries that supply and support the activities at the airport, e.g. wholesalers, providing food for inflight catering, oil refining activities for jet fuel, companies providing accounting and legal services to airlines.
- **Induced employment:** generated by the employees of firms directly or indirectly connected to the airport spending their income in the national economy. For example, an airline employee might spend his/her income on groceries, restaurants, child care, dental services, home renovations and other items which, in turn, generate employment in a wide range of sectors of the general economy.
- **Catalytic employment:** captures the way in which the airport facilitates the business of other sectors of the economy (trade, tourism, investment…). The connectivity provided by an airport, regularly measured and reported in the ACI EUROPE Airport Industry Connectivity Reports through the connectivity index, is an important enabler in this area. As a matter of fact, a 10% increase in air connectivity comes with a 0.5% increase in GDP per capita.

The sustainability pathway focus on the assessment of these impacts and the development of actions to enhance them. The innovation and partnership enablers focus on initiatives such as dedicated education, apprenticeships or recruitment programmes, as well as the use of local services and products in their supply chain. To promote the latter, airports have the opportunity of fostering business for local suppliers through regular "Meet the buyers" events. Medium and small sized company often have difficulties to obtain attention from potential buyers to present their products and services. Airports are in a position of unlocking such potential, not only as large buyers themselves, but also as business hubs gathering many other potential customers.

At the same time, there are factors which can potentially lead to negative impacts on employment, such as operational cost pressures or digitalisation and automation, which might make obsolete some of the existing airport related jobs. Airports are encouraged to take action to minimise those negative impacts and strive to maintain and where possible, increase, their positive employment footprint, with a focus on providing high-quality jobs. Business incubator programmes, employee reskilling initiatives on new technologies, as well as partnerships with airport community stakeholders on job creation, are some examples of the initiatives that airports can take.

Through their impacts on catalytic employment, airports have the opportunity to potentially compensate for negative impacts of digitalisation and automation in their national economies. By developing air connectivity, airports contribute to enhanced activity in other sectors and consequently help create employment opportunities. Such development needs to be considered in the context of a balanced airport business model as outlined above.

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24. https://www.aci-europe.org/component/downloads/downloads/4159.html

Recommended Actions		Indicative KPIs
Launch	• Identify the scope of companies contributing to the airport's operations. • Assess the direct economic impact of the airport accordingly.	Direct, indirect, induced and catalytic economic impact (employment and GDP). % of airport staff from local communities. % of apprentices/ trainees in airport staff. % of suppliers from local communities. Improvement in connectivity index.
Development	• Extend the scope of the economic footprint assessment. • Implement training, recruitment and internship/ apprenticeship programmes to attract relevant staff, with a special focus on local communities.	
Maturity	• Identify challenges for employee retention and recruitment. • Establish action plan to address challenges, e.g. implement reskilling/upskilling initiatives. • Assess possibilities to enhance connectivity in the context of a balanced business model.	
Leadership	• Identify and maintain initiatives that have a quantified, positive impact on employability of current and potential new staff. • Share lessons learned with airport partners to drive positive impact on their employment footprint. • Develop connectivity in the context of a balanced business model.	

Enablers	Indicative Initiatives
Innovation	• Initiate dedicated employability programmes to support recruitment at the airport, e.g. training for local residents to facilitate potential recruitment by the airport, special projects to integrate socially vulnerable population. • Incubating/accelerating new entrepreneurship (including societal-purpose-driven entrepreneurship).
Partnerships	• Cooperate with local employment agencies to increase visibility of job opportunities at the airport. • Establish a central database for job vacancies on the airport site. • Engage with schools and universities to raise awareness of opportunities offered by airport related careers and the required skills. • Engage with vocational education and training centres on employability programmes. • Host networking events for business and obtain feedback from participants to assess the impacts. • Reach out to local businesses to identify potential for their integration in airport's supply chain.

➔ Sustainable Supply Chain

According to the United Nations Global Compact[25], a company's supply chain is directly related to a number of important issues, such as human rights, fair labour practices, and environmental progress. At the same time the practices and behaviours in the supply chain represent one of the most significant challenges for sustainable performance. For example, primary suppliers may employ a number of other sub-contractors. Airports indeed support jobs for suppliers and on-site subcontractors in numbers that in many cases far exceed their own staff. Consequently, the centre of gravity of social, environmental, human rights and other risks very much leans towards the airport's supply chain rather than towards the airport's own corporate entity. Leveraging their influence as buyers of good and services, airport operators can implement practices such as identifying suppliers meeting certain performance standards and monitoring the share of expenditures meeting those standards. Some airports will, for instance, track the share of amounts spent with labelled suppliers or products.

The sustainability pathway starts with identifying the supply chain hotspots, i.e. the most material supplier categories depending on the share of spending they represent and the sustainability related risks. For the hotspots identified, data collection about supplier performance and tender assessments based on sustainability performance criteria/requirements are recommended. Engaging in a dialogue with most material sub-contractors and suppliers to identify the social and environmental risks they pose is a key enabler in this regard. Airport operators should also strive to broaden the scope of their engagement towards the extended supply chain, i.e. trying to influence the sustainability performance of sub-sub-contractors. The development of a Code of Conduct for suppliers as well as compliance assessment are also key components of the sustainability pathway.

Recommended Actions		Indicative KPIs
Launch	• Identify suppliers who represent a sizeable proportion of the total spend. • Assess the risks related to these suppliers based on sustainability impact areas and their compliance with performance standards.	Presence of Code of Conduct. Number of supplier audits / self assessments to confirm compliance. At least 15% of tender assessment to be related to sustainability criteria for a gradually increasing number of airport tenders.
Development	• Develop a Code of Conduct for suppliers and embed it in the tenders and contracts. • Introduce key sustainability assessment criteria that establish real incentives to improve performance (e.g. on human rights and business ethics, environment).	
Maturity	• Assess compliance of suppliers with Code of Conduct, through audits, self assessment, and certifications.	
Leadership	• Achieve quantifiable performance improvements of subcontractors. • Influence subcontractors' supply chain management and thus enhance the sustainability of the airport's extended supply chain.	

25. https://www.unglobalcompact.org/docs/publications/UN_Global_Compact_Guide_to_Corporate_Sustainability.pdf

Enablers	Indicative Initiatives
Innovation	• Define ways to influence the sustainability performance of the extended supply chain, involving sub-sub-contractors. • Establish a Code of Conduct helpdesk to help potential suppliers understand airport requirements. • Promote sustainable public procurement practices beyond the airport's supply chain, in accordance with national policies and priorities. • Launch a multi-stakeholder approach, involving suppliers and partner industries, in order to define a consolidated framework, including guidelines to target material issues, performance requirements to include in tenders, and data to collect from suppliers to demonstrate performance.
Partnerships	• Engage in a dialogue with most material sub-contractors and suppliers to identify the social and environmental risks they pose, and the reliable information they can provide to show progress. Airports can provide awareness sessions, set expectations, and provide suggestions for improvements.

➔ Sustainable Destination

International tourists are set to increase from 25 million in 1950 to an expected 1.8 billion by 2030. In 2016 travel and tourism represented globally approximately 10% of total global Gross Domestic Product (GDP, including direct, indirect and induced impacts). Overtourism refers to the impact of tourism on a destination, which negatively affects life quality of citizens and visitor experience.

A number of strategies are available to address the challenges of overtourism and promote sustainable tourism, including improved city infrastructure, involvement of the local communities, and time-based dispersal of visitors. Evidently, these strategies, as well as the quantitative and qualitative characteristics of tourism (e.g. growth, sustainable tourism) will affect airports. At the same time, airports can potentially play a role in raising passengers' awareness of sustainability issues and direct their tourism choices accordingly. According to the 2018 WTO report on Tourism and the SDG's, public policies require among others dialogue between the key stakeholders, promotion of the private sector, and better integration between the tourism and non-tourism sectors.

The sustainability pathway focuses on assessing the tourism status in the region and the role of the airport, developing initiatives to promote sustainable tourism, forming partnerships with key stakeholders, and achieving measurable outcomes. The partnership enablers are related to engaging in a dialogue with national/local government, other businesses, NGOs, etc. to formulate effective policies in this field.

Recommended Actions		Indicative KPIs
Launch	• Assess the tourism status in the region and the role of the airport. • Engage with local authorities and other relevant stakeholders to identify a vision for the destination.	Presence of a sustainable destination action plan. Number of personnel involved in the action plan. Existence of specific airport programmes for sustainable destination.
Development	• Develop sustainable destination action plan. • Contribute to third party initiatives that promote sustainable tourism.	
Maturity	• Initiate or lead sustainable destination programmes.	
Leadership	• Assess the impact of airport initiatives and further improve airport engagement.	

Enablers	Indicative Initiatives
Innovation	• Share airport's experience with "sustainability-as-a-service" (see Quality of Service) and provide training to tourism professionals to increase awareness of sustainability and encourage the development of related service offerings. • Promote sustainable tourism awareness for passengers, e.g. by distributing information on hotels and restaurants sourcing organic products. • Undertake qualitative studies for measuring the sustainability of tourism in the region.
Partnerships	• Engage in a dialogue with national and local government to develop the necessary framework for sustainable tourism, cooperate with businesses and NGOs to formulate initiatives, including marketing, infrastructure, and financing. • Build alliances with tourism stakeholders (municipalities, hotels, airlines) for promoting sustainable tourism and for enhancing tourist experience while preserving/enhancing local capacity/local standards of living.

5

NEXT STEPS

ACI EUROPE considers the launch of this Sustainability Strategy as a first step in supporting airport operators in measuring and enhancing the sustainability of their operations in a comprehensive manner – and thus improve the sustainability of the airport industry, noting that many airports have already begun this journey.

To further support its members, ACI EUROPE will pursue activities in four priority areas in the coming years:

1. Outreach and engagement with member airports regarding the implementation of the strategy, promoting the use of the 13 material issues identified as a common reference for airports' individual sustainability strategies and action plans.

2. Critical review and adjustments of the strategy and the associated toolbox, reflecting the latest developments in sustainability as well as feedback from airports and interested third parties.

3. Alignment of existing guidance material with the present strategy and provision of additional guidance material where needed.

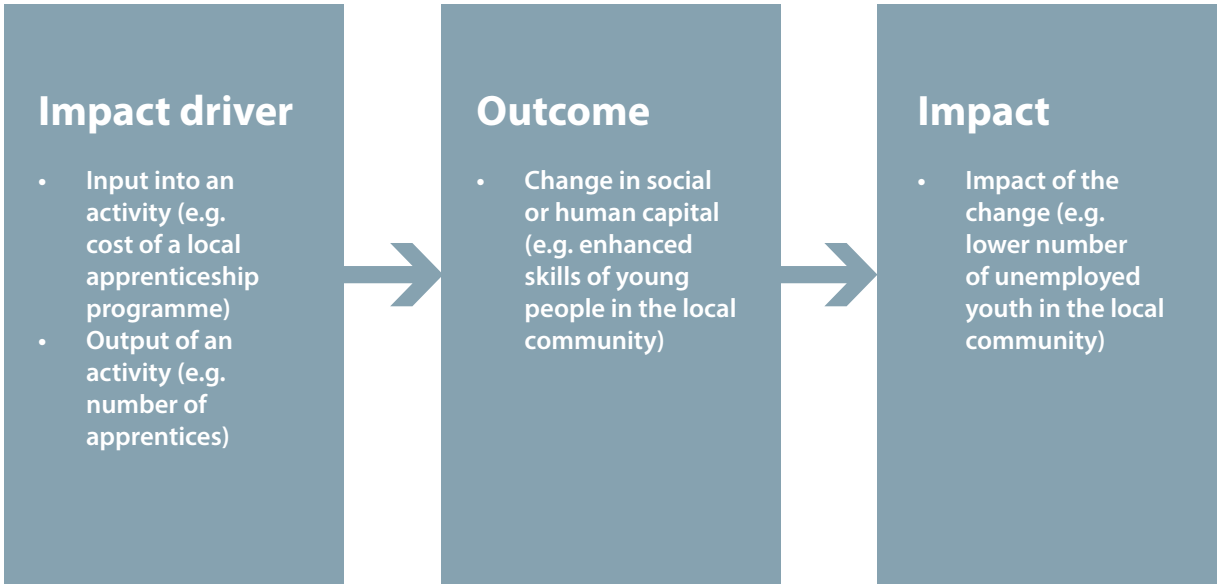
4. In alignment with the UN SDG 17 – *Strengthen the means of implementation and revitalize the global partnership for sustainable development*, engagement with industry partners and relevant institutional stakeholders, such as the World Economic Forum, the UN Global Compact or the Global Reporting Initiative to support progress in reaching new levels of sustainability in and beyond the airport sector.

ANNEX 1

Valuing Changes in Non-Financial Capital

The measurement and assessment of a company's impact on non-financial capital (e.g. social, human, intellectual and natural) is key to identify areas for improvement, define and implement actions to enhance the added value provided to society. Frameworks such as the Social Return on Investment (SROI) by Social Value UK[26], the Social and Human Capital Protocol[27] from the Social and Human Capital Coalition or the Natural Capital Protocol[28] from the Natural Capital Coalition provide relevant guidance that airports might wish to follow. In particular, they should take into account the following points for attention:

- It is important to **understand the full impact pathway**, i.e. which activity leads to a specific outcome, how it does so, and how this outcome impacts on social or human capital. Both positive and negative impacts should be considered. Such a pathway can be established both to understand past impacts and to forecast impacts of new activities.



26. Formerly SROI Network: http://www.socialvalueuk.org/app/uploads/2016/03/The%20Guide%20to%20Social%20Return%20on%20Investment%202015.pdf
27. http://docs.wbcsd.org/2017/form/scp-download.html
28. https://naturalcapitalcoalition.org/natural-capital-protocol/

- The **boundary of the assessment** needs to be defined, along multiple dimensions such as: organisational (e.g. at the corporate or project level), geographic (e.g. local, regional or global), temporal (time period) and value chain (activities under direct operational control by the company or upstream and/or downstream activities in the supply chain). This is important because depending on the boundary set, impacts might vary – e.g. a positive local impact might result from the displacement of a negative one to a different location, which would only be captured if a broader geographical boundary is set. Furthermore, some impacts only materialise over time. To define the relevant boundaries, airports should consider the intended use of the results, the needs and interests of their stakeholders, the likely effectiveness of addressing an issue, their ambition level as well as the availability of resources and data.

- When assessing the impact of a company's initiative, it is important to establish a **reference for the comparison**. It can be, for instance, the situation prior to the launch of an initiative or a counterfactual situation (analysing how an impact would have evolved if no action was taken). It is also necessary to carefully analyse whom an observed change can be attributed to, as it might coincide with but not necessarily result from a company's action. Furthermore, unintended effects should be taken into account, as well as possibly varying impacts on different stakeholder groups.

- There are several **methodologies** available in order to allocate a value to a social, human or natural capital impact. They can be grouped in three main categories: qualitative (describing a change and usually relying on perceptions, e.g. through case studies), quantitative (using numerical but non-monetary values, e.g. scores) and monetary (assigning a financial value to an impact). Literature reviews, surveys, workshops and data analysis are usually key components of these approaches.

- It is recommended for airports to review and evaluate existing approaches as they are applicable to them, taking into account the type of impact analysed and the intended use of the assessment. For instance, monetary approaches allow for a direct comparison with financial information and are as such particularly relevant for business decision-making. However, social impact areas relating to health, culture or ethics can usually not be valued by a monetary approach in a comprehensive manner and, furthermore, such an approach might be seen as morally questionable.

- A valuation of impacts can, in general, happen at different levels of granularity; depending on the intended use of the results, more or less precise assessments are warranted. When communicating about the results, airports are encouraged to be **transparent** about the methodology used as well as any associated assumptions, limitations in data availability, quality or consistency and the resulting **uncertainties**.

ANNEX 2

ACI EUROPE Sustainability Strategy for Airports, the UN SDGs and GRI

The table below presents an indicative mapping between the 13 material issues addressed by this strategy and the most relevant UN SDGs and GRI KPIs, as per GRI Standards (2016) & GRI AOSS (2014). It also provides an indicative scale of the impact (boundary) for each issue, which is required for reporting under GRI.

Impact	Material Issue	SDGs	GRI KPIs	Scale of Impact
Environmental	Climate Change	• 7.2: Increase substantially the share of renewable energy in the global energy mix. • 11.B: Develop and implement a holistic disaster risk management plan at all levels. • 13.1: Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries. • 13.3: Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning.	305-1 Direct (Scope 1) GHG emissions. 305-2 Energy indirect (Scope 2) GHG emissions. 302-1 Energy consumption within the organisation. 302-2 Energy consumption outside of the organisation (airport community). 302-3 Energy intensity. 302-4 Reduction of energy consumption. 302-5 Reductions in energy requirements of products and services. 201-2 Financial implications and other risks and opportunities due to climate change.	Global

Impact	Material Issue	SDGs	GRI KPIs	Scale of Impact
Environmental	Local Air Quality	• 3.9: Substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination. • 11.6: Reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management.	A05: Ambient air quality levels according to pollutant concentration sin micrograms per cubic meter ($\mu g/m^3$) or parts per million (ppm) by regulatory regime. 305-7 Nitrogen oxides (NO_x), sulphur oxides (SO_x), and other significant air emissions.	Local
	Material Resources	• 12.2: Achieve the sustainable management and efficient use of natural resources. • 12.3: Halve per capita global food waste at retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses. • 12.5: Substantially reduce waste generation through prevention, reduction, recycling and reuse.	301-1 Materials used by weight or volume. 301-2 Recycled input materials used.	Local

Impact	Material Issue	SDGs	GRI KPIs	Scale of Impact
Environmental	Water	• 6.3: Improve water quality by reducing pollution, eliminating dumping and minimising release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally. • 6.4: Substantially increase water-use efficiency across all sectors and reuse sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity.	303-1 Water withdrawal by source. 303-2 Water sources significantly affected by withdrawal of water. 303-3 Water recycled and reused.	Local
	Biodiversity	• 15.5: Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species. • 15.7: Take urgent action to end poaching and trafficking of protected species of flora and fauna and address both demand and supply of illegal wildlife products. • 15.C: Enhance global support for efforts to combat poaching and trafficking of protected species, including by increasing the capacity of local communities to pursue sustainable livelihood opportunities.	304-1 Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas. 304-2 Significant impacts of activities, products, and services on biodiversity. 304-3 Habitats protected or restored.	Local

Impact	Material Issue	SDGs	GRI KPIs	Scale of Impact
Social	**Human Rights, Values and Ethics**	• 8.7: Take immediate and effective measures to eradicated forced labour, end modern slavery and human trafficking and secure the prohibition and elimination of the worst forms of child labour, including recruitment and use of child soldiers, and by 2025 end child labour in all its forms. • 16.5 Substantially reduce corruption and bribery in all their forms. • 16.2 End abuse, exploitation, trafficking and all forms of violence against and torture of children.	102-16 Values, principles, standards, and norms of behaviour. 410-1 Security personnel trained in human rights policies or procedures. 412-1 Operations that have been subject to human rights reviews or impact assessments. 412-2 Employee training on human rights policies or procedures.	Airport
	Noise & Quality of Life of Local Communi-ties	• 3: Ensure healthy lives and promote well-being for all at all ages. • 11.2: Enhance inclusive and sustainable urbanisation and capacity for participatory, integrated and sustainable human settlement planning and management in all countries.	A07: Number and percentage change of people residing in areas affected by noise. 413-1 Operations with local community engagement, impact assessments, and development programmes.	Local

Impact	Material Issue	SDGs	GRI KPIs	Scale of Impact
Social	**Employee Experience**	• 5.5: Ensure women's full and effective participation and equal opportunities for leadership at all levels of decision-making in political, economic and public life. • 8.5: Achieve full and productive employment and decent work for all women and men, including for young people and people with disabilities, and equal pay for work of equal value. • 8.8: Protect labour rights and promote safe and secure working environments for all workers.	405-1 Diversity of governance bodies and employees. 405-2 Ratio of basic salary and remuneration of women to men. 403-1 Workers representation in formal joint management–worker health and safety committees . 403-2 Types of injury and rates of injury, occupational diseases, lost days, and absenteeism, and number of work-related fatalities. 407-1 Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk.	Airport
	Quality of Service	• 9.1: Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all.	GRI 103: Management Approach for Quality of Service. 416-1 Assessment of the health and safety impacts of product and service categories. 418-1 Substantiated complaints concerning breaches of customer privacy and losses of customer data.	Airport

Impact	Material Issue	SDGs	GRI KPIs	Scale of Impact
Economic	**Balanced Business Model**	• 8.2: Achieve higher levels of economic productivity through diversification, technological upgrading and innovation, including through a focus on high-value added and labour-intensive sectors. • 17.16: enhance the global partnership for sustainable development, complemented by multi-stakeholder partnerships that mobilise and share knowledge, expertise, technology and financial resources, to support the achievement of the sustainable development goals.	201-1 Direct economic value generated and distributed. 201-2 Financial implications and other risks and opportunities due to climate change.	National
	Economic Development & Employability	• 4.4: Substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship. • 8.3. Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the formalisation and growth of micro-, small- and medium-sized enterprises.	201-1 Direct economic value generated and distributed. 203-1 Infrastructure investments and services supported 203-2 Significant indirect economic impacts.	National

Impact	Material Issue	SDGs	GRI KPIs	Scale of Impact
Economic	**Sustainable Supply Chain**	• 12.7 Promote public procurement practices that are sustainable, in accordance with national policies and priorities. • All SDGs as outlined above for Environmental Impacts, Human Rights, Values & Ethics and Employee Experience.	412-3 Significant investment agreements and contracts that include human rights clauses or that underwent human rights screening. 407-1 Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk. 414-1 New suppliers that were screened using social criteria. 414-2 Negative social impacts in the supply chain and actions taken.	National/ Global
	Sustainable Destination	• 8.9: Devise and implement policies to promote sustainable tourism that creates jobs and promotes local culture and products. • 12.B: Develop and implement tools to monitor sustainable development impacts for sustainable tourism that creates jobs and promotes local culture and products.	413-1 Operations with local community engagement, impact assessments, and development programs. 413-2 Operations with significant actual and potential negative impacts on local communities.	Local

ANNEX 3

Reference Material

The list below outlines some of indicative key material that can help airports obtain additional guidance on the material issues covered by the present strategy. It is non-exhaustive and mainly covers documents directly referred to in this strategy as well as good practices identified in other industries.

Material Issue	Reference Material
Transversal	• Global Reporting Initiative: https://www.globalreporting.org • International Integrated Reporting Council: Integrated Reporting Framework: https://integratedreporting.org/resource/international-ir-framework/ • Human and Social Capital Coalition: Human and Social Capital Protocol (February 2019): https://docs.wbcsd.org/2017/form/scp-download.html • UN Global Compact: Guide to Corporate Sustainability (December 2014): https://www.unglobalcompact.org/docs/publications/UN_Global_Compact_Guide_to_Corporate_Sustainability.pdf • UN Global Compact Guide to the SDGs (2017): https://www.unglobalcompact.org/library/4321 • GlobeScan-SustainAbility Survey 2019 - Evaluating Progress on the SDGs: https://globescan.com/evaluating-progress-sdgs/ • EUROCONTROL Challenges of Growth (2018): https://www.eurocontrol.int/articles/challenges-growth • Natural Capital Coalition: Natural Capital Protocol (May 2019): https://naturalcapitalcoalition.org/natural-capital-protocol/ • EASA, EEA, EUROCONTROL: European Aviation Environmental Report 2019 (January 2019): https://www.easa.europa.eu/eaer/ • International Civil Aviation Organization (ICAO): Environmental Report 2016: https://www.icao.int/environmental-protection/Documents/ICAO%20Environmental%20Report%202016.pdf • EUROCONTROL: Specification for Collaborative Environmental Management (CEM) (August 2018): https://www.eurocontrol.int/publications/eurocontrol-specification-collaborative-environmental-management-cem

Impact	Material Issue	Reference Material
Environmental	Climate Change	• IPCC: Special Report on Global Warming 1.5°C. Summary for Policymakers (October 2018): https://www.ipcc.ch/sr15/chapter/summary-for-policy-makers/ • European Commission: Communication: A Clean Planet for all (November 2018): https://ec.europa.eu/clima/policies/strategies/2050_en • ACI World: Guidance Manual: Greenhouse Gas Emissions Management (2018): https://store.aci.aero/product/guidance-manual-airport-greenhouse-gas-emissions-management/ • ACI World Airport Carbon and Emissions Reporting Tool (ACERT): https://aci.aero/about-aci/priorities/environment/acert/ • ACI World Aircraft Ground Energy System - Simulator (AGES-S): https://aci.aero/about-aci/priorities/environment/ages-s/ • World Business Council for Sustainable Development (WBCSD), World Resources Institute: Greenhouse Gas Protocol: https://ghgprotocol.org/ • Energy Transitions Commission: Mission Possible. Reaching net-zero carbon emissions from harder-to-abate sectors by mid-century (November 2018): http://www.energy-transitions.org/mission-possible • ICAO Eco-Airport toolkit: A Focus on the production of renewable energy at the Airport site (2019): https://www.icao.int/environmental-protection/Documents/Energy%20at%20Airports.pdf • ACI World: ACI Policy Brief: Airports' Resilience and Adaptation to Changing Climate (October 2018): https://store.aci.aero/wp-content/uploads/2018/10/Policy_brief_airports_adaption_climate_change_V6_WEB.pdf • EUROCONTROL: Adapting aviation to a changing climate: https://www.eurocontrol.int/Resilience

Impact	Material Issue	Reference Material
Environmental	Local Air Quality	• ACI EUROPE: Ultrafine Particles at Airports: (June 2018): https://www.aci-europe.org/component/downloads/downloads/5566.html • ICAO Airport Air Quality Manual (Doc 9889): https://www.icao.int/environmental-protection/Documents/Doc%209889.SGAR.WG2.Initial%20Update.pdf
	Material Resources	• WBCSD: CEO Guide to the Circular Economy (2017): https://docs.wbcsd.org/2017/06/CEO_Guide_to_CE.pdf • Ellen MacArthur Foundation: https://www.ellenmacarthurfoundation.org/publications • ICAO Eco-Airport toolkit: Waste Management at Airports (2019): https://www.icao.int/environmental-protection/Documents/Waste_Management_at_Airports_booklet.pdf
	Water	• European Water Stewardship: https://ews.info/
	Biodiversity	• ACI World: Combating Illegal Wildlife Trade (March 2019): https://store.aci.aero/product/best-practice-case-studies-from-selected-airports-combating-illegal-wildlife-trade/ • Training and awareness resources on wildlife trafficking: ROUTES Partnership: https://routespartnership.org/ • Ecosystem Services Partnership (ESP): https://www.es-partnership.org/ • Sub-Global Assessment (SGA) Network: http://www.ecosystemassessments.net/ • Intergovernmental Panel on Biodiversity and Ecosystem Services (IPBES): https://www.ipbes.net/

Impact	Material Issue	Reference Material
Social	**Human Rights, Values and Ethics**	• UN Guiding Principles on Business and Human Rights (2011): https://www.ohchr.org/documents/publications/GuidingprinciplesBusinesshr_eN.pdf • ACI World: Handbook on Combatting Human Trafficking (2019): https://store.aci.aero/product/combatting-human-trafficking-handbook-2019/
	Noise & Quality of Life of Local Communities	• ACI EUROPE: Addressing the Future of Aviation Noise (October 2018): https://www.aci-europe.org/component/downloads/downloads/5778.html • ACI World and CANSO: Managing the Impacts of Aircraft Noise (September 2015): https://www.aci-europe.org/component/downloads/downloads/4477.html • ICAO: Community Engagement for Aviation Environmental Management (Circular 351) (2018): https://www.icao.int/environmental-protection/Documents/COMMUNITY_ENGAGEMENT_FOR%20AVIATION%20ENVIRONMENTAL_%20MANAGEMENT.EN.pdf • ICAO: Guidance on the Balanced Approach to Aircraft Noise Management (Doc 9829) (2008)
	Employee Experience	• International Labour Organization (ILO): The business case for change: https://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/---publ/documents/publication/wcms_700953.pdf
	Quality of Service	• ACI EUROPE : Guidelines for Passenger Services at European Airports - SECOND EDITION (June 2018): https://www.aci-europe.org/component/downloads/downloads/5591.html • ACI World: Airport Digital Transformation (2017): https://aci.aero/Media/aabcf490-613e-44ab-b98c-339377de0cd0/ki_0Cg/Publications/2017/Digital%20IT%20Transformation/Airport_Digital_Transformation.pdf

Impact	Material Issue	Reference Material
Economic	**Balanced Business Model**	• WBCSD Future Leaders Programme and Accenture: Integrated Performance Management. Better decisions today, better impact tomorrow (2014): https://www.wbcsd.org/contentwbc/download/2926/37488 • IIRC: Business Model Background Paper for Integrated Reporting (March 2013): https://integratedreporting.org/wp-content/uploads/2013/03/Business_Model.pdf
	Economic Development & Employability	• InterVISTAS: Study on the Economic Impact of European Airports (January 2015): https://www.aci-europe.org/component/downloads/downloads/4159.html • ACI EUROPE: Airport Industry Connectivity Report 2018: https://www.aci-europe.org/component/downloads/downloads/5653.html.
	Sustainable Supply Chain	• International Federation of Accountants: Defining and Developing an Effective Code of Conduct for Organizations (May 2007): https://www.ifac.org/publications-resources/defining-and-developing-effective-code-conduct-organizations • United Nations: UN Supplier Code of Conduct (April 2018): https://www.un.org/Depts/ptd/about-us/un-supplier-code-conduct
	Sustainable Destination	• Global Sustainable Tourism Council: https://www.gstcouncil.org/ • World Travel and Tourism Council (WTTC), McKinsey: Coping With Success – Managing Overcrowding in Tourism Destinations (2017): https://www.wttc.org/-/media/files/reports/policy-research/coping-with-success---managing-overcrowding-in-tourism-destinations-2017.pdf • United Nations World Tourism Organization (UNWTO): Tourism and the Sustainable Development Goals – Journey to 2030: https://www.e-unwto.org/doi/pdf/10.18111/9789284419340

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