

Sustainability Management in the Aviation and Tourism Industry

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Section 3: Regulatory

Lars Kröplin

Fachbereich 3 Wirtschaft und Recht

Sustainability Management in the Aviation and Tourism Industry







Regulatory

Overview – Regulations, Key Player, Key Decisions

Emission Trading – EU ETS, CORISA

Noise Regulations

Taxes

What is regulated and on which level: A rough overview



Торіс	int'l. Authority	EU Authority	National Authority	Comment	Rele- vance
Non-financial Report	n.a.	EU Com , EU Parliament 2014/95/EU	BMJV	Implemented in 2018	high
Climate Protection	UNFCCC, Kyoto-, Paris- Protocol	EU Com, EU Parliament DG Climate, DG Move	Bundesregierung BMU, BMVI	Passed 2019	high
CO ₂ related regulations	UNFCCC, ICAO, Kyoto- , Paris- Protocol	EU Com, EU Parliament DG Climate, DG Move	Bundesregierung BMU, BMVI	EU ETS since 2005 (aviation 2012), CORISA 2021 ,LVSt since 2011	high
Emission (UFP, NO _x etc)	ICAO	EU Com, EU Parliament DG Climate, DG Move	Bundesregierung BMU, BMVI, local authorities	so far for road transport only, but aircraft thresholds expected	medium/ high
Noise	ICAO	EU Com, EU Parliament DG Climate, DG Move	Bundesregierung BMU, BMVI, local authorities	FlulärmG since 2007, latest evaluation 2018	high
Renewable energy directive (RED)	n.a.	EU Com, EU Parliament	Bundesregierung BMU	determines how to produce renewable energy and biomass since 2009/2018	for SAF high
Waste	n.a.	EU Com, EU Parliament	Bundesregierung BMU	determines how to treat and recycle waste, SUP-Ban 2019/904EU	medium high
Dangerous goods	n.a.	EU Com, EU Parliament	Bundesregierung BMU	determines how to treat and handle dangerous goods	medium
Water protection	n.a.	EU Com, EU Parliament 2000/60/EC	Bundesregierung BMU	European framework, national directives	low
Radiation	n.a.	EU Com, EU Parliament 2000/60/EC	Bundesregierung BMU	StrlSchV 2018	low
Supply Chain	n.a.	EU Com, EU Parliament	Bundesregierung BMZ	Nachhaltige Wertschöpfungskettengesetz (NaWKG) planned	medium
Gender equality	UN	EU Com, EU Parliament Various directives	BMJV	Article 157 Treaty on the Functioning of the EU 'TFEU' on gender discrimination; others	medium

Non-financial reporting – a general obligation for all major companies



Overview

- EU law requires large companies to disclose certain information on the way they operate and manage social and environmental challenges
- Target is to help investors, consumers, policy makers and other stakeholders to evaluate the non-financial performance of large companies and encourages these companies to develop a responsible approach to business
- Directive 2014/95/EU lays down the rules on disclosure of non financial and diversity information by large companies. They are required to include non-financial statements in their reports from 2018 onwards

Companies that must comply

- EU rules on non-financial reporting only apply to large public-interest companies with more than 500 employees
- Covered are approximately 6,000 large companies and groups across the EU, including listed companies, banks, insurance companies, other companies designated by national authorities as public-interest entities

Information to be disclosed

Under Directive 2014/95/EU, large companies have to publish reports on the policies they implement in relation to

- environmental protection,
- social responsibility and treatment of employees,
- respect for human rights,
- anti-corruption and bribery,
- diversity on company boards (in terms of age, gender, educational and professional background)

How to report

Directive 2014/95/EU gives companies significant flexibility to disclose relevant information in the way they consider most useful. Companies may use international, European or national guidelines to produce their statements – for instance they can rely on the

- UN Global Compact,
- the OECD guidelines for multinational enterprises or
- ISO 26000

In June 2017 the European Commission published its guidelines to help companies disclose environmental and social information. These guidelines are not mandatory and companies may decide to use international, European or national guidelines according their own characteristics or business environment.

 $https://ec.europa.eu/info/business-economy-euro/company-reporting-and-auditing/company-reporting/non-financial-reporting_enury-reporting/non-financial-reporting_enury-reporting/non-financial-reporting_enury-reporting/non-financial-reporting_enury-reporting/non-financial-reporting_enury-reporting/non-financial-reporting_enury-repor$

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Non-financial reporting is an intense effort within the annual reporting – Example Lufthansa Group





LUFTHANSA GROUP

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Source: https://investor-relations.lufthansagroup.com/fileadmin/downloads/en/financial-reports/annual-reports/LH-AR-2021

Non-financial reporting on 41 pages !



Regulators

Overview – Regulations, Key Player, Key Decisions

Emission Trading – EU ETS, CORISA

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Recommendation for Tourism

Key Players and Regulators: UN related bodies



The UNFCCC secretariat (UN Climate Change) was established in 1992 when countries adopted the United Nations

Framework Convention on Climate Change (UNFCCC).

With the subsequent adoption of the Kyoto Protocol in 1997 and the Paris Agreement in 2015, Parties to these three agreements have progressively reaffirmed the secretariat's role as the United Nations entity tasked with supporting the global response to the threat of climate change. Since 1995, the secretariat is located in Bonn, Germany.

- Facilitating the intergovernmental climate change negotiations,
- Supports a complex architecture of bodies that serve to advance the implementation of the Convention, the Kyoto Protocol and the Paris Agreement.
- Provides technical expertise and assists in the analysis and review of climate change information
- Maintenance the registry for Nationally Determined Contributions (NDC) a key aspect of implementation of the Paris Agreement
- Organizes and supports between two and four negotiating sessions each year espec COP (the largest and most important is the Conference of the Parties')
- Supports the Marrakech Partnership for Global Climate Action

Source: https://unfccc.int/about-us/about-the-secretariat

The Intergovernmental Panel on Climate Change (IPCC) -1988 is the United Nations body for assessing the science related to climate change; provides policymakers with regular scientific assessments on the current state of knowledge about climate change.

Source: https://www.ipcc.ch/about/

The World Tourism Organization (UNWTO) is the United Nations agency responsible for the promotion of responsible,

sustainable and universally accessible tourism.

- The leading international organization in the field of tourism, UNWTO promotes tourism as a driver of economic growth, inclusive development and environmental sustainability and offers leadership and support to the sector in advancing knowledge and tourism policies worldwide.
- UNWTO encourages the implementation of the Global Code of Ethics for Tourism, to maximize tourism's socio-economic contribution while minimizing its possible negative impacts, and is committed to promoting tourism as an instrument in achieving the Sustainable Development Goals (SDGs), geared towards reducing poverty and fostering sustainable development worldwide.

Source: http://www2.unwto.org/content/who-we-are-0

ICAO International Organization for Aviation



The International Civil Aviation Organization is a specialized agency of the United Nations with its legal basis: *The Convention on International Civil Aviation* (Chicago, 1944).

Task: to codify the principles and techniques of international air navigation and ensure safe and efficient air transportation

Bodies:

Assembly:

192 member states, reviews the work of the organization, approves amendments to the *Convention on International Civil Aviation* (Chicago, 1944), which are subject to ratification by Member States.

Council:

36 member states, reports to the Assembly, gives direction of work, adopts international Standards and Recommended Practices (SARPs) to develop the Annexes

<u>CAEP:</u>

Committee on Aviation Environmental Protection, policies and standards on aircraft noise and aircraft engine emissions

International Associations and European Bodies



- International Air Transport Association (IATA): global trade organization (airlines)
- Regional Airline associations
- Airports Council International (ACI): non profit global trade organization of the world's airports
- Civil Air Navigation Services
 Organization (CANSO): air traffic
 control provider (ANSPs) worldwide.
- Air Transport Action Group (ATAG): aviation industry association with the focus on sustainable development

- European Commission (EC): adopts rules by mainly exceeding minimum standards of ICAO
- European Civil Aviation Conference (ECAC): sub-organization of ICAO in Europe, harmonization of European rules (safety, audits and environment)
- European Aviation Safety Agency (EASA): strategy for aviation safety in the European Union
- Eurocontrol: European Organization for the Safety of Air Navigation, coordinates and plans air traffic control for all of Europe

Overview on Aviation related Regulators and Associations





Regulators and their legal reach



SCALE OF TYPE OF INSTRUMENT		LEGAL STANDING	
APPLICABILITY			
Global	ICAO guidance resolutions	Voluntary since <u>States can file a difference</u> . However, the EU have a programme to eliminate national differences to the extent possible	
	ICAO aircraft standards (Annex 16)	De-facto mandatory since this obliges manufacturers to comply with noise and emissions standards otherwise they would deny a significant market due to access restrictions for non compliance with ICAO chapters. However they mitigate the risk of environmental constraints and restrictions tend to remove the older aircraft (and hence worst equipped).	
EUROPEAN	EC Regulations	Binding in their objectives and implementation means on EC Member States	
	EC Directives	Binding in their objectives Subject to transposition into Members States' <u>National law</u>	
NATIONAL	Regulations	Mandatory	
LOCAL	Airport specific rules and local planning law requirements etc	Mandatory	



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Carbon Reduction Targets: Where and how is the implementation managed?





The Kyoto Protocol as first major international step towards GHG reduction





Key facts of the Kyoto Protocol:

- Reached in Kyoto, Japan, in 1997, mandating that industrialized nations cut their greenhouse gas emissions
- 37 industrialized nations plus the EU were mandated to cut their GHG emissions
- 100+ developing countries, including China and India, were exempted
- Target was to cut country's emissions to 5% (below 1990) between 2008 and 12
- The treaty also established a trading system – credits toward the emission targets from projects outside their country

Aviation has been excluded, but ICAO has been asked to develop measures to reduce CO2 emission for International Aviation

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Source: Compundchem.com

The Paris Agreement sets targets for the whole world to fight climate change



Paris France



United Nations Climate Change

Key facts of the Paris Agreement:

- Signed at COP 21 in Paris, on 12 December 2015 as a landmark agreement to combat climate change
- 194 Parties out of 197 Parties to the Convention are Parties to the Paris Agreement
- The Long-term temperature goal (Art. 2) of **limiting global temperature increase to well below 2 degrees** Celsius, while pursuing efforts to limit the increase to 1.5 degrees is reaffirmed
- All Parties are required to define "nationally determined contributions" (NDCs) (Art. 4) and to pursue national measures. Also regular reporting on their emissions and on their implementation efforts is required
- Global peaking and 'climate neutrality' (Art. 4) to be reached as soon as possible, recognizing peaking will take longer for developing country Parties. A balance between anthropogenic emissions and removals by sinks of GHGs to be reached in the second half of the century
- Finance, technology and capacity-building support (Art. 9, 10 and 11) The Paris Agreement reaffirms the obligations of developed countries to support the efforts of developing country Parties to build clean, climate-resilient futures

Source: https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement/key-aspects-of-the-paris-agreement

", The EU Green Deal" - EU commission commits to ambitious environmental objectives





Source: EU Comission

"EU Fit for 55" – Far ranging legislation is planned with strong potential effects on airlines



- The European Green Deal is the EU's strategy for reaching its 2050 climate goal
- The 'Fit for 55' legislative package will turn the EU's ambition into reality
- Legislation process is expected to finish in 2022

Relevant policies for aviation in Fit for 55 include:

- A SAF blending mandate under the ReFuel EU Aviation initiative
- The review of the Energy Taxation Directive (ETD)
- · The proposals on EU ETS and CORSIA
- The review of the Renewable Energy Directive (RED) and the alternative fuels infrastructure Directive

Focus topic: All flights from EU airports to use SAF

SAF mandate share targets (fuel %)



- EU plan currently looks for SAF mandate for all flights departing form EU airports
- The SAF mandate for a journey with an intermediate stop in the Gulf region would end there

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- For EU airlines in moste cases the tri to the final destination would need to be SAFed
- Airlines: Competition neutrality in danger!

Source: EU Comission, Eurocontrol, A4E



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EU ETS – Europe's key instrument to tackle Climate Change (targets for 2020)





Source: https://ec.europa.eu/clima/sites/clima/files/docs/ets_handbook_en.pdf

EU ETS "Cap and Trade System" basically simple, but lessons had to be learned



Emissions

Certainty about quantity: GHG emissions trading directly limits GHG emissions by setting a system cap that is designed to ensure compliance with the relevant commitment.

Cost-effectiveness: Trading reveals the carbon price to meet the desired target. *Revenue*: If GHG emissions allowances are auctioned, this creates a source of revenue for governments, at least 50% of which should be used to fund measures to tackle climate change

Minimising risk to Member State budgets: The EU ETS provides certainty to emissions reduction for around 50% of EU emissions. This reduces the risk that Member States to meet their commitments under the Kyoto Protocol.

Flexibility: companies can decide how to "reduce" their emission – investment or allowances. Free allocation of financial resources to the best solution.

Steering the free allocation and emission allowances from outside (clean development mechanism credits) is critical for emission reduction.

Clear target by EU is 40 Euro per tonne

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Source: Source: European Environment Agency (2014)

EU ETS: emission development since 2005 – since 2013 massive reduction of free allowances





Source: https://www.eea.europa.eu/data-and-maps/dashboards/emissions-trading-viewer-1

Aviation's emission are growing





Source: https://www.eea.europa.eu/data-and-maps/dashboards/emissions-trading-viewer-1



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CORSIA as a bridging element to achieve Carbon Neutrality





- 1. Increase efficiency through modern (known) technology
- 2. Reduce impact through Offset programs
- 3. Eliminate emissions from aviation for example by using alternative power sources

Ambitious targets from international organizations

- COP21: limit global warming to less than 2°C
- COP24: carbon neutral economies by 2050
- IATA: reduction of 50% CO₂-emission by 2050 (baseline: 2005)

Air traffic growth overcompensates efficiency gains

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Key design features of the CORSIA



Phased Implementation



Source: ICAO 2017

Current Status on CORSIA Voluntary Participations



State voluntarily joined for the pilot phase

State expected to join in from 2027

State exempted (unless joining voluntarily) e.g. Least Developing Countries, Landlocked Developing Countries, Small Island Developing State,

As of May 6th 2019, **80 States**, representing approx. **77** % of international aviation activity, intend to voluntarily participate in CORSIA from its outset.

Source: IATA 2019

CORSIA: the international approach





State pair principle

It requires State-Pairs for compensation. Only flights between participating states are subject to compensation

Sectoral compensation

In the beginning each participating airline has to compensate the growth ratio of the whole industry

https://www.iata.org/policy/environment/Documents/corsia-handbook.pdf

Activists strongly criticize CORSIA



Corsia: worst option for the climate

Briefing on assessment of ICAO's offsetting scheme



"ICAO had a chance to get it right and missed it in 2016, when it decided on international climate policies for aviation. Instead of setting up an international PtL fund into which all airlines would pay based on the kilometers flown, with the proceeds then used to build PtL infrastructure, ICAO opted for the cheap, cop-out offset program that is CORSIA."

Dr. Dietrich Brockhagen, FOUNDER AND MD, atmosfair

https://www.rolandberger.com/en/Insights/Publications/Sustainable-aviation-fuels-Key-solution-to-achieving-net-zero.html

CORSIA Baseline Change: Aviation's Climate Regulation Is Broken Beyond Repair

30 Jun 2020



Main criticism examples:

- Low ambition, only CO2 nutral growth
- Loopholes, e.g. Fuels with just 10% emissions reduction eldigble
- Base year trick, with 2019 aviation will not pay (at least) for pilot phase
- Few existing compensation products offering "corresponding adjustments"



Regulators Overview – Regulations, Key Player, Key Decisions Emission Trading – EU ETS, CORISA Noise Regulations Taxes

Tackling Aircraft Noise in a "Balanced Approach" (BA)





Reduction of Noise events based on individual local situation and background. Evaluation of measures based on cost efficiency. Social and health aspects taken into account.

Source: ICAO

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Concept and Elements -Assessment of Noise Situation



- Identify noise problem
- Define noise objective
- Tools/procedures useful for assessing:
 - Noise contours
 - Noise index
 - Baseline (year)
 - Management plans



Source: ICAO

I. Reduction of Noise at Source – Development of Noise Standards





Noise Contour: technological progress reduces noise contour by 40-50%



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Source: https://www.lufthansagroup.com/en/responsibility/climate-environment/active-noise-abatement.html

II. Land-use Planning and Management



Airport Planning Manual, Part 2, (Doc 9184)

- Harmonizing land-use and airport activities
- Ensuring at existing airports that further residential developments do not endanger reduction on noise already achieved (prevention method)
- Conversion of incompatible land-use

One of the most critical areas, as it is difficult to find general procedures and guidelines.

Land use planning is managed by national or regional/local bodies.

Restrictions are defined in the German Aircraft Noise act.

But exemptions are possible and enforcement options in case of non-compliance are weak.

The sustainable success of noise reduction at source is closely linked to a strict land-use management

III. Noise Abatement Operational Procedures



Safety requirements have to fulfilled

Procedures to **minimize noise load under the flight path** (inbound, outbound, over-fly), residential areas

Ground operation of a/c and a/c services (relatively low costs)

Examples:

- Run-ups areas or facilities
- GPUs, APU, PCA
- Reverse trust
- Descent operations: low drag low power / CDO
- Dedicated runway use
- Aerobridges & Hydrant refueling
- Reducing ground movement



GPS steered landing approach





Source: https://www.dfs.de/dfs_homepage/en/Press/Press%20releases/2017/

Although individual aircraft have become some 75 % less noisy over the last 30 years, the growing amount of air traffic means high noise levels. SESAR members are researching enhanced arrival procedures enabled by a ground-based augmentation system (GBAS) to reduce noise impact of arriving aircraft at airports. In March 2017, Frankfurt Airport became the first airport in the world to fully implement GBAS precisionlandings. The procedures implemented by the airport on all three of its runways involve raising the angle to 3.2° during the final approach as an active measure to counteract noise. The implementation was pioneered by DFS, Fraport and Lufthansa.

Using GBAS, SESAR members have developed advanced approach procedures and more efficient flight trajectories with a view to reducing noise impact and improving fuel efficiency without impacting runway throughput. It enables approach procedures with various characteristics, including increased glide slopes, adaptive increased slopes, multiple runway aiming points, double slope approaches and approaches integrating curved transitions from required navigation performance (RNP) segments to GBAS landing system (GLS).



ICAO requirement: Not as a first resort due to impacts of operational restrictions

Bans and restrictions have **negative impact on airport capacity and traffic flow** (a/l networks, connectivity)

Night flight restrictions have negative economic impacts – not only on local level, but also on regional, national and international level

Examples:

- Brussels (Belgium) DHL: super hub in Europe, loss of 1.500 direct jobs
- Fraport: Night flight ban

Is the BA the right tool for airports?



Not well covered in the BA

- Noise Monitoring, Flight Tracking
- Complaints Management
- Community Relations
- Communications Publications, Website, Meetings
- Community Outreach Education, Projects

The process of the BA...

- will not lead to an understanding with the affected population in the vicinity
- will lead to confrontations in the public
- has not much value for a/p's community engagement

Dialogue to residents and vicinity needs to be established and managed:

- > Communities
- > Airports
- Air Traffic Control
- ➢ Airlines
- Academia

Airport Noise Charges



ICAO's policy on noise charges was developed in 1981.

- noise charges as preventive measures
- costs are attributed to airports
- costs are to be recovered from the users
- at airports facing noise problems
- costs have to be non-discriminatory between users

Tool by ACI World developed since 2002: Noise Rating Index:

- is an effective tool that is compatible with the ICAO system of noise certification standards; combines cumulative reductions with reductions at the three measurement points
- provides a consistent reference point to encourage manufacturers to develop and market the quietest possible aircraft and encourage airlines to upgrade their fleets as rapidly as possible.

Example: Differentiation of noise classes



"charged noise"





Regulators Overview – Regulations, Key Player, Key Decisions Emission Trading – EU ETS, CORISA Noise Regulations Taxes

Country comparison: Aviation taxes per passenger in selected countries





Note: Countries not mentioned in the figure do not apply aviation specific (indirect) taxes or apply a zero tax rate for certain taxes; the value of tax exemptions has not been quantified.

Source: European Commission, Directorate-General for Mobility and Transport, Taxes in the field of aviation and their impact : final report, Publications Office, 2019

Risk: CO₂ reduction cost, noise charges and taxes cause competitive disadvantages



*77% of international aviation is currently subject to the UN-Agreement on CO2 Reduction (CORSIA)

Only 5 European countries out of the 193 countries of the world levy a flight tax.

CO2 reduction schemes

of aviation

Multiple burdens

- UN-agreement on CO2-reduction
- UN-agreement + EU-emission trading system
- UN-agreement + EU-system + noise charge
- UN-agreement + EU-system + noise charge + flight tax

*source: ICAO, May 2018



Summary of Chapter 3

Key messages on the regulation of ESG in the aviation sector



- 1. Aviation is a very regulated industry. The regulators range from international organizations, European and national authorities to trade organizations and lobby groups
- Base for most environmental regulations is the Paris Agreement on climate change – the European Union is basing their ambitious "Green Deal" and Fit for 55 program on it
- 3. The EU ETS is an approach to reduce GHG emissions from European industries. It will be tightened for aviation in definition of the Fit for 55 program
- 4. CORSIA is the first international attempt to limit CO2 emission growth by aviation. This compromise is very disputed
- 5. Noise as a long established challenge is already very regulated. Topic still bears risk of restrictions for airlines but is currently less discussed than CO2
- 6. Taxes bear the risk of competitive disadvantages as no global alignment exists



Backup

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§ 289c Regulates Non-Financial Reporting in Germany

Handelsgesetzbuch § 289c Inhalt der nichtfinanziellen Erklärung

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- (1) In der nichtfinanziellen Erklärung im Sinne des § 289b ist das Geschäftsmodell der Kapitalgesellschaft kurz zu beschreiben.
- (2) Die nichtfinanzielle Erklärung bezieht sich darüber hinaus zumindest auf folgende Aspekte:
 - 1. Umweltbelange, wobei sich die Angaben beispielsweise auf Treibhausgasemissionen, den Wasserverbrauch, die Luftverschmutzung, die Nutzung von erneuerbaren und nicht erneuerbaren Energien oder den Schutz der biologischen Vielfalt beziehen können,
 - Arbeitnehmerbelange, wobei sich die Angaben beispielsweise auf die Maßnahmen, die zur Gewährleistung der Geschlechtergleichstellung ergriffen wurden, die Arbeitsbedingungen, die Umsetzung der grundlegenden Übereinkommen der Internationalen Arbeitsorganisation, die Achtung der Rechte der Arbeitnehmerinnen und Arbeitnehmer, informiert und konsultiert zu werden, den sozialen Dialog, die Achtung der Rechte der Gewerkschaften, den Gesundheitsschutz oder die Sicherheit am Arbeitsplatz beziehen können,
 - 3. Sozialbelange, wobei sich die Angaben beispielsweise auf den Dialog auf kommunaler oder regionaler Ebene oder auf die zur Sicherstellung des Schutzes und der Entwicklung lokaler Gemeinschaften ergriffenen Maßnahmen beziehen können,
 - 4. die Achtung der Menschenrechte, wobei sich die Angaben beispielsweise auf die Vermeidung von Menschenrechtsverletzungen beziehen können, und
 - 5. die Bekämpfung von Korruption und Bestechung, wobei sich die Angaben beispielsweise auf die bestehenden Instrumente zur Bekämpfung von Korruption und Bestechung beziehen können.

(3)Zu den in Absatz 2 genannten Aspekten sind in der nichtfinanziellen Erklärung jeweils diejenigen Angaben zu machen, die für das Verständnis des Geschäftsverlaufs, des Geschäftsergebnisses, der Lage der Kapitalgesellschaft sowie der Auswirkungen ihrer Tätigkeit auf die in Absatz 2 genannten Aspekte erforderlich sind, einschließlich

- 1. einer Beschreibung der von der Kapitalgesellschaft verfolgten Konzepte, einschließlich der von der Kapitalgesellschaft angewandten Due-Diligence-Prozesse,
- 2. der Ergebnisse der Konzepte nach Nummer 1,
- der wesentlichen Risiken, die mit der eigenen Geschäftstätigkeit der Kapitalgesellschaft verknüpft sind und die sehr wahrscheinlich schwerwiegende negative Auswirkungen auf die in Absatz 2 genannten Aspekte haben oder haben werden, sowie die Handhabung dieser Risiken durch die Kapitalgesellschaft,
- 4. der wesentlichen Risiken, die mit den Geschäftsbeziehungen der Kapitalgesellschaft, ihren Produkten und Dienstleistungen verknüpft sind und die sehr wahrscheinlich schwerwiegende negative Auswirkungen auf die in Absatz 2 genannten Aspekte haben oder haben werden, soweit die Angaben von Bedeutung sind und die Berichterstattung über diese Risiken verhältnismäßig ist, sowie die Handhabung dieser Risiken durch die Kapitalgesellschaft,
- 5. der bedeutsamsten nichtfinanziellen Leistungsindikatoren, die für die Geschäftstätigkeit der Kapitalgesellschaft von Bedeutung sind,

6. soweit es für das Verständnis erforderlich ist, Hinweisen auf im Jahresabschluss ausgewiesene Beträge und zusätzliche Erläuterungen dazu. (4)Wenn die Kapitalgesellschaft in Bezug auf einen oder mehrere der in Absatz 2 genannten Aspekte kein Konzept verfolgt, hat sie dies anstelle der auf den jeweiligen Aspekt bezogenen Angaben nach Absatz 3 Nummer 1 und 2 in der nichtfinanziellen Erklärung klar und begründet zu erläutern.

Source: https://www.gesetze-im-internet.de/hgb/__289c.html

Overview on EU ETS – since 2012 European Aviation is part of it



Key features	Phase 1 (2005–2007)	Phase 2 (2008–2012)	Phase 3 (2013–2020)
Geography	EU27	EU27 + Norway, Iceland, Liechtenstein	EU27 + Norway, Iceland, Liechtenstein Croatia from 1.1.2013 (aviation from 1.1.2014)
Sectors	Power stations and other combustion plants ≥20MW Oil refineries Coke ovens Iron and steel plants Cement clinker Glass Lime Bricks Ceramics Pulp Paper and board	Same as phase 1 plus Aviation (from 2012)	Same as phase 1 plus Aluminium Petrochemicals Aviation from 1.1.2014 Ammonia Nitric, adipic and glyoxylic acid production CO2 capture, transport in pipelines and geological storage of CO2
GHGs	CO2	CO2, N2O emissions via opt-in	CO2, N2O, PFC from aluminium production
Cap	2058 million tCO2	1859 million tCO2	2084 million tCO2 in 2013, decreasing in a linear way by 38 million tCO2 per year
Eligible trading units	EUAs	EUAs, CERs, ERUs Not eligible: Credits from forestry, and large hydropower projects.	EUAs, CERs, ERUs Not eligible: CERs and ERUs from forestry, HFC, N2O or large hydropower projects. Note: CERs from projects registered after 2012 must be from Least Developed Countries

Source: https://ec.europa.eu/clima/sites/clima/files/docs/ets_handbook_en.pdf

CORSIA is the ICAO CO₂ offset Programme for international Aviation



- **2016**: ICAO adopted the Carbon Offsetting and Reduction Scheme (**CORSIA**) to address CO₂ emissions from international aviation with the goal of carbon neutral growth from 2020
- CORSIA have been adopted as an Annex to the Chicago Convention, which all of ICAO's 192 member states must apply starting from 1 January 2019
- All operators with annual emissions greater than 10,000 tons of CO₂ are required to report their emissions on an annual basis, with monitoring starting from 1 January 2019
- Offsetting requirements starting in 2021: Operators will have to demonstrate that they have met their offsetting requirements by cancelling the appropriate number of emission units



Legal Framework (ICAO) on the Balanced Approach

ICAO:

1968 Assembly Resolution A16-3: Aircraft noise in the vicinity of airports 2001 Assembly Resolution A33-7, Appendix C (mandatory!) 2007 Assembly Resolution A36-22, Appendix C 2008 Doc 9829: Guidance on the Balanced Approach to Aircraft Noise Management 2011 Annex 16, Vol. I, Part III, IV, V: Standards and Recommended Practices on noise around airports



OF APPLIED SCIENCES

Source: ICAO - CORSIA

Objectives (BA) and Procedure to Define the Optimal Measures



Basic Principle

Can be achieved by adopting a flexible, consistent and transparent process when assessing noise objectives and alleviation measures, including:

- Airport by airport approach
- Use of objective and measurable criteria
- Consultation with stakeholders (collaborative approach)
- Timely and adequate notification of decisions
- Planning reliability

Process for Noise Issue Management:

Process Owner: relevant local authority (FAA, HMWEVW)

- 1. Prove of a/c noise problem
- 2. Assessment of the current and future noise impacts
- 3. Evaluation of costs and benefits
- Selection of measures (environmental benefit + costeffectiveness)
- 5. Analysis and selection of measure interrelationship
- 6. Achieve transparency of evaluated measures
- Consultation with stakeholders (operators that use the airport)
- 8. Provision for dispute resolution

Balanced Approach (BA) – Legal Framework in Europe



Europe:

Directive 2002/30: On the establishment of rules and procedures with regard to the introduction of noiserelated operational restrictions at Community airports Including flight restriction on marginal Chapter 3 a/c (-5 dB cumulative)

Airport Package (2011-2013) revision agreed 2014:

On the establishment of rules and procedures with regard to the introduction of noise-related operating restrictions at European airports within the Balanced Approach

Including flight restriction on marginal Chapter 3 a/c (-8/-10 dB cumulative) **Directive on Environmental Noise** (Directive 2002/49/EC 2002)

Target: information for the public about noise exposure and its effects

Responsibility: competent authorities in Member States

➤To produce strategic noise maps on the basis of harmonized indicators

> To draw up action plans to address noise issues

The Directive has been **transformed into German national law** and is part of the **BImSchG** (Bundesimmissionsschutzgesetz),

BImSchG is linked to the German Aircraft Noise Act (*FLG*) where respective regulations for air transport have been established

Luftverkehrs-Zulassungs-Ordnung (LuftVZO) Art. 1, § 48 Aircraft Noise Act Fluglärmgesetz (Gesetz zum Schutz gegen Fluglärm, 2007; revised in 2018)

Aircraft Noise Protection Act (FLG) (2007) in Germany



Goal:

Limit and restrict the building of housing areas in the vicinity of airports and ensure noise protection and define the protection measures for existing houses.

Method:

Definition of noise limits and noise contour around airports inside which ..

- owners receive compensation (noise insulation and financial)
- building bans are effective Including detailed regulations that define ..
 - the method to calculate noise contours (2008)
 - insulation measures
 - compensation payment for garden areas

Basic ideas behind the zones:

- Differentiate between existing and new/extended airport due to different annoyance situations.
- 2. Protection zone1 and night zone have building bans and airport is responsible for insulation of existing buildings. In zone2 building is allowed but with certain insulation obligation for the house owner.
- 3. Night zone with single event criteria wake up reaction
- 4. The basic ideas had been developed by a group of scientific experts

New or extended airports:

- day protection zone 1: Leq= 60 dB (A)
- day protection zone 2: Leq= 55 dB(A)
- night protection zone: Leq= 50 db(A); Lamax= 6x53 dB(A)

Existing airports:

- day protection zone 1: Leq= 65 dB (A)
- day protection zone 2: Leq= 60 dB(A)
- night protection zone: Leq= 55 db(A); Lamax= 6x57 dB(A)

Standardized procedure to measure aircraft noise





Quelle: UN-Luftfahrtorganisation (ICAO)