

**SAS SUSTAINABILITY REPORT  
NOVEMBER 2016–OCTOBER 2017**

# TRAVELERS ARE THE FUTURE



***SAS***

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# WE ARE SAS

SAS is the destinations we serve, the aircraft we fly, and the tickets we sell. But most importantly it is the people who choose to be a part of SAS. The employees, suppliers, partners and passengers who create a more sustainable SAS journey every day.

Some of us are new, while others have decades of experience. We are younger and older, work with our minds and our hands. With different skills and different capabilities.

We are people who have every background imaginable, who want our lives to arrive at many different destinations. What unites us is that at SAS we have embarked on a journey where we believe that by making the world smaller, humankind grows larger.



**2.7%**

REDUCTION IN  
CO<sub>2</sub> EMISSION PER  
PASSENGER KILOMETER  
SINCE 2016/2017

**22+**

YEARS OF  
SUSTAINABILITY  
REPORTING

**B**

2017 RESULT IN CDP

**12.1%**

REDUCTION IN CO<sub>2</sub>  
PER PASSENGER  
KILOMETER SINCE 2010

**5.9%**

SICK LEAVE  
IN 2016/2017

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## ABOUT THIS SUSTAINABILITY REPORT

This is the 22nd SAS Sustainability Report, which has been subject to third-party review since 1997. This Sustainability Report describes SAS's most essential environmental and societal aspects during the 2016/2017 fiscal year.

The Annual Report with sustainability review and the separate Sustainability Report have been prepared in accordance with the GRI Standards: Core option. The UN Global Compact, UN Sustainability Development Goals, ISO 14001 and the CDP were also taken into consideration in the preparation of this Sustainability Report.

The entire report has been reviewed by PwC.

The SAS Annual Report with a sustainability review and the separate Sustainability Report for the 2015/2016 fiscal year were published in February 2017.

## Readers' guide to this Sustainability Report

- The GRI Standards and reporting principles have been used to identify the content and topic boundaries of this report. The reporting principles are: Stakeholder Inclusiveness, Sustainability Context, Materiality, and Completeness.
- It is advisable to read the SAS Annual Report for an introduction to the SAS Group.
- The SAS Group is referred to as SAS in this Sustainability Report.
- In the 2016/2017 fiscal year (2016/2017), SAS consisted of Scandinavian Airlines, SAS Cargo Group A/S and SAS Ground Handling. Scandinavian Airlines has its own Air Operator Certificate, AOC. The head office is located in Stockholm, Sweden.
- The fiscal year is from November 1 through October 31.
- The KPIs reported in this Sustainability Report generally cover (unless specifically stated):
  - Financial KPIs: SAS
  - Environmental KPIs: flight-related; flights flown under the SK flight number.
  - Ground related: SAS
  - Social KPIs: SAS

## External review: Material sustainability information and EU-ETS

All material sustainability information in the Annual and Sustainability Reports for 2016/2017 has been reviewed by PwC. The Auditor's assurance report on the Sustainability Report can be found on page 25.

PwC has verified the systems and reports regarding the EU trading scheme for emission allowances for flights under the SK flight number.

# SAS IN SUMMARY

In 2016/2017, SAS consisted of Scandinavian Airlines, SAS Cargo Group A/S and SAS Ground Handling. Scandinavian Airlines has its own Air Operator Certificate, AOC. The head office is located in Stockholm where all commercial, operational functions and staff units, such as purchasing, finance, legal, sustainability, etc. are centralized.

## WHAT WE DO

SAS offers fast and efficient passenger and freight air transports over long distances to, from and within Scandinavia with the least possible environmental impact. In collaboration with other airlines in Star Alliance, SAS offers its services to an extensive global network. SAS conducted approximately 309,000 flights transporting 30 million passengers and 126,000 tonnes cargo in 2016/2017. All flights were operated under SK flight numbers with aircraft and crew managed by Scandinavian Airlines, and also by wet-lease operators with internal and external suppliers. SAS home bases in Scandinavia are Copenhagen Kastrup, Oslo Gardermoen and Stockholm Arlanda.

## SAS fleet

The fleet consisted at year-end of 158 aircraft. Scandinavian Airlines used 16 long-haul aircraft and 109 short-haul aircraft, and the wet-lease operators had 33 short-haul aircraft dedicated to SAS.

## SAS Cargo

SAS Cargo Group A/S (SCG) offers freight capacity on all SAS flights and on dedicated truck operations. The actual handling of freight and mail is carried out through contractual agreements with ground handling agents worldwide. SAS Cargo includes Trust Forwarding, an independent full-service provider of global freight forwarding services focusing on the Nordic market.

## SAS Technical Maintenance

SAS has its own technical line maintenance at its home bases and at Gothenburg Landvetter. The majority of work is conducted on Scandinavian Airlines aircraft but other external airlines are contracted. Heavy maintenance is contracted with external suppliers.

## SAS Ground Handling

SAS Ground Handling (SGH) operates at the home bases, as well as Gothenburg Landvetter and Malmö Sturup. Customers comprise passengers on all flights with an SK flight number, and SAS's partners and external customers. SGH's services include, for example, passenger and lounge services, loading and unloading, de-icing and towing aircraft. The majority of SGH's services are provided to flights with SK flight numbers.

## SUSTAINABILITY HIGHLIGHTS IN 2016/2017

- SAS's total tonne kilometer increased 9.4% and total CO<sub>2</sub> emissions increased 6.2%. The growth was primarily on long-haul flights.
- SAS's relative passenger-related CO<sub>2</sub> emissions decreased during the period to 96 grams (99) per passenger kilometer.
- SAS's relative cargo related CO<sub>2</sub> emissions fell during the period to 518 grams (522) per cargo tonne kilometer.
- SAS introduced 11 brand new aircraft.
- SAS achieved compliance with the EU-ETS regulations for 2016.
- Sick leave decreased to 5.9% (6.2).
- SAS used 100 tonnes alternative sustainable jet fuel on flights from Oslo and Bergen.
- The SAS Code of Conduct was updated with an upgraded mandatory e-learning training program for all employees.
- SAS supported the 'Christmas flight' for the 31st consecutive time.

## SUSTAINABILITY-RELATED KPIS<sup>1</sup>

	Nov-Oct 2016-2017	Nov-Oct 2015-2016	Nov-Oct 2014-2015
Revenue, MSEK	42,654	39,459	39,650
EBT before nonrecurring items, MSEK	1,951	939	1,174
EBIT margin, %	5.1	4.8	5.6
Number of passengers, millions <sup>2</sup>	30.0	29.0	26.9
Average number of employees <sup>3</sup>	10,324	10,710	11,288
of whom women, %	37	39	38
Sick leave, % <sup>4</sup>	5.9	6.2	7.0
Total number of occupational injuries	248	237	268
Climate index	88	91	92
CO <sub>2</sub> emissions, 000s tonnes	4,376	4,122	3,822
NO <sub>x</sub> emissions, 000s tonnes	18.6	17.8	16.3
CO <sub>2</sub> gram/passenger kilometer	96	99	101
Fuel consumption airline operations, 000s tonnes	1,389	1,309	1,213
Fuel consumption ground operations, 000s liters <sup>5</sup>	1,672	1,669	1,837
Water consumption, 000s m <sup>3</sup>	51	69	52
Energy consumption, ground, GWh	97	110	116
Unsorted waste, 000s tonnes <sup>6</sup>	0.2	0.2	0.2
Hazardous waste, 000s tonnes <sup>6</sup>	0.1	0.2	0.1
External environment-related costs, MSEK	1,413	842	549

1) Accounting policies on pages 20-21.

2) Scheduled traffic.

3) Source: Note 3 on page 72 in SAS Annual Report November 2016–October 2017.

4) New calculation method.

5) Includes only ground vehicle operations at SAS main bases: Stockholm, Oslo and Copenhagen.

6) Includes only ground facilities, including technical maintenance.



# LETTER FROM THE CEO

We close the page on an eventful year. A strong summer led to a significant improvement in earnings following a weak start to the year. Earnings were driven by increased revenue generated by the successful seasonal adjustments to the network, which boosted passenger numbers, and by implementing our promised efficiency measures.

It is pleasing to be able to present a significant increase in profitability of slightly more than SEK 1 billion and earnings before tax and nonrecurring items of almost SEK 2 billion. The improvements were driven by increased revenue as more travelers than ever are choosing to fly with SAS and by the positive effects of the efficiency program. I would like to thank the employees at SAS and our partners for an intense year of work that has delivered results. This inspires us to continue the work with change to further strengthen competitiveness through product investments and efficiency measures.

Even if we are pleased that the increase in earnings led to SAS creating shareholder value during the year, we cannot rest on our laurels. Our operating environment is changeable and we have noted that the increase in total market capacity is again accelerating, in parallel with the continued trend of declining unit revenue and willingness to pay for air travel. Moreover, a new aviation tax is expected to be introduced in Sweden from April 1, 2018. To meet the above, we are working on three focus areas:

1. Achieving SEK 3 billion in efficiency gains in core operations by 2020
2. Establishing complementary bases in London and Malaga
3. Capitalizing on SAS's strong brand and more than 5 million EuroBonus members.

Read more about SAS strategies and efficiency measures in SAS Annual Report 2016/2017.

## MORE SUSTAINABLE AVIATION

At the same time as we endeavor to increase SAS's competitiveness, we are well aware that the aviation industry must become even more sustainable. SAS takes its sustainability responsibility very seriously.

During the year, absence due to sickness decreased and work on reducing lost time accidents continued. In connection with the establishment of bases outside Scandinavia, SAS naturally applies the same policy for its own employees as those of SAS's subcontractors. SAS requires that employees have decent market terms of employment where they are based and are free to join trade unions.

The long-term reduction of greenhouse gas emissions is a priority and, in the short-term, we aim to reduce CO<sub>2</sub> emissions by 20% per passenger kilometer by 2020 compared with 2010. At year-end, the reduction was 12.1% and compared with the previous fiscal year the reduction was 2.7%. Ongoing fleet renewal with the introduction of 11 new A320neos and continuous efficiency enhancement contributed to the improvement. During the fiscal year, 100 tonnes of biofuels was used on flights from



Oslo and Bergen. Moreover, we are also striving to create possibilities for our customers to fly with significantly lower CO<sub>2</sub> emissions by offering them the option of upgrading the fuel used for their flight to biofuel.

The airline industry is in the midst of extensive change efforts and society needs to pull together to create the preconditions for accelerating the necessary transition. The introduction of national aviation taxes that do not differentiate based on the scope of the emissions and for which the revenues generated are not used for environmental improvements is the wrong way forward. It would be different if the revenue was going to be used to support the airline industry's transition to sustainable travel, for example, by increasing the production of biofuel. These type of aviation taxes worsen the preconditions for investing in new technology and biofuel, which both contribute to materially decreasing climate-changing emissions.

Aviation needs long-term and predictable controls in order to continue to develop toward ever lower climate-changing emissions.

Stockholm, January 29, 2018

Rickard Gustafson  
President and CEO

# HOW WE CREATE VALUE

## OUR RESOURCES

### SOCIETAL AND RELATIONSHIP CAPITAL

**30 MILLION PASSENGERS** and relationships with customers, suppliers, partners and decision-makers, as well as SAS's extensive community with 140 million website hits annually and 1.2 million followers on Facebook.

### INTANGIBLE CAPITAL

**5.1 MILLION MEMBERS** in the EuroBonus program, over 800 slot pairs daily and a strong SAS brand.

### HUMAN CAPITAL

**10,324 FTES**, of which 39% are flight crew, 39% ground personnel, 10% technical staff and 12% management personnel with extensive experience and highly developed skills.

### MANUFACTURED CAPITAL

**158 AIRCRAFT** with a market value of about SEK 33 billion, a number of properties, vehicles, machines, tools and equipment, such as lounges and self-service terminals.

### FINANCIAL CAPITAL

**SEK 25 BILLION** in capital invested by shareholders, lenders and lessors.

### NATURAL CAPITAL

**1,389 KTONNES OF JET FUEL**, of which 100 ktonnes is biofuel for flight operations, as well as other raw materials, energy consumption, and food and drink for passengers and personnel.

## OPERATIONS AND BUSINESS MODEL

### VISION

**TO MAKE LIFE EASIER FOR SCANDINAVIA'S FREQUENT TRAVELERS.**

### WHAT WE DO

SAS makes life easier for people who travel frequently to, from, and within Scandinavia by offering smooth, attractively priced flights for those traveling on business and those traveling privately.

### HOW WE DO IT

Our offering is built on a broad network with frequent departures to, from and within Scandinavia. We have an attractive product with a high degree of freedom of choice, designed for business and leisure travel. We reward our customers for their loyalty through our EuroBonus program.

Our travel and cargo services are built on a production model in which SAS produces traffic on larger traffic flows with a uniform aircraft fleet, while smaller flows and regional traffic are flown via business partners. Aircraft operations are supported by efficient ground handling services, technical aircraft maintenance and sales organizations together with an attractive product.



## WHAT WE CREATE

**30**  
million journeys

**272**  
routes

**817**  
daily departures

**126**  
million kg of  
transported goods

**123**  
destinations and  
1,300 via Star Alliance

## VALUE FOR SHAREHOLDERS

- Net income for the year of MSEK 1,149
- Market capitalization of SEK 8.5 billion<sup>1</sup>
- MSEK 350 in preference share dividends

**13**  
ROIC, %

## VALUE FOR OTHER STAKEHOLDERS

### CUSTOMERS

- Smooth & attractively priced travel that makes life simpler
- New experiences, relationships and personal development
- Making dreams a reality

**72**

Customer Satisfaction Index (CSI)

### EMPLOYEES

- Job opportunities
- Personal & professional development
- Salary and benefits

**57**

Employee commitment index

### FINANCIAL BACKERS & SUPPLIERS

- Supplier payments of about SEK 36 billion
- Interest expense of MSEK 480
- Lease expense for aircraft of MSEK 3,116

**B+/B1**

SAS's credit rating<sup>2</sup>

### SOCIETY

- Infrastructure that enables trade, new companies, import/export, tourism, cultural exchange and regional development
- Scandinavian community
- Tax income & job opportunities

**~1%**

of GDP in Scandinavia<sup>3</sup>

### ENVIRONMENT

- Increased production with more fuel-efficient aircraft, with a lower climate impact and reduced noise.

**96**

grams CO<sub>2</sub> emissions per passenger kilometer

<sup>1</sup>) Common shares

<sup>2</sup>) Credit rating: Standard & Poor's B, Moody's B1 as of November 2017.

<sup>3</sup>) Cowi, Inregia, tvi and WSP.

# FOCUS ON CLIMATE ACTION

Based on SAS's materiality analysis the work on reducing greenhouse gas emissions is the most material. Aircraft operations using non-renewable jet fuel account for the vast majority of SAS's greenhouse gas emissions. Hence, SAS's focus on increased energy efficiency and transition to renewable energy sources in its aircraft operations is prioritized in the ISO 14001-certified environmental management system.



## SAS ENVIRONMENTAL VISION AND GOALS 2020

SAS's vision is to be a part of the future long-term sustainable society and as a short-term foundation SAS has set goals to:

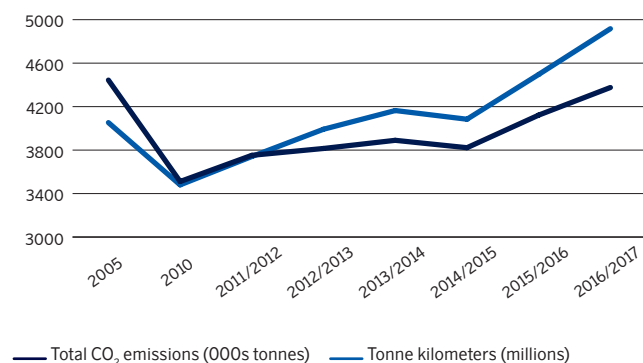
- Reduce flight CO<sub>2</sub> emissions per passenger kilometer by 20% in 2020 compared with 2010.
- Reduce noise emissions at take-off by 15% in 2020 compared with 2010.
- Regularly use JET-A1 based on renewable sources.

Goals toward 2030 will be developed and decided during 2017/2018.

## DEVELOPMENT IN 2016/2017

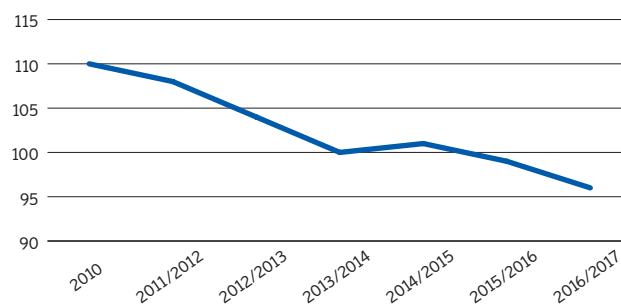
In 2016/2017, SAS's total CO<sub>2</sub> emissions from aircraft operations increased 6.2% compared with 2015/2016, while the total production measured in tonne kilometer increased 9.6%. The growth primarily pertained to increased demand on longer flights. Looking at single years, SAS's total CO<sub>2</sub> emissions may increase but compared with 2005 the total CO<sub>2</sub> emissions has been reduced by 1.5% and the production measured in tonne kilometer increased by 21.3%.

## SAS FLIGHT OPERATIONS TOTAL CO<sub>2</sub> EMISSIONS AND TONNE KMS



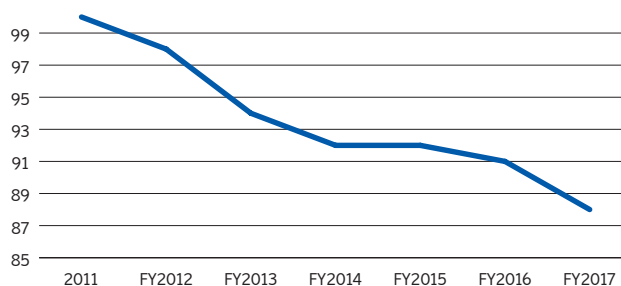
SAS CO<sub>2</sub> emissions per passenger kilometer decreased to 96 grams (99) compared with 2015/2016, corresponding to a 2.7% improvement. Compared to 2010 the reduction is 12.1%. Noise emission at take-off was reduced by 11.1% and SAS used 100 tonnes renewable jet fuel during 2016/2017.

## SAS FLIGHT OPERATIONS CO<sub>2</sub> GRAM/PASSENGER KILOMETER



SAS climate index improved to 88 (91) at years-end compared with the base year 2011.

## SAS FLIGHT OPERATIONS CLIMATE INDEX



The following observations were made in an analysis of SAS's total CO<sub>2</sub> emissions in 2016/2017:

- All flights shorter than 500km: 14%, flight between 500 and 800 km: 10%, flights between 800 and 3,000 km: 34%, and flights longer than 3,000 km: 42%
- Domestic flights: 17% and the remainder are international flights
- Swedish domestic flights shorter than 500 km (excl. Gotland): 3.0%



## SAS FLIGHT OPERATIONS CO<sub>2</sub> EMISSIONS 2017 FISCAL YEAR

	1,000s tonnes CO <sub>2</sub>
<b>Denmark</b>	
Domestic flights	34
Flights to EU/EEA	394
Flight to outside EU/EEA	576
<b>Norway</b>	
Domestic flights	482
Flights to EU/EEA	314
Flight to outside EU/EEA	89
<b>Sweden</b>	
Domestic flights	247
Flights to EU/EEA	367
Flight to outside EU/EEA	242
<b>Finland</b>	
Domestic flights	0,6
Flights to EU/EEA	39
Flight to outside EU/EEA	-
<b>EU/EEA</b>	
Departing EU/EEA1 for Scandinavia and Finland	746
Flights within EU/EEA <sup>1</sup>	0,8
Departing EU/EEA1 for outside EU/EEA	0,02
<b>Outside EU/EEA</b>	
Departing from outside EU/EEA bound for Scandinavia/Finland	846
Departing from outside EU/EEA bound for EU/EEA1 or outside EU/EEA	0,6
<b>Total</b>	<b>4 376</b>

1) Excluding Denmark, Sweden, Norway and Finland that are reported separately.

## AVIATION INDUSTRY MOVING TOWARD ZERO EMISSIONS

SAS fully supports the IATA's ambition that, by 2050, it will be possible to fly commercially without material climate impact.

Toward 2050, the IATA and other areas of the airline industry have agreed on joint targets of:

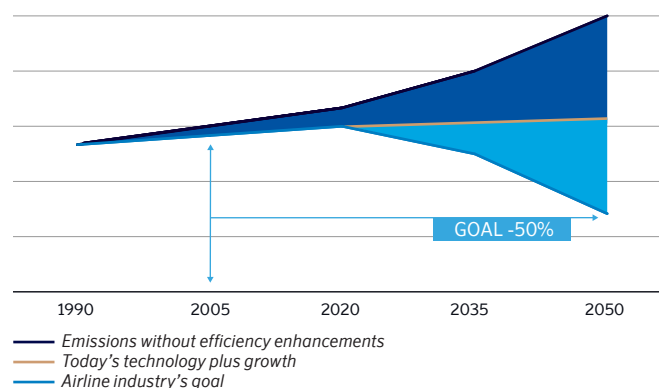
- Improved fuel efficiency by an average of 1.5% annually from 2009 to 2020
- Carbon-neutral growth from 2020
- 50% reduction in greenhouse CO<sub>2</sub> emissions by 2050, compared with 2005 levels

Source: [www.enviro.aero](http://www.enviro.aero)

The target is to be realized through a combination of new technology, more efficient air traffic management, biofuels, new energy sources and coordinated actions to improve the infrastructure and the conditions under which air transport operates.

Looking specifically at SAS, its fuel efficiency has improved approximately 2% annually since 2010. SAS is fully committed to reach the goals set in the industry and intends to reduce the emissions even further.

## THE GLOBAL AIRLINE INDUSTRY'S 2050 ENVIRONMENTAL GOALS



## SAS WORK TOWARD LOWER EMISSIONS

The work on the necessary improvement measures to achieve the long- and short term goals are a natural, integrated part of the SAS environmental management system certified according to ISO 14001.

SAS has an environmental program on par with leading industry competitors that attracts employees, customers, and investors and is perceived to be positive by other stakeholders. The environmental program covers the entire company and all relevant processes.

The activities in SAS's environmental program are coordinated and integrated with production, quality and financial activities and will comply with applicable legislation and other requirements. The prerequisites for all activities are that they are well within the limits of applicable legal requirements and flight safety limits, etc. The activities are based on continuous improvement, with reference to SAS's overall environmental goals.

The environmental program covers (but is not limited to) the following areas:

- Fleet renewal
- More efficient planning of SAS aircraft
- More efficient usage of SAS aircraft in day-to-day operations
- Continuous aerodynamic, weight and efficiency follow-up and modification of SAS aircraft
- Environmentally adapted products
- Alternative sustainable jet fuels
- Stakeholder dialog/work with air traffic management, airports, wet-lease operators, aircraft and engine manufacturers

## FLEET RENEWAL

At year-end, SAS used 158 aircraft (16 long-haul aircraft and 109 short-haul aircraft) flown by Scandinavian Airlines and 33 aircraft flown by wet-lease operators. The average age of the whole aircraft fleet was 10.4 years at year-end. Scandinavian Airlines renewed its fleet by introducing 11 new Airbus A320neos from the firm order of 30 aircraft. Simultaneously, a number of older aircraft were phased out during 2016/2017. The A320neo has proved to be effective as expected with 15-18% lower fuel consumption compared with an A320ceo. SAS will introduce a number of A320neos in 2017/2018. In January 2018 SAS announced that a additional order of A320neo is under negotiation. The order aims to replace older short-aircraft in the fleet. In 2019, delivery of SAS first A350 is planned. It will replace older long-haul aircraft currently used.





The majority of aircraft used by SAS wet-lease operators are brand new. By the end of next year all older regional jets will be replaced by brand new aircraft of the same type.

#### **MORE EFFICIENT PLANNING OF SAS AIRCRAFT**

SAS has a network of destinations with varied passenger volumes and distances, which requires a fleet of aircraft of different sizes and range to make the offering efficient and attractive to business and leisure travelers. SAS's fleet ranges from 70 to 264 seats, capable of flying routes for which the aircraft is airborne for between 20 minutes and more than 11 hours. To be able to fly a typical short haul flight with seven different aircraft sizes (70-198 seats) provides extensive flexibility according to demand, which enables the possibility to reduce cost and the total emissions at any given time. Flying aircraft that are too large generates unnecessary emissions even if it generates a better theoretical result per available seat kilometer.

#### **MORE EFFICIENT USAGE OF SAS AIRCRAFT IN DAY-TO-DAY OPERATIONS**

SAS has an extensive long-term fuel saving program integrated in its operations. An important aspect of increasing the fuel efficiency is to make sure that all employees in SAS's airline operations have the prerequisites and knowledge to be fuel-efficient. This entails involvement of all employee groups that have an impact on fuel consumption. Key functions are those functions responsible for planning and all procedures, as well as the thousands of employees in SAS operations conducting the flights.

A large number of activities are constantly in progress, focusing primarily on established operational conditions, such as procedures and how they are implemented, and whether the available system support is sufficiently optimized for improved fuel efficiency. Naturally, all changes maintain a standard that meets the highest level of flight safety requirements. It is important to recognize that increased fuel efficiency and the reduced fuel cost must be balanced against other operational costs, such as maintenance costs and charges for using airspace.

#### **CONTINUOUS AERODYNAMIC, WEIGHT AND EFFICIENCY FOLLOW-UP AND MODIFICATION OF SAS AIRCRAFT**

SAS continuously modifies its existing aircraft over time to modernize to more advanced technology, improve aerodynamics or reduce weight. Examples of improved aerodynamics are sharklets/winglets which are generating improvements. Examples of weight reduction include installing lightweight seats on a number of aircraft. An example of better technology is the ongoing engine upgrade program under the framework of the ordinary technical maintenance of most of the Boeing 737NG fleet. In practice, this entails that the engines are upgraded to a later and more fuel efficient version than that originally delivered.

#### **ENVIRONMENTALLY ADAPTED PRODUCTS**

SAS strives to develop its customer offering in a more environmentally adapted direction. This includes everything from locally produced and/or organic food to less material and ultimately, less waste needing to be sorted wherever customers encounter SAS during the ground process, in the lounge or on board SAS aircraft. In 2016/2017, SAS upgraded its food concept and offers a larger amount of organic food and beverages on its flights and a number of organic items in its lounges. In connection with the development towards a more electronic-based communication, less paper is being used and the use of "green IT" is increasing. SAS also offers its customer the option of offsetting their CO<sub>2</sub> emissions at <http://www.sasgroup.net>. This offer will

be developed and also include the possibility to upgrade the fuel consumption used to biofuel.

#### **RENEWABLE ENERGY IN THE WINGS**

For the past decade, SAS has worked on various activities aimed at accelerating the development of alternative and sustainable jet fuels (biofuels). The development of biofuels based on one or more renewable sources in order to realize the airline industry's environmental objectives. Unlike most types of transportation, aviation has no real alternative to the liquid fuels that are currently used. There is also a need to secure access to liquid fuels as the supply of fossil alternatives is expected to decline and/or become more expensive. Developing alternatives that can reduce climate-impacting emissions, while also fulfilling the established sustainability criteria is of the utmost importance.

The principal sustainability criteria are that production shall be sustainable in the long-term and thus not compete with the production of foodstuffs or access to potable water, do not harm biodiversity and use as small an area of land as possible. According to the IATA, phasing in alternative fuels over time could enable a reduction in the air travel industry's CO<sub>2</sub> emissions by up to 80% throughout its life-cycle.

As of today, it is possible to use biofuels that are based on such renewable sources as camelina, jathropa, algae, animal oils, fats and various types of coal-based sources such as waste from industry, households, agriculture, forestry, paper mills and so forth. These two specifications allow up to a 50% blend with the traditional fossil fuels to ensure the high requirements related to engines, and fuel supply systems on aircraft and on the ground.

SAS is involved in a number national and international projects and forums, such as the IATA/ATAG biofuel network, SAFUG, NISA, FGF and various Scandinavian interest organizations working in the area.

SAS also supports the EU's Biofuel Flight Path, which aims to create the preconditions to produce two million tonnes of biofuels by 2020.

SAS continues to engage with various potential stakeholders to discuss producing biofuels in Scandinavia. During 2016/2017 SAS used 100 tonnes biofuel in its daily operations. SAS also continues to clearly indicate to existing and potential future producers of jet fuels that it is prepared to purchase more biofuel if the sustainability criteria are in place and the price is competitive.

#### **STAKEHOLDER DIALOG/WORK WITH AIR TRAFFIC MANAGEMENT, AIRPORTS, WET-LEASE SUPPLIERS, AIRCRAFT AND ENGINE MANUFACTURERS**

Since the early 2000s, SAS has been working with the parties responsible for air traffic control and airports in Sweden, Norway and Denmark in an effort to identify more efficient methods for controlling air traffic in the airspace and on the ground in these countries. SAS is currently involved in activities in Scandinavia that aim to demonstrate short-term potential environmental improvements under the framework of existing systems and methods. Throughout SAS's continuous environmental work, SAS maintains dialogs and discussions with relevant aircraft and engine manufacturers, and producers of interiors and other installations in the aircraft. Environmental performance and criterias are integrated in the decision-making process in which wet-lease operators and new aircraft are acquired for short and long-haul operations. An interesting development is concept aircraft that use electricity as energy source for at least one engine. SAS monitors and supports this development with great interest.

# A MORE SUSTAINABLE FLIGHT

Examples of SAS work towards lower greenhouse gas emissions.

## MORE EFFICIENT AERODYNAMICS

The majority of the aircraft used on longer distances have been equipped with winglets/sharklets. Depending on the distance, a reduction in fuel consumption and greenhouse gas emissions can be realized.

## RENEWAL OF THE AIRCRAFT FLEET CONTINUES

In 2016/2017, SAS introduced 11 brand-new A320neos, and a number of new ATR72s and CRJ900s were introduced by SAS's wet-lease operators. Over the same period, 20 older aircraft were taken out of service. Since its introduction in SAS, the A320neo has proved to be as efficient as expected, with a fuel reduction of up to 18–20% compared with the A320ceo.

## REDUCED ENGINE TAXI IN AND OUT

SAS's standard is to taxi between the gate and runway using one engine (two for Airbus A340s), known as Reduced Engine Taxi In/ Out. This saves fuel and greenhouse gas emissions.

## RENEWABLES IN THE WINGS

For decades, SAS has been working to accelerate the commercialization of bio-fuels. In 2016/2017, SAS used just over 100 tonnes of biofuel. Jet fuels based on renewable sources can realize a reduction of approximately 80% in climate-changing carbon emissions compared with fossil-based jet fuels.



### NEW INTERIORS

SAS has installed new interiors on all new aircraft introduced in 2016/2017 and on a growing number of existing short-haul aircraft. The interiors are characterized by a more modern feel, with better materials and lower weight. This lower weight enables fuel savings to be realized.

### NEW FOOD CONCEPT

In 2016/2017, SAS introduced an updated food concept. Important changes include better ingredients, healthier alternatives, reduced resource use and more efficient waste management.

### NEW TECHNOLOGY IN THE ENGINES

In the renewal of the aircraft fleet currently in progress, it is chiefly the engines that are contributing to positive developments. They consume less fuel and generate less noise. One clear visual difference is that the circumference of the engines has increased.

### DRY WASH

“Dry wash” for aircraft was implemented during the year. A dry wash uses less than 3% of the water consumed in a traditional wet wash. The detergent used in dry washes is biodegradable.

### WAITING FOR GATE & WAITING FOR GROUND POWER

Ground based electricity is used at gates to avoid using aircraft engines more than necessary. This is monitored and measures to identify procedure improvements to reduce air particles and emissions of greenhouse gases.

# SAS SUSTAINABILITY AGENDA

For SAS, sustainable development means continual improvements in the areas of climate and the environment, as well as taking charge of social responsibility. Sustainable development also assumes continuously striving for sustainable profitability and financial growth. As an employer, and a purchaser and producer of infrastructure, SAS has a significant societal impact. At the same time, the airline industry has a significant climate and environmental impact, chiefly from greenhouse gas emissions and airport noise. SAS's ambition is that the products and services offered will enable more sustainable societal development globally, with the smallest climate and environmental impact possible.

SAS has structured its sustainability work in a sustainability agenda divided by its financial-, environmental- and social responsibility. The agenda visualizes SAS sustainability initiatives and efforts with focus on CARE. The work is focused on minimizing sustainability-related risks and capturing potential opportunities.

## MATERIALITY

SAS has a defined process for continuously reviewing which topics are material. The process involves external and internal stakeholders and is based on international guidelines such as GRI, UN Global Compact, UN SDGs, trends, media, stakeholder dialog and its own judgments.

Based on a review of the last comprehensive materiality analysis conducted in 2016 the following topics are deemed to still be the most material for SAS and its stakeholders;

- Diversity and equality
- Work condition
- Business ethics and anti-corruption
- Sustainability in the supply chain
- Waste
- Greenhouse Gas emission
- Noise

With reference to SAS most material topics the following SDG's has a direct connection to SAS sustainability agenda: [5. Gender equality], [8. Decent work and economic growth], [12. Responsible consumption and production], and [13. Climate action].

Information about SAS most material topics are disclosed in SAS Annual Report 2016/2017 and this Sustainability Report with extra focus on greenhouse gas emissions or SDG [13. Climate action] since this topic is deemed as the most material topic for both SAS and its stakeholders. This does not mean that all other areas/aspects are immaterial or excluded from SAS's sustainability agenda.



## GOVERNANCE AND MANAGEMENT SYSTEM

The SAS governance model is disclosed on pages 50-56 in SAS Annual Report 2016/2017.

### BOARD OF DIRECTORS

SAS has a Board of Directors whose work is governed by the Swedish Companies Act, the Articles of Association, the Code of Conduct and the formal work plan adopted by the Board each year. The Board's work follows a plan intended to ensure that the Board receives all necessary information. At its meetings, the Board discussed the regular business items presented at the respective meetings, including business and market conditions, financial reporting and follow-up, and the company's financial position and investments. The Board also discussed any sustainability-related information of material importance.

### CODE OF CONDUCT

The Board of Directors has issued the Code of Conduct to summarize and to clarify SAS's stated priorities, promises, policies and other regulations. The Code applies for all employees regardless of employment. To underscore the Code's importance, an extensive training program supports the implementation of the Code and all personnel regularly participate in the program. The Code is available at <http://www.sasgroup.net>. There are also clear rules and structures for reporting and addressing suspected violations through the management system or a whistle-blower function. The Code's whistle-blower function was used in eleven cases. Two cases were dismissed without further action and nine led to some investigations and action.

### GROUP MANAGEMENT

The Board appoints the President of SAS AB, who is also Group CEO. The Board has delegated responsibility for the day-to-day management of company and Group operations to the President.

Group Management comprised seven members (two women and five men), including the President. Group Management normally has minuted meetings on a weekly basis. Group Management's governance and control of operations are based on a number of guidelines and policies regarding financial management and follow-up, communication issues, human resources, legal issues, the Group's brands, business ethics and environmental matters.

SAS Group Management decides on SAS strategies. The strategic focus areas are disclosed in SAS Annual Report on pages 12 to 27. Sustainability topics are integrated part of the strategies.

### ENVIRONMENT & CSR STAFF UNIT

As a strategic support and driving force, SAS has a central department for sustainability topics (Environment and CSR) that reports to senior management. The department's tasks include developing, driving and maintaining SAS's sustainability agenda and supporting management in sustainability-related matters, both internally and externally. The department also has responsibility for maintaining and developing fuel-saving activities, compliance with EU-ETS/MRV, ISO 14001 certification, coordination of biofuel activities and support for the organization in sustainability issues.

## SAS MANAGEMENT SYSTEM

SAS has approximately 430 managers at different levels in the organization. SAS has integrated sustainability in its management system. The system encompasses all activities at SAS and is based on airline operational standards, shared environmental and sustainability policies, the Code of Conduct, the UN Global Compact, UN Sustainability Development Goals, LEAN and ISO 14001. The system provides guidelines for a continuing cycle of planning, implementation and evaluation, as well as the improvement of processes and activities to meet operational and sustainability targets.

The basis for a sustainable business is to follow the applicable international and national legislation covering all aspects and parts of the organization. SAS aims to follow all applicable legal requirements and legislation. Examples are legal requirements connected to employment, financial obligations and environment. SAS has control mechanisms with allocated follow-up systems and resources in order to ensure compliance.

## MONITORING SUSTAINABILITY-RELATED DATA

SAS monitors relevant sustainability key performance indicators (KPI) on an ongoing basis. SAS use various parts of the LEAN methodology and follow-up of these KPIs are conducted within the management system and reported weekly, monthly, quarterly or annually according to specific needs.

As preparation for external sustainability reporting, there are data collection processes in the management system covering all areas of SAS's sustainability agenda

## SUSTAINABILITY-RELATED BUSINESS OPPORTUNITIES AND RISKS

SAS has a precautionary approach and the work is focused on minimizing sustainability-related risks and capturing potential opportunities. The risks and opportunities are assessed and strategically handled within the management system and are integrated with SAS's comprehensive risk management. A summary of SAS work with risk management is disclosed on page 19 in this Sustainability Report and a comprehensive description is disclosed on pages 42-47 in SAS Annual Report 2016/2017. SAS also disclose to CDP regarding its opportunities and risk connected to climate change. The detailed disclosure is available on <http://www.cdp.net>.

In general, it can be concluded that risks are reduced – and, indeed, certain opportunities offer tangible business potential – by having a proactive and effective sustainability approach. An example is SAS' work with its environmental impact in the certified environmental management system. The system provides SAS with operational control and capacity to deal rapidly with changing requirements in the business environment.

## VISION, STRATEGIES AND GOALS

### ENVIRONMENTAL VISION

SAS intends to be a part of the future long-term sustainable society and support IATA's ambition that, by 2050, it will be possible to fly commercially without material climate impact.

### SUSTAINABLE DEVELOPMENT STRATEGIES

SAS aims to:

- create a culture among its employees based on strategic decisions and a commitment to environmental work.
- use documented sustainability appraisals as a basis for all decisions.

- engage in strategic sustainability communication with relevant stakeholders.
- promote tomorrow's solutions through alliances and proactive demands for better sustainability performance from our suppliers and stakeholders.

The focus is to minimize sustainability-related risks and capture potential opportunities to avoid unnecessary costs, as well as to capture potential savings and differentiate SAS.

Through its commitment, documented activities and results SAS wants to be perceived as a company that takes CARE of its customers, employees, the environment and society at large.

## ENVIRONMENTAL GOALS

Goals and goals attainment are disclosed on page 7.

## STAKEHOLDER DIALOG

SAS has a long tradition of continuous dialog and cooperation with a wide range of stakeholders and involvement in sustainability-related issues. SAS applies a principle that all stakeholders seeking contact with SAS are offered the opportunity of a dialog with the company.

An illustration with examples of stakeholder groups engaged by SAS is disclosed at <http://www.sasgroup.net>.

Over the past few years, sustainability issues have gained greater importance for SAS stakeholders, primarily in the public administration and business sector. The number of sustainability-related questionnaires from corporate customers and requests from on-site audits has increased over the years. From a sustainability perspective, SAS prioritizes cooperation and collaboration with customers, authorities and suppliers in order to create the prerequisites for develop solutions to improve SAS's or the aviation industry's sustainability performance. Examples are development of air navigation services and efforts to accelerated commercialization of biofuels.

SAS also prioritizes dialog with parties that seek knowledge, drive change or support SAS in different ways, for instance, employees, partners, experts, NGOs, researchers, the media, etc.

Examples of key topics and concerns raised range from corporate customers, investors and shareholders are issues connected to SAS's product responsibility, anti-corruption, greenhouse gas emissions, working conditions etc. NGO's and media often address issues connected to aviation's impact as an enabler for globalization or different views on SAS's environmental performance. Schools and educational institutions most often seek deepened knowledge in SAS goals and strategies connected to the work towards lower greenhouse gas emissions.

SAS sees the stakeholder dialog as an opportunity to initiate further dialog about these relevant topics and input to future development of the customer offerings and SAS sustainability agenda.

The media attention on aviation's environmental impact is a challenge for the entire airline industry. SAS has chosen to take a leading role in the debate.

As an effort to create greater understanding of the terms and conditions for the aviation industry, SAS also participates in various industry or employee organizations.



## EXTERNAL INITIATIVES

SAS joined the Global Compact in 2003 and participates in the Global Compact's Nordic Network. One criterion for publishing company information on the Global Compact website is an annual update of materials – the Communication On Progress (COP). The most recent update of SAS information was completed in May 2017. The UN Global Compact is a pivotal component of the SAS Code of Conduct and the requirements imposed on the company's suppliers.

SAS has also chosen to use the UN Sustainability Development Goals (SDG) as a tool to structure its strategic sustainability work in the sustainability agenda

## EXAMPLES OF ORGANIZATIONS RELATED TO SUSTAINABILITY ISSUES WHERE SAS IS A MEMBER

- SAS is member in Star Alliance, the world's largest airline network.
- SAS participates in the three national industry organizations: NHO Luftfart in Norway; Föreningen Svenskt Flyg in Sweden; and Dansk Industri in Denmark.
- SAS is a member of the IATA and a member of the IATA's Environmental Committee.
- SAS is active in the Nordic working group for environmental issues in aviation (N-ALM).
- SAS is a member of the Nordic initiative Sustainable Aviation.

## SUPPLY CHAIN MANAGEMENT

SAS has approximately 6,000 suppliers providing the products and services SAS needs to compile the customer offerings. The supply chain focuses around aircraft operations and associated services. It encompasses, for example:

- aircraft and engine manufacturers
- airport and air navigation service providers
- fuel suppliers
- catering suppliers
- IT suppliers
- technical maintenance suppliers
- wet-lease operators
- financial services

The suppliers are primarily situated in connection to the geographical area where SAS routes are flown.

As the airline industry changes and SAS's operational model develops, the dependency of external suppliers increases in all parts of the business. This applies to operational areas such as ground handling and wet lease as well as administrative functions such as customer service and accounting. SAS continuously reviews supplier specifications and identifies the most critical suppliers. In connection with this, work is also being carried out to consolidate the supplier base which in 2016/2017, contributed to a 19% reduction in the number of suppliers.

SAS is responsible to its customers for ensuring that sustainability issues are addressed in a correct manner, regardless of who provided the product or service in the supply chain.

SAS has an established governance model that clarifies responsibilities, risks and improvement areas as well as how any deviations are handled. Responsibility for continuously following up the critical suppliers is centralized and standardized. All SAS suppliers are required to meet sustainability and social responsibility requirements, purchasing policy, and general terms and conditions in accordance with the UN Global Compact and other specific sustainability requirements.

The criteria depend on the type of product or service and where it is produced. For example, energy efficiency, waste handling, collective agreement (or equivalent), human rights, child labor, etc. This is reviewed and handled in the procurement phase and during the agreement period.

## FINANCIAL RESPONSIBILITY

Every corporation has a responsibility to ensure profitable business, comply with legal requirements and maintain a high standard of business ethics as well as ensuring compliance with national policies and laws on financial responsibility.

For SAS, persistent economic profitability is closely connected to environmental improvements and the ability to take social responsibility. In many ways, its work on sustainability issues serves to increase the value and competitiveness of the SAS, such as utilizing resources more efficiently and minimizing risk.

An analysis of SAS's statement of income reveals that major portions of revenue and expenses and essential industry specific earnings measurements are items relevant from an environmental and/or social perspective. In short, the highest possible financial return is generated by the best possible resource utilization and management of the company's assets, both human and financial. Optimal resource utilization means flying fuel-efficiently and making the most of capacity for carrying passengers and freight. Lower fuel consumption leads to lower fuel costs and at the same time reduces the charges the SAS pays for emissions. The same applies to all other activities that, in addition to environmental or social considerations, have strong financial incentives to reduce resource consumption or sick leave for example.

## PROFITABLE BUSINESS

All aspects of SAS work towards long term profitability are disclosed in SAS Annual Report 2016/2017.

## BUSINESS ETHICS AND ANTI-CORRUPTION

SAS management approach is to take active stance against, and avoid all forms of corruption and anti-competitive behavior.

SAS Code of Conduct, Legal Policy and SAS Anti-bribery Policy are applicable to everyone who act on behalf of SAS Group. SAS Board of Directors has the overall responsibility for implementing the Code of Conduct and monitor compliance towards it. Compliance is monitored throughout the management system and through internal audits. The purpose is to ensure effectiveness and suitability of the policies, its implementation and the ongoing compliance activities

During the year, SAS conducted a number of activities to prevent potential anti-corruption risks that may exist. Regulations relating to bribery and other improper actions are particularly strict. An example is the ongoing "Competition Law Compliance Program" which covers all entities within SAS.

The program addresses the most material risks connected to corruption and the employees that are exposed to the risks in their daily work. SAS also conducts control activities in order to ensure compliance toward applicable legislation and SAS Code of Conduct. The management system continuously evaluates the effectiveness and suitability of the ongoing activities.

No legal actions for anti-competitive behavior, anti-trust, or monopoly practices reported in 2016/2017.



## ENVIRONMENTAL RESPONSIBILITY

Aircraft operations often account for more than 95% of the total environmental impact of an airline, this also applies for SAS. Onground emissions derive from diesel/ petrol consumption, energy use in facilities, fuel and glycol spillages and waste. Based on a materiality analysis the vast majority of SAS's environmental impact comprises emissions from the consumption of non-renewable fuels. From a stakeholder perspective noise is also perceived as material.

SAS's environmental responsibility and management approach is to comply with relevant legislation and to minimize the absolute as well as relative greenhouse gas emissions and other environmental impacts.

SAS Environmental Policy is applicable for all products and services in SAS. Group Management is responsible for the policy. The policy, together with goals and strategies are reviewed annually at the ISO14001 management review in Group Management. Activities are followed-up within the management system and reported weekly, monthly, quarterly or annually according to specific needs.

Since 2010, SAS environmental management system is certified according to ISO14001 throughout the company. The environmental management system is continuously evaluated in order to ensure effectiveness and suitability of the system itself and the ongoing activities.

## ENVIRONMENTAL LEGAL COMPLIANCE

No severe incidents breaching any environmental permits were reported in 2016/2017.

## EMISSIONS DERIVED FROM JET FUEL CONSUMPTION

In 2016/2017, SAS's CO<sub>2</sub> emissions from aircraft operations increased 6.2% compared with 2015/2016, while the production measured in tonne kilometer increased 9.6%. The growth primarily pertained to increased demand on longer flights. Looking at single years, SAS's total CO<sub>2</sub> emissions may increase but compared with 2005, total CO<sub>2</sub> emissions have been reduced by 1.5% and the production measured in tonne kilometer increased by 21.3%. Reducing climate impact is a long term process and moving forward SAS is fully committed to achieving the goals set in the industry towards 2050 and intends to reduce its CO<sub>2</sub> emissions even further.

Read more about SAS work towards lower greenhouse gas emissions on pages 6 to 11.

## EMISSIONS DERIVED FROM DIESEL AND PETROL CONSUMPTION

SAS uses vehicles in conjunction with maintenance and ground-related services within airport perimeters. SAS follows the airports' regulations and strives to ensure a continuous transition to vehicles with lower environmental impact. At SAS main bases, all vehicles are leased and follow-ups are conducted via contracts and fuel bills.

No significant spillages were reported in conjunction with ground handling or technical maintenance.

SAS Cargo also monitors CO<sub>2</sub> emissions per cargo tonne kilometer from its trucking operation provided by sub-contracted ground transport.

## EMISSIONS DERIVED FROM ENERGY CONSUMPTION

Reduction of energy consumption is an ongoing project with continuous improvements. During 2016/2017, energy consumption decreased.

	Unit	2016/2017	2015/2016	Base year 2010
<b>Scope 1</b>				
<b>Flight Operations</b>				
CO <sub>2</sub> total	1,000 tonnes	4,376	4,122	3,511
CO <sub>2</sub> passenger share	1,000 tonnes	3,951	3,746	3,244
Nox	1,000 tonnes	18.6	17.8	14.3
HC	1,000 tonnes	0.46	0.56	-
Passenger kilometers	million	40,960	37,771	29,572
Tonne kilometer	million	4,917	4,496	3,480
Departures 1,000	1,000	309	308	279
CO <sub>2</sub> /passenger kilometer	gram	96.5	99.2	109.7
CO <sub>2</sub> /tonne kilometer	gram	890.1	916.8	1,008.9
Aircraft Noise – takeoff	85 db area in KM2 per dep.	2.13	2.06	2.40
<b>Ground Handling</b>				
Glycol consumption (Deicing fluid)	1,000 liters	1,620	1,493	-
CO <sub>2</sub> Vehicle Petrol	tonnes	25	25	-
CO <sub>2</sub> Vehicle Diesel	tonnes	1,553	1,552	-
<b>Maintenance Productions</b>				
CO <sub>2</sub> Vehicle Petrol	tonnes	44	39	-
CO <sub>2</sub> Vehicle Diesel	tonnes	171	201	-
<b>SAS Cargo Group</b>				
CO <sub>2</sub> cargo share flown	1,000 tonnes	425	375	-
Cargo Tonne kilometer flown	million	821	719	-
CO <sub>2</sub> /cargo tonne kilometer flown	gram	518	522	-
CO <sub>2</sub> /cargo tonne kilometer trucked	gram	136	133	-
<b>Scope 2</b>				
<b>Energy</b>				
CO <sub>2</sub> energy	1,000 tonnes	12	14	-
As of CO <sub>2</sub> electricity	1,000 tonnes	5.7	6.1	-
As of CO <sub>2</sub> heating	1,000 tonnes	6.5	7.6	-
As of CO <sub>2</sub> heating oil (included in "heating")	1,000 tonnes	-	-	-
Energy intensity	co2 kg/m <sup>2</sup>	37	-	-

## NOISE

The average noise per departure increased due to a growing number of long-haul flights. SAS received a few reports of noise violations in 2016/2017, although none of these led to financial implications. The number of breaches has declined in recent years as a result of fleet renewal and structured improvement activities, such as specific flight simulator training including scenarios flying to and from airports with strict noise regulations.

## EMISSIONS OF OZONE-DEPLETING SUBSTANCES

Airline operations have a legal dispensation for the use of halon and submit annual reports to the authorities on its consumption, including leakage and storage. The reason for this dispensation is that there is no certified alternative to halon for extinguishing fires in aircraft engines, cabins and aircraft toilets. Scandinavian Airlines did not report any usage of any halon in 2016/2017.

## EMISSIONS CALCULATION AND CO<sub>2</sub> OFFSET

The SAS emissions calculator, which is available on <http://www.sasgroup.net>, provides information about all SAS flights, with greenhouse gas emissions presented separately. Most calculators on the market calculate the emissions based on average fleet performance and a CO<sub>2</sub> equivalent based on different greenhouse gas emissions. SAS has chosen not to do so, because there is no consensus on how to calculate NOx, particles and water vapor emissions to CO<sub>2</sub> among scientists and experts.

SAS offers the option of offsetting CO<sub>2</sub> emissions from a specific flight in connection with the emissions calculator. SAS has chosen to offer energy efficiency projects in its offset portfolio. The offer is also available for SAS Corporate Customers. Activities to increase demand for this service is planned in 2017/2018. The offer will also include the possibility to also include the possibility to upgrade the fuel consumption used to biofuel.

## WASTE

SAS measures waste from office, ground service and technical maintenance. The waste is divided into sorted, unsorted and hazardous waste. Waste from SAS onboard operations is monitored. In February 2017, waste containers were introduced at the head office to enable easier and better sorting of office waste. All waste is handled by waste handling suppliers according to legal requirements and all waste that has a potential value is reused in other industry applications and processes.

SAS prioritizes to find viable solutions for onboard waste sorting which is challenging today. To date, focus has been to ensure as little potential waste and to sort the waste after the flight.

In 2016/2017, only occasional fuel leaks were reported when refueling aircraft with SK flight numbers. These were handled in accordance with established procedures. No significant emissions or spillages were reported in conjunction with ground handling or technical maintenance.

	Unit	2016/2017	2015/2016	Base year 2010
Sorted waste	tonnes	2,035	1,941	-
Unsorted Waste	tonnes	173	247	815
Hazardous waste	tonnes	142	162	302

## SOCIAL RESPONSIBILITY

SAS's social responsibility primarily encompasses its own employees and the environment that is reliant on and impacted by SAS's operations in a number of countries, mainly in the Nordic region. Competition in the airline business in Europe is fierce. Employees play a key role in creating added value for the customer offering.

As an employer, SAS's responsibility is to ensure decent work conditions and work environment. SAS is also responsible for providing development opportunities as professionals and as human beings. SAS Work Environment Policy, Leadership Policy, Personnel Policy and Diversity Policy applies to all employees in SAS. Group Management is responsible for the policies. The policies are reviewed annually within the business planning year. Activities are followed-up within the management system and reported weekly, monthly, quarterly or annually according to specific needs.

As a buyer, SAS uses the services of a number of subcontractors, thereby contributing to economic and social welfare in the countries and communities where its businesses operate. SAS requires that employees have decent market terms of employment where they are based and are free to join trade unions. SAS Code of Conduct together with SAS Purchasing Policy covers all purchasing activities within SAS. Group Management is responsible for the Purchasing Policy. The policy is reviewed annually. Activities are followed-up within the management system and reported weekly, monthly, quarterly or annually according to specific needs.

As a supplier, SAS has a responsibility to deliver products and services that ensure consumer health and safety, and are reliable, environmentally adapted and produced under decent conditions. SAS Quality Policy is applicable for all products and services in SAS. Group Management is responsible for the policy. The policy is reviewed annually. Activities are followed-up within the management system and reported weekly, monthly, quarterly or annually according to specific needs.

SAS has a zero-tolerance policy towards all forms of harassment, and works continually to counteract this through different activities. This is regulated in our Code of Conduct, and a web-based training of the Code is mandatory for all employees.

## LABOR PRACTICES AND DECENT WORK

The civil aviation industry is moving toward new or re-shaped employment models to reduce costs and increase flexibility. For the last few years, SAS has been working with the unions to cut costs and increase flexibility within the existing employment model. Regardless of the employment model or where the employees are based, it is crucial that the employer upholds its obligations regarding social responsibility toward society in general and its employees.

In the opinion of SAS, there is uncertainty concerning the rules governing where employees are based and where the work is carried out. SAS's position in this matter is clear. Society must clarify and create the prerequisites for a level playing field within the industry, whereby employees are employed under local terms, where they are based and where their work is carried out. When based in Scandinavia, employees should be covered by Scandinavian employment terms, work legislation and tax regimes.

## ORGANIZATIONAL DEVELOPMENT

During 2016/2017 an intensive work was conducted to establish the fully owned airline, SAS Ireland with bases in London and, as of 2017/2018 in Malaga. SAS Ireland employees are employed under local terms and are free to join trade unions. SAS Ireland will be disclosed as of SAS Sustainability Report 2017/2018.

Cimber was sold to CityJet in January 2017.

## RECRUITMENTS AND REDUNDANCY

Redundancies in 2016/2017 were handled through negotiations with labor unions in compliance with national laws and agreements.

## COOPERATION WITH LABOR UNION ORGANIZATIONS

Cooperation in day-to-day operations with labor unions is mainly carried out nationally, where dialog is conducted with the labor unions that have collective agreements with SAS. Cooperation takes place within the framework of national laws and agreements affecting the unit concerned.

Employee representatives from the Scandinavian countries sit on the SAS Group Board of Directors. The employees elect representatives from units in the Group's Scandinavian operations. In general, all SAS employees are covered by collective bargaining agreements. The main exception is senior management at Group level.

## CONTRACT NEGOTIATIONS AND DISPUTES

SAS conducted negotiations and discussions with various unions during 2016/2017, in order to reduce costs and increase the flexibility in existing union agreements.

An organized strike occurred amongst pilots based in Norway in 2016/2017.

## EMPLOYEE DEVELOPMENT

SAS has approximately 430 managers at different levels in the organization. The managers' skills development is based and evaluated on SAS's role model for leadership. A systematic evaluation process is continuously performed for existing managers, and also to identify individuals who may meet the requirements to become managers in the mid to long term. The aim is for all potential managers to have an individualized development plan. SAS has integrated the Lean principles in its management processes. At SAS, all employees work towards shared targets that are categorized under Safety, Quality, Delivery, Employees and Cost (SQDEC). The targets are followed up through clear action plans across all operations. In SAS, all employees work with Performance Development to ensure that we reach our business objectives and make our people grow. Aligning individual and team goals with overall company objectives, in combination with regular feedback and coaching, is an essential part of securing the right capabilities.

SAS is also strengthening leadership and increasing professionalism through a number of forums, such as the SAS Forum 50, Learning lunch and a mentor program for employees and leaders.

In order to retain and develop employee skills, extensive training programs are carried out each year. In 2016/2017, SAS employees attended an estimated 390,000 hours of training. In average this corresponds to 34.3 hours per employee.

Flight crew and operational ground staff are covered by a number of license and competency requirements from EU-OPS and the IATA through the IOSA (IATA Operational Safety Audit). In average, a pilot trained 70 hour per year, and a cabin crew trained 37 hours per year.

The mandatory training programs were carried out according to plan for different personnel groups regarding hazardous goods, passengers' rights, IT security and food safety, etc.

Most of SAS's employees have access to more than 100 different online courses. E-learning cannot always replace classroom instruction, but due to its greater flexibility and availability, more courses can be offered at a lower cost.

As a part of improving and supporting internal efficiency, this year SAS began work on the Make Work Easier project. Through new tools and applications, flexibility and communication are improved as well as simplifying the workplace with increased automation. For example, SAS launched SAS Insight, an app that enables employees to access news and information on the SAS intranet via mobile phones and iPads. This way, all employee groups can acquaint themselves with internal communication, and digital services and functions. Moreover, in 2016/2017 SAS started the transition to Microsoft Office 365, which will create new possibilities for SAS as a digital workplace.

During 2016/2017, SAS introduced a new employee survey functionality in order to conduct a more frequent follow-up.

Read more about SAS strategy to ensure the right capabilities in SAS Annual Report 2016/2017 on pages 24-27.

## WORK ENVIRONMENT

### Sick leave

A standardized reporting method is implemented for all three countries: Denmark, Norway and Sweden. SAS reports sick leave pursuant to Swedish legislation.

Standardized sick leave follow-ups have generated results and decreased absence. Managers are in early contact with employees and supported by HR.

For crew, special sick leave follow-up teams work in close collaboration with external occupational health and aeromedical specialists. Early contact with employees and support for medical health care and rehabilitation programs shorten periods of illness. Short-term sick leave is reported and employees are given medical advice by nurses when reporting illness. In cases of frequent short-term sick leave, SAS requires "a first day doctor's certificate." Temporary workplaces and special work schedules are offered for better and faster rehabilitation.

During 2016/2017, total sick leave at SAS decreased to 5.9% (6.2%). Long-term sick leave, more than 14 days, accounted for 3.8% (4.3%) of the total sick leave at SAS.

### Occupational injuries

Efforts have been made to lower the number of occupational injuries by prioritizing preventive actions. Examples of efforts are improved processes for systematic follow-up and education activities. These efforts take place in collaboration with safety representatives, supervisors, HR and labor-management joint safety committees that cover all employees in each country.

Examples of occupational injuries are straining or crush injuries in connection with baggage loading. Ground handling has the highest occupational injury frequency at SAS.

The number of occupational injuries at SAS was 248 in 2016/2017.

## Company Health services

The company's health services or health, safety and environment (HSE) function that supports the whole organization, offers services through in-house or outsourced resources with therapists, stress and rehabilitation experts, ergonomic specialists and engineers. The function also offers special services, including aviation medicine, stress management, follow-up of sick leave, health profiles, ergonomics and advice in handling chemicals. Investments are made in large parts of the organization in different forms of health-promoting activities both in the workplace and during leisure time.

SAS	DK	NO	SE	Total
No. of employees October reporting fiscal year (head count)	3,936	3,428	4,080	11,444
No. Of women	1,274	1,334	1,673	4,281
of whom, women, %	32%	39%	41%	37%
Total sick leave, %	4.8%	7.4%	5.7%	5.9%
Long-term sick leave (more than 14 days), %	3.0%	5.0%	3.7%	3.8%
Total number of occupational injuries with one day's sick leave or more	148	55	45	248
Ground Operations	109	36	37	182
Technical Operations	7	5	1	13
Flight Operations	32	14	7	53
Occupational injury frequency lost time-to-injury rate (H-value)	21.5	10.4	6.2	12.8

## DIVERSITY AND EQUAL OPPORTUNITY

SAS Diversity Policy promotes equal treatment of all employees and job applicants. Work on equal treatment includes promoting diversity and equality in all its forms. In 2016/2017 legal gender distribution in SAS was 37% women and 63% men.

In SAS, there is a traditional split between female-dominated professions and male-dominated professions. Pilots (4% women), technicians and aircraft maintenance staff (6% women) are traditionally male-dominated, while cabin crew (74% women), check-in and gate personnel at the airports (64% women) are primarily female-dominated. In Denmark, SAS Cargo Group the internal board is comprised to 33% by women.

Legal gender	Age			Total
	>30	30-49	<50	
Women	8%	13%	17%	37%
Men	10%	22%	31%	63%
Total	17%	35%	48%	

## PRODUCT RESPONSIBILITY

SAS assumes its responsibility for maintaining the highest standards of product responsibility. SAS follow strict policies and applicable legislation regarding safety, IT security, food, cargo, etc.

Flight Safety is highly regulated. SAS is regularly audited both by external parties, partners and customers. Relevant authorities review work conditions for airline personnel regarding working hours for example.

Punctuality and Regularity are crucial aspects for the ability to deliver passenger transport on time and as planned. SAS works continuously to monitor and improve punctuality and regularity, and this is valued highly by SAS customers.

IT security and integrity is more important than ever and SAS has an extensive program to ensure the high level of IT security required. In SAS's relentless efforts to remain a customer-centric organization, it was a natural decision to commence GDPR compliance planning at an early stage. The work is performed by a GDPR steering committee, jointly led by IT and legal with representatives from all affected departments. The project is on time and will ensure that SAS is fully GDPR compliant by May, 2018 when the law comes into force.

## SOCIAL INVOLVEMENT

### Preparedness for air ambulance operations

SAS has an agreement on a commercial basis with the Swedish government to make two specially equipped Boeing 737s available as air ambulances within the framework of the Swedish National Air Medevac (SNAM) in case of emergency. A corresponding agreement exists with the Norwegian Armed Forces under which SAS is to make a remodeled ambulance service 737-700 available for medical evacuation within 24 hours, following the same principle as with SNAM. If needed, a second aircraft must be made available within 48 hours.

### Christmas flight

In December 2016, SAS supported the Norwegian "Christmas flight." The Christmas flight is an aid campaign carried out by SAS employees, who cooperate with other volunteers throughout the year to collect goods and contributions from various partner companies and private individuals. SAS provides an aircraft with full operational support, while pilots and crew volunteer in their free time and the fuel is sponsored by a fuel supplier. This flight was also conducted in December 2017 with SAS support.

## FINANCIAL ASPECTS OF SAS SUSTAINABILITY AGENDA

SAS's sustainability work has several overriding purposes. Besides enhancing the efficiency of resources and improving environmental performance, it includes ensuring that the operations comply with sustainability laws and regulations.

Civil aviation accounts for the cost of the infrastructure needed and used for flights, i.e. airports and air traffic control. The cost of security is also financed within the industry.

Environmental taxes and charges are associated with noise, emissions and the number of passengers. The civil aviation sector pays for its carbon emissions within the EU through the EU Emissions Trading regulations (EU-ETS), which is an established market-based measure. SAS's opinion is that market-based measures should not distort competition, should address emissions targeted for reduction needs and should create an incentive for continuous improvement. SAS has supported the development of a global, market-based solution for airline emissions for a long time.

SAS supports the "PPP", Polluter Pays Principle and is prepared to take responsibility for its share. This assumes that any charges imposed on the company are based on scientific findings and that the total climate impact of competing modes of transport is taken into consideration.



The UN aviation organization, the ICAO decided on a global market based measure for implementation by 2021 (CORSIA). The key elements of a global solution should not distort competition and should incorporate the UN's CBDR principles (Common But Differentiated Responsibility). At present, SAS is prepared to report its emission but has no details available that enables SAS to calculate the potential cost connected to CORSIA.

There are a growing number of environmental related taxes introduced on passenger air transport.

SAS fully supports the Polluter Pays Principle but opposes the mechanism behind these taxes. It does not address the actual CO<sub>2</sub> emissions and has been introduced in addition to EU-ETS or the soon to be introduced CORSIA. The result is a patchwork of economic measures without incentives to reduce CO<sub>2</sub> emissions. An example is the Norwegian and Swedish passenger taxes which cost the same regardless of the actual CO<sub>2</sub> emissions. A passenger on board an A320neo with 50% biofuel pays the same tax as a passenger on board an aircraft two generations older. If both aircraft are fully booked the CO<sub>2</sub> emissions are approximately 65% lower for the passenger on board the A320neo.

#### **Environment related costs**

In 2016/2017, SAS's external environment-related costs were MSEK 1,413. These costs comprise environment-related taxes and fees that are often associated with the environmental performance of aircraft and are included in the landing fee.

SAS has no known major environment-related debts or contingent liabilities, for example, in the form of contaminated soil.

The costs for EU-ETS were MSEK 55 in 2016/2017.

#### **Environment related investment**

According to SAS's guidelines, investments are to be both environmentally and economically sound, and thereby contribute to SAS's value growth and help to ensure that SAS can meet the assumed future environmental requirements.

During 2016/2017, no significant environment-related investments were conducted. This is because the preferred solution is leasing, rather than investing in aircraft, vehicles, computers, etc. An example of the use of leasing in recent years has been the replacement of aircraft.

#### **SAS's contribution to the economy**

SAS creates employment and value. In 2016/2017, SAS paid wages and salaries totaling MSEK 6,498, of which social security expenses were MSEK 2,137, with pensions totaling MSEK 835 of this amount. SAS endeavors to achieve market pay for all employee groups.

Air transport pays the costs for the infrastructure it needs and uses to conduct flights, meaning airports, air traffic control and security. For 2016/2017, these cost totaled MSEK 9,091 for Scandinavian Airlines. Of this cost Scandinavian Airlines paid MSEK 1,429 in security costs, which are financed by taxes for most other modes of transportation.

#### **Costs of sick leave**

Sick leave is a large expense for society. SAS's own calculation of costs for sick leave amounts to approximately MSEK 209 in 2016/2017. Sick leave can be both physically and mentally stressful for the employee and SAS works with various methods to prevent short and long-term sick leave.

# RISK MANAGEMENT

Risk area	Risk	Risk level	Risk control measures 2016/2017
<b>1</b> MARKET RISKS	1.1 Macro-economic trend	●	Continual adaptation of SAS's capacity offering and production.
	1.2 Market and competition trends	●	Implementation of SAS's streamlining program and a more flexible production model.
<b>2</b> EMPLOYEE RISKS	2.1 Right skills	●	People reviews and successor identification.
	2.2 Processes and systems	●	Follow-up of low and high-performing individuals. Documentation of internal processes.
	2.3 Commitment	●	Strengthened leadership and increased internal transparency.
	2.4 Strikes	●	Strengthen the dialogue to increase consensus with the unions. Extension of several collective agreements to 2019/2020.
<b>3</b> OPERATING RISKS	3.1 Safety activities	●	Continuous internal monitoring and reporting to the Board.
	3.2 Suppliers	●	During 2017, SAS has focused on closer collaboration with strategic suppliers, as well as monitored quality levels and efficiency. The number of suppliers has decreased 19%.
	3.3 Competitive costs and efficiency	●	SAS has a cost differential compared with newly-started competitors. The efficiency enhancement program was doubled during 2016/2017 from SEK 1.5 billion to SEK 3.0 billion, with effect in the 2017–2020 period.
<b>4</b> SUSTAINABILITY RISKS	4.1 Environmental directives and requirements	●	Structured environmental work certified under ISO 14001 and containing measures for improving climate and environmental performance, and ensured observance of applicable laws and regulations.
	4.2 Anticorruption	●	Implementation of a training program for employee groups at the greatest risk of corruption.
	4.3 Human rights	●	Ongoing requirements updates and monitoring of subcontractors.
<b>5</b> LEGAL AND POLITICAL	5.1 Political and regulatory risks	●	SAS conducts active dialogues with political systems and industry organizations (IATA) to obtain early information about regulatory changes and to influence decisions. Together with the industry, SAS has informed about the negative consequences of introducing an aviation tax in Sweden.
	5.2 Legal and insurance risks	●	Development of policies and training to ensure compliance with various rules and laws. Continual monitoring of laws and policies. Legal counsel and participation in contract processes for minimizing contractual risk. Securing complete insurance protection of operations and employees.
<b>6</b> FINANCIAL RISKS	6.1 Liquidity risk and refinancing	●	Follow-up and forecasting financial preparedness. Financing of the remaining 10 Airbus A320neos and eight Airbus A350s has begun. Continuous discussions with banks and financial backers aimed at managing maturing borrowings and leases.
	6.2 Jet-fuel price and emission rights	●	Jet-fuel hedging in line with SAS's financial policy and monitoring the jet-fuel price trend.
	6.3 Exchange rates	●	Currency hedging in line with SAS's financial policy and monitoring the currency market.
	6.4 Interest rates	●	Fixing rates in line with SAS's financial policy and monitoring the interest-rate market.
	6.5 Counterparty losses	●	SAS's counterparty risks are managed in line with SAS's financial policy.
<b>7</b> IT	7.1 IT	●	Continual improvement of incidents and problem-handling procedures. Focus in 2017 on reducing IT problems that affect the SAS website, planning system, and management of cyber attacks
<b>8</b> OTHER EVENTS	8.1 Extraordinary events	●	Increase cost flexibility to reduce costs in the case of reduced demand.
	8.2 Brand and reputation	●	Monitoring information pertaining to SAS.

● Low risk ● Medium risk ● High risk

The underlying objective of risk management is to create the optimal preconditions for growing value for shareholders and other stakeholders. All organizations are exposed to risks and uncertainties, which entail both risks and opportunities. SAS is exposed to a large number of general and more company-specific risks that can impact operations both negatively and positively.

Risk management at SAS is about positioning SAS in relation to, known and unknown, possible events with the aim of minimizing the potential negative effects should an unexpected event occur. Overall risks are monitored and identified centrally and

followed-up through policies that aim to control the risks. Flight safety is always top priority at SAS.

Value is maximized for shareholders and other stakeholders in SAS, when strategies, goals and their strategic priorities are set to ensure an optimal balance is reached in terms of growth, profitability and their related risks, as well as that resources are used efficiently and sustainably. Accordingly, risk management and risk assessment are of fundamental importance for ensuring SAS's long-term sustainable profitability. A detailed description of each area is disclosed in SAS Annual Report 2016/2017.



# ACCOUNTING POLICIES

Accounting policies for Sustainability Reporting 2015/2016 fiscal year.

“SAS” or “The SAS Group” is used throughout the report when referring to the overall operations.

In 2016/2017, SAS reports its general sustainability results divided into the same segments as disclosed in the Annual Report:

- Scandinavian Airlines comprises all operations in the SAS Consortium, including SAS Cargo Group (SCG).
- SAS Ground Handling (SGH).

For environmental responsibility, SAS strives to distinguish between airline and ground operations.

Accordingly, the following divisions have been made:

- Airline operations with an SK flight number. Scope 1
- Ground handling in SAS Ground Handling (SGH). SGH conducts ground handling for Scandinavian Airlines and other customers, such as other airlines. Scope 1.
- Technical maintenance in SAS Maintenance Production. SAS Maintenance Production conduct technical maintenance primarily for Scandinavian Airlines but also for other customers, such as other airlines. Scope 1.
- Freight and mail services within SAS Cargo Group A/S (SCG). Scope 1
- Facilities owned or leased by SAS. Scope 2.

SAS continues to hold interests in Air Greenland but these are not disclosed since SAS is no longer a majority shareholder and is divesting the current holding. SAS's structure is presented on page 50 in the SAS Annual Report, November 2016–October 2017.

## SUSTAINABILITY REPORTING

SAS's Sustainability Report has been prepared in accordance with the SAS Accounting Policies for Sustainability Reporting.

SAS has also applied the Global Reporting Initiative's (GRI) Sustainable Reporting Standards Core. GRI content index is available on page 22–23. The index indicates where the GRI indicators are found in the SAS Sustainability Report November 2016–October 2017. The Sustainability Report also covers all important principles in the UN Global Compact.

## SCOPE OF THE SUSTAINABILITY REPORT

SAS's Sustainability Report should contribute to the evaluation and understanding of SAS's operations. The report is an overview of SAS's structured sustainability work. The goal of the SAS Sustainability Report November 2016–October 2017 is to disclose all information necessary to provide the reader with a fair overview of SAS's environmental, social, and financial responsibilities. SAS Annual Report November 2016–October 2017 includes a integrated general overview of SAS's sustainability efforts and the sustainability information in the Report by the Board of Directors on page 48.

The ultimate responsibility for SAS's sustainability aspects, and their integration in operational activities, lies with Group Management. The Sustainability Report was reviewed by SAS Group Board of Directors and SAS Group Management in January 2018. The SAS Group Board of Directors submitted the Annual Report November 2016–October 2017 and Sustainability Report November 2016–October 2017 in January 2018.

## LIMITATIONS

The main principle for sustainability reporting is that all units and companies controlled by SAS are accounted for. This means that sustainability-related data for divested companies owned by SAS during the period is reported wherever possible. The same accounting policies as for financial information in the Annual Report are intended to be used for financial information in the Sustainability Report.

SAS has a number of production indicators (such as passenger kilometers and tonne kilometers). There are differences between the Annual Report and the Sustainability Report as regards the disclosure of the number of passenger kilometers. The Annual Report uses revenue passenger kilometers (RPK) where paying passengers are included, while the Sustainability Report uses passenger kilometers (PK) where all passengers are included.

Standard definitions for environmental and social data have been applied throughout SAS. None of the limitations are considered to have any substantial significance.

## CHANGES IN ACCOUNTING POLICIES AND CALCULATING PRINCIPLES

The sustainability information in the Sustainability Report is affected by the following changes:

None.

## PRINCIPLES FOR REPORTING AND CALCULATING ENVIRONMENTAL DATA

Reported environmental information is based on the following calculations and/or factors:

- Distance, based on WGS84 Great Circle Distance (GCD) calculations between airport reference points as defined in national AIPs.
- Passenger weight for TK calculations in 100 kg for any person with hand luggage and checked luggage transported. This does not include active crew.
- Cargo and mail, actual weight is used.
- Fuel density (kg per liter):
  - Jet A/A-1<sup>1</sup>: Actual density or 0.8
  - Diesel: 0.84
  - Petrol: 0.73
  - Heating oil: 0.84
- CO<sub>2</sub> factor (per weight unit of fuel):
  - Jet A/A-1<sup>1</sup>: 3.15
  - Diesel: 3.17
  - Petrol: 3.12
  - Heating oil: 3.17
  - Electricity: 125,5 (grams/kWh based on Nordic energy mix)
- Energy conversion of fuels (GWh per 1,000 tonnes):
  - Jet A/A-1: 12.0
  - Diesel: 12.0
  - Petrol: 12.2
  - Heating oil: 12.0
- Nitrogen oxides (NO<sub>x</sub>), factors (per weight unit of fuel):
  - Jet A/A-12 Between 0.00694 and 0.0193<sup>2</sup>

1) Fuel density and CO<sub>2</sub> factor for Jet A/A-1 is calculated according to approved MRV plan.

2) Varies per aircraft/engine combination.



### Carbon emissions per passenger kilometer and cargo tonne kilometer - Scope 1

SAS has chosen to apply a calculation method to divide the amount of fuel used for passenger and cargo transport before dividing the amount by passenger or cargo tonne kilometer. The method is based on the IATA Carbon Calculator Tool. The assumption is that fuel usage is proportional to weight. Passenger fuel usage is the ratio of total passenger weight to total weight multiplied by the total fuel used. The remainder is allocated to cargo transport.

$$\text{Total Passenger Fuel Usage} = \frac{\text{(Total Passenger Weight / Total Weight)}}{\text{Total Fuel Used}} \times \text{Total Fuel Used}$$

$$\text{Where, Total Weight} = \frac{\text{Total Passenger Weight} + \text{Total Freight/Cargo Weight}}{\text{Total Fuel Used}}$$

$$\text{Total Passenger Weight (kg)} = \frac{\text{(Number of Seats x 50 kg)} + \text{(Number of Passengers x 100 kg)}}{\text{Total Fuel Used}} \times \text{Total Fuel Used}$$

The calculation method allocates 50 kg per seat to the prerequisites for passenger transport and the same weight per passenger as used in all other calculations applied within the industry.

For cases when flights were conducted without passengers or freight/cargo transport, all carbon emissions were allocated as passenger transport.

Examples of these flights are training flights, positioning flights between scheduled flights, and flights to/from maintenance, etc. The reason for this changed calculation method is to achieve more precise carbon emissions per production unit calculations. The previous calculation method essentially involved double accounting, with emissions per passenger kilometer including the fuel used for freight/cargo transport and vice versa.

### Climate Index - Scope 1

SAS has chosen to construct a climate index for flight operations. The most recent base year is the full-year 2011, which is used to follow up progress connected to activities implemented in 2011. The climate index is calculated by using the quantity of emissions of carbon dioxide and nitrogen oxides in relation to production.

Even though there is no consensus regarding the weighting between the effect of different greenhouse gases on total impact on climate change, SAS has decided to base the calculation on the assumption from, among others, Cicero that 1.5 is a reasonable multiplier given the currently available knowledge.

Read more about Cicero that provided basic data for IPCC, for example, on [www.sasgroup.net](http://www.sasgroup.net) under the heading Sustainability. This gives a ratio of two parts carbon dioxide to one part other climate changing emissions such as nitrogen oxides, water vapor and particulates. Nitrogen oxides have been chosen

as a non-CO<sub>2</sub> indicator for the climate index. Every emission is reported separately until clearer directives are given regarding how the total climate effect is to be calculated.

Environmental aspect	Weighting	Production factor
Carbon dioxide	67%	Tonne Kilometer (TK)
Nitrogen oxides	33%	

The climate index is designed for SAS to present month-to-month trends. This assumes that the methodology is not changed.

### PRINCIPLES FOR REPORTING AND CALCULATION OF SOCIAL DATA

The following principles for calculating and reporting of social data have been used.

#### Occupational injuries (H-value)

Frequency of occupational injuries (H value) is calculated using the following formula:

$$\text{No. of occupational injuries with minimum of one day's absence} \times 1,000,000 \div \text{total number of performed working hours per year}$$

#### Number of employees

In the Sustainability Report, the number of employees is based on the number of persons during the month of October and sick leave statistics calculated for the fiscal year. These are employees having a budgeted or actual schedule and/or who were sick during the period.

#### Sick leave

Sick leave is reported as the number of days sick in relation to number of employees multiplied by calendar days. For sick leave, absence due to sick children is excluded. Long-term sick leave (more than 14 days) is reported as a percentage of total sick leave.

### PRINCIPLES FOR REPORTING AND CALCULATION OF EXTERNAL AND OTHER ENVIRONMENTALLY RELATED COSTS

Where possible, environmentally related costs are based on information directly from the accounting system. When this has not been possible, for example, for calculations of certain charges and taxes that are included in landing charges, estimates were used based on the number of passengers to a certain destination and the charge or tax per passenger.

# GRI CONTENT INDEX

GRI Standards	Disclosure	Page number(s) and /or URL(s)	Omission
<b>GENERAL DISCLOSURES</b>			
GRI 102: General disclosures 2016	102-1	Name of the organization	Back cover.
	102-2	Activities, brands, products, and services	AR17 inside front cover.
	102-3	Location of headquarters	Back cover.
	102-4	Location of operations	Page 2.
	102-5	Ownership and legal form	AR17 pages 50-62.
	102-6	Markets served	Page 2 and AR17 page 17.
	102-7	Scale of the organization	Page 2.
	102-8	Information on employees and other workers	Page 18.
			SAS only report total workforce, not by employment type and contract.
	102-9	Supply chain	Page 14.
	102-10	Significant changes to the organization and its supply chain	Page 17.
	102-11	Precautionary Principle or approach	Page 13.
	102-12	External initiatives	Pages 13-14.
	102-13	Membership of associations	Page 14.
	102-14	Statement from senior decision-maker	Page 3.
	102-16	Values, principles, standards, and norms of behavior	Pages 12-13.
	102-18	Governance structure	AR17 page 51.
	102-40	List of stakeholder groups	Pages 13-14.
	102-41	Collective bargaining agreements	Page 17.
	102-42	Identifying and selecting stakeholders	Pages 13-14.
	102-43	Approach to stakeholder engagement	Page 13-14.
	102-44	Key topics and concerns raised	Page 13-14.
	102-45	Entities included in the consolidated financial statements	Page 2 and AR17 page 50 .
	102-46	Defining report content and topic Boundaries	Inside front cover and page 22.
	102-47	List of material topics	Page 12.
	102-48	Restatements of information	Not applicable.
	102-49	Changes in reporting	Page 22.
	102-50	Reporting period	Page 1.
	102-51	Date of most recent report	Page 1.
	102-52	Reporting cycle	Page 1.
	102-53	Contact point for questions regarding the report	Page 1.
	102-54	Claims of reporting in accordance with the GRI Standards	Page 1.
	102-55	GRI content index	Pages 24-25.
	102-56	External assurance	Page 27.
<b>ANTI-CORRUPTION</b>			
GRI 103: Management approach 2016	103-1	Explanation of the material topic and its Boundaries	Pages 1, 12 and 22.
	103-2	The management approach and its components	Pages 12-14 and 16.
	103-3	Evaluation of the management approach	Pages 14 and 16.
GRI 205: Anti-Corruption 2016	205-1	Operations assessed for risks related to corruption	Page 14.
<b>ANTI-COMPETITIVE BEHAVIOR</b>			
GRI 103: Management approach 2016	103-1	Explanation of the material topic and its Boundaries	Pages 1, 12 and 20.
	103-2	The management approach and its components	Pages 12-14 and 16.
	103-3	Evaluation of the management approach	Pages 14 and 16.
GRI 205: Anti-competitive behavior 2016	205-1	Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	Page 14.
<b>EMISSIONS</b>			
GRI 103: Management approach 2016	103-1	Explanation of the material topic and its Boundaries	Pages 1, 12 and 22.
	103-2	The management approach and its components	Pages 12-13 and 15.
	103-3	Evaluation of the management approach	Page 13.
GRI 305: Emissions 2016	305-1	Direct (Scope 1) GHG emissions	Page 15.
	305-2	Energy indirect (Scope 2) GHG emissions	Page 15.
	305-4	GHG emissions intensity	Page 15.
	305-7	Nitrogen oxides (NOX), sulfur oxides (SOX), and other significant air emissions	Page 15.

GRI Standards	Disclosure	Page number(s) and /or URL(s)	Omission
<b>EFFLUENTS AND WASTE</b>			
GRI 103: Management approach 2016	103-1	Explanation of the material topic and its Boundaries	Pages 1, 12 and 22.
	103-2	The management approach and its components	Pages 12-13 and 15-16.
	103-3	Evaluation of the management approach	Pages 13 and 15.
GRI 306: Effluents and Waste 2016	306-2	Waste by type and disposal method	Page 16.
<b>SUPPLIER ENVIRONMENTAL ASSESSMENT</b>			
GRI 103: Management approach 2016	103-1	Explanation of the material topic and its Boundaries	Pages 1, 12 and 22.
	103-2	The management approach and its components	Pages 14 and 16.
	103-3	Evaluation of the management approach	Pages 13 and 16.
GRI 308: Supplier Environmental Assessment 2016	308-1	New suppliers that were screened using environmental criteria	Page 14.
<b>OCCUPATIONAL HEALTH AND SAFETY</b>			
GRI 103: Management approach 2016	103-1	Explanation of the material topic and its Boundaries	Pages 1, 12 and 22.
	103-2	The management approach and its components	Page 12-13 and 16-17.
	103-3	Evaluation of the management approach	Pages 13 and 16.
GRI 403: Occupational Health and Safety 2016	403-1	Workers representation in formal joint management–worker health and safety committees	Page 17.
	403-2	Types of injury and rates of injury, occupational diseases, lost days, and absenteeism, and number of work-related fatalities	Page 18.
<b>TRAINING AND EDUCATION</b>			
GRI 103: Management approach 2016	103-1	Explanation of the material topic and its Boundaries	Pages 1, 12 and 22.
	103-2	The management approach and its components	Pages 12-13 and 16-17.
	103-3	Evaluation of the management approach	Pages 13 and 16.
GRI 404: Training and Education 2016	404-1	Average hours of training per year per employee	Page 17.
	403-3	Percentage of employees receiving regular performance and career development reviews	Page 17.
<b>DIVERSITY AND EQUAL OPPORTUNITY</b>			
GRI 103: Management approach 2016	103-1	Explanation of the material topic and its Boundaries	Pages 1, 12 and 22.
	103-2	The management approach and its components	Page 12-13 and 16-17.
	103-3	Evaluation of the management approach	Pages 13 and 16.
GRI 405: Diversity and Equal Opportunity 2016	405-1	Diversity of governance bodies and employees	Page 18.
<b>SUPPLIER SOCIAL ASSESSMENT</b>			
GRI 103: Management approach 2016	103-1	Explanation of the material topic and its Boundaries	Pages 1, 12 and 22.
	103-2	The management approach and its components	Pages 14 and 16.
	103-3	Evaluation of the management approach	Pages 13 and 16.
GRI 414: Supplier Social Assessment 2016	414-1	New suppliers that were screened using social criterias	Page 14.
<b>CUSTOMER HEALTH AND SAFETY</b>			
GRI 103: Management approach 2016	103-1	Explanation of the material topic and its Boundaries	Pages 1, 12 and 22.
	103-2	The management approach and its components	Page 16 and 18.
	103-3	Evaluation of the management approach	Pages 13 and 16.
GRI 416: Customer Health and Safety 2016	416-1	Assessment of the health and safety impacts of product and service categories	Page 18.

# SUSTAINABILITY TERMS, DEFINITIONS AND CONCEPTS

**Average number of employees** is defined as the average number of employees expressed in full time equivalents, excluding leave of absence, parental leave and long-term sick leave. This definition is also used in the financial reporting. Sometimes the term FTE (Full Time Equivalent) is used.

**Biofuels** are solid or liquid fuel with biological origin. Liquid fuels for vehicle/ship/aircraft engines. To various degrees considered carbon neutral. The EU renewables directive (2009/28/EC) and biofuels directive (2003/30/EC) define the EU's mandates on biofuels and degree of carbon neutrality.

**CDP** is a not-for-profit charity that runs the global disclosure system for investors, companies, cities, states and regions to manage their environmental impacts. Read more at <http://www.cdp.net>.

**Carbon dioxide (CO<sub>2</sub>)** is a colorless gas that is formed in the combustion of all fossil fuels. The airline industry's CO<sub>2</sub> emissions are being reduced based on a changeover to more fuel-efficient aircraft, something that is also desirable from a financial standpoint since lower fuel consumption automatically means lower costs.

**Cargo tonne kilometer**, includes all freight and mail (in metric tonnes) multiplied by the great circle distance flown for all flights performed.

**CFCs** are a group of chlorofluorocarbons that may also contain hydrogen and/or bromine. A class of stable chemical compounds mostly known under the trade names Freon or Halon. Manufacture prohibited by Montreal Protocol because of negative effect, depletion of the Ozone Layer. Aviation has exception for use under a critical use clause due to lack of approved alternatives. Research for alternatives is ongoing.

**Charges for the infrastructure**, imposed by the operators of the infrastructure and which are intended to cover operating and capital costs for airlines and air traffic management.

**CO<sub>2</sub>** Carbon dioxide (see definition).

**CO<sub>2</sub> passenger- or cargo share** is the amount of carbon emissions from passenger or cargo transport.

**Code of Conduct** is business ethics rules and guidelines.

**dB** Decibel, a logarithmic unit of measurement that expresses the magnitude of a physical quantity relative to a specified or implied reference level.

**Environmentally related charges** are charges imposed by the airport operators to motivate aircraft operators to operate aircraft with high eco-efficiency with respect to noise and other emissions such as of NO<sub>x</sub>, as well as surcharges imposed by airport operators to motivate aircraft operators to avoid take-offs and landings at night. In some cases, the environmentally related charges are considered income-neutral, meaning that the total income of the airport remains unchanged by reductions in other charges. The methods for classifying aircraft differ between countries and airports within countries. Although the charges are differentiated based on the eco-efficiency of the aircraft, they are ultimately balanced in such a way as to amount to the total cost determined by the airport operator.

**Environmentally related investments** Investments in assets to prevent, reduce or restore environmental damage arising from operations and/or aimed at meeting upcoming, more stringent environmental requirements.

**Environmentally related taxes** Taxes that, in contrast to other corporate taxation, are motivated by environmental grounds. Examples are the environmentally motivated passenger charge in the UK and the environmentally related fiscal CO<sub>2</sub> charge in Norway. **External environmentally related costs** are the sum of environmental charges and environmentally related charges and taxes.

**Fossil fuels** are fuels consisting of organic carbon and hydrogen compounds in sediment or underground deposits – especially coal, oil and natural gas.

**Global Compact** is a challenge from the former UN Secretary General Kofi Annan to business and industry to live up to ten principles of human rights, employee rights, the environment and anti-corruption, as formulated by the UN. [www.unglobalcompact.org](http://www.unglobalcompact.org)

**Glycol** is an alcohol that is sprayed on the aircraft in cold weather to prevent ice formation. Today, a non-toxic propylene glycol is used. Some 80% of the glycol runs off the aircraft when applied, and seeps into the ground unless collected. A further 15% is emitted to the air and is thus dispersed in the vicinity of the airport. The airports are responsible for collecting the glycol runoff for reuse.

**GRI** Global Reporting Initiative is an organization aiming to provide companies and organizations with a global sustainability reporting framework and thereby facilitate comparisons between companies from a social, environmental and economic perspective. [www.globalreporting.org](http://www.globalreporting.org)

**Greenhouse effect** Carbon dioxide and other gases trap and reradiate incoming solar radiation that would otherwise be reflected back into space. Most scientists agree that heavy human use of fossil fuels is causing global warming. Carbon dioxide is formed in the combustion of all fossil fuels, but burning of biofuels only emits an amount of carbon equal to that absorbed during growth, producing no net emissions. However, use of coal, oil and natural gas produce a net increase, since they release carbon that has been bound in the earth's crust. Other gases that contribute to the greenhouse effect are CFCs (see definition), methane and nitrous oxide.

**Halons** See CFCs.

**IATA** The International Air Transport Association represents, leads and serves the airline industry. Its members comprise all major passenger and cargo airlines.

**In-air fuel dump** is used if an aircraft has to land prior to its total weight has reached the maximum landing weight. The process is regulated by responsible authorities and conducted according to defined procedures.

**ISO 14000** is a series of international environmental standards developed by the International Organization for Standardization. The general guiding principles for ISO 14000 are identical to those in the quality standard ISO 9000.

**Jet A-1** is the common jet fuel specification outside North America. Jet A and Jet A-1 are very similar and throughout this Sustainability Report the term "jet fuel" is used to describe fuel used by the aviation industry.

**Kerosene** is the common name for petroleum-derived jet fuel such as Jet A-1. Kerosene is one of the fuel sources that can be made by refining crude oil. It is also used for a variety of other purposes.

**MRV** Monitoring, Reporting and Verification of CO<sub>2</sub> emissions and production in tonne-kilometers in the EU Emissions Trading Scheme.

**N-ALM** The Nordic Working Group for Environmental Issues in Aviation, composed of civil aviation, environmental and communication authorities and airlines in the Nordic countries.

**Nitrogen oxides (NO<sub>x</sub>)** Formed during combustion in all engines. For aircraft engines since the high temperature and pressure cause the atmospheric nitrogen and oxygen to react with each other, mainly during take-off and ascent when the engine temperature is at a maximum.

**Noise** are environmentally detrimental, undesirable sounds. The environmental impact of air traffic in the form of noise is primarily of a local nature. Noise is normally described and measured in dB(A), an A-weighted sound level.

**NO<sub>x</sub>** Nitrogen oxides (see definition).

**Occupational injuries** is the number of injuries employees incur by accidents at the workplace resulting in at least one day of absence.

**PK (used in the sustainability-related reporting)**, passenger Kilometers, includes all passengers (100 kg per passenger including luggage) excluding active crew multiplied by the great circle distance flown for all flights performed.

**RPK** (used in the financial reporting) revenue passenger kilometers, utilized (sold) capacity for passengers expressed as the number of seats multiplied by the distance flown.

**SAFUG** Sustainable Aviation Fuel Users Group. Aviation industry organization focused on accelerating the development and commercialization of sustainable aviation fuels.

**Sustainable development** means that when mankind satisfies its needs to today, it does so without limiting the opportunities for future generations to satisfy theirs.

**Tonne kilometers** are the number of transported metric tonnes of passengers and cargo multiplied by the distance flown.

**Weighted noise contour** is calculated based on the number of takeoffs per day at a given airport, with regard to the aircraft types the airline uses at that airport. The weighted noise contour defines the area in km<sup>2</sup> that is subjected to a noise footprint of 85 dB(A) or more in connection with take-off.



# INDEPENDENT AUDITOR'S COMBINED ASSURANCE REPORT

To SAS AB (publ)

## INTRODUCTION

We have been engaged by the management of SAS AB (publ) to undertake an examination of the SAS Sustainability Report for the year 2016/17.

## RESPONSIBILITIES OF THE BOARD AND MANAGEMENT FOR THE SUSTAINABILITY REPORT

The Board of Directors and the Group Management are responsible for the preparation of the Sustainability Report in accordance with the applicable criteria, as explained on page 22 in the Sustainability Report, and are the parts of the *GRI Sustainability Reporting Standards 2016* which are applicable to the Sustainability Report, as well as the accounting and calculation principles that the Company has developed. This responsibility includes the internal control relevant to the preparation of a Sustainability Report that is free from material misstatements, whether due to fraud or error.

## RESPONSIBILITIES OF THE AUDITOR

Our responsibility is to express a conclusion on the Sustainability Report based on the procedures we have performed.

We conducted our engagement in accordance with ISAE3000, *Assurance Engagements Other than Audits or Reviews of Historical Financial Information*, issued by IAASB. The engagement includes a limited assurance engagement on the complete Sustainability Report and audit of certain information as specified below. The objective of an audit is to obtain reasonable assurance that the information is free of material misstatements. A reasonable assurance engagement includes examining, on a test basis, evidence supporting the quantitative and qualitative information in the Sustainability Report. A limited assurance engagement consists of making inquiries, primarily of persons responsible for the preparation of the Sustainability Report, and applying analytical and other limited assurance procedures. The procedures performed in a limited assurance engagement vary in nature from, and are less in extent than for, a reasonable assurance engagement conducted in accordance with IAASB's Standards on Auditing and other generally accepted auditing standards in Sweden. Hence, the conclusion based on our limited assurance procedures does not comprise the same level of assurance as the conclusion of our reasonable assurance procedures. Since this assurance engagement is combined, our conclusions regarding the reasonable assurance and the limited assurance will be presented in separate sections.

Our reasonable assurance engagement includes the following:

- a. Financial indicators (except environmental-related costs) found on page 2,
- b. Jet fuel and carbon dioxide (CO<sub>2</sub>) emissions related to SAS flight operations on page 2 and 15

The audit firm applies ISQC 1 (*International Standard on Quality Control*) and accordingly maintains a comprehensive system of quality control including documented policies and procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.

Our procedures are based on the criteria defined by the Board of Directors and the Group Management as described above. We consider these criteria suitable for the preparation of the Sustainability Report.

We believe that the evidence we have obtained is sufficient and appropriate to provide a basis for our conclusions below.

## CONCLUSIONS

Based on the limited assurance procedures we have performed, nothing has come to our attention that causes us to believe that the Sustainability Report is not prepared, in all material respects, in accordance with the criteria defined by the Board of Directors and Group Management.

In our opinion the information in the Sustainability Report which has been subject to our reasonable assurance procedures have, in all material respects, been prepared in accordance with the criteria defined by the Board of Directors and Group Management.

Stockholm, 29 January 2018

PricewaterhouseCoopers AB

Bo Hjalmarsson  
Authorized Public Accountant

Fredrik Ljungdahl  
Expert Member of FAR

