Abridged

# *Environmental Statement 2019*

**Including the Environmental Program until 2020**
**For the organizations Fraport AG (Fraport parent company), N*ICE, FCS, GCS and FraGround at Frankfurt Airport**

Fraport

*Update of the Environmental Statement 2017*

EMAS
Geprüftes Umweltmanagement
DE-125-00032

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# *Environmental Management at Frankfurt Airport*

Since 1999, Fraport AG at Frankfurt Airport has been regularly validated by government accredited and inspected environmental auditors. The basis for this audit is the European regulation "Eco-Management and Audit Scheme" (EMAS). Since 2002, the verification has also been carried out in accordance with the international standard ISO 14001. These audits in conformity with EMAS and ISO 14001 also included Fraport Cargo Services GmbH (FCS) since 2008, N*ICE Aircraft Services & Support GmbH (N*ICE) since 2009 and Energy Air GmbH since 2014. Energy Air GmbH is also validated in accordance with the international ISO 50001 standard. New additions to the EMAS network in 2017 include the subsidiary companies FraGround Fraport Ground Services GmbH (FraGround) and GCS Gesellschaft für Cleaning Service mbH & Co. Airport Frankfurt/Main KG (GCS). Energy Air GmbH was sold in 2019 and is no longer part of the Fraport EMAS group.

## Additional Environmental Figures

The environmental figures have been presented in the Environmental Statement in accordance with the Global Reporting Initiative (GRI) Performance Indicators Series 300 "Environment", supplemented by some specific indicators for the airport. The present Environmental Statement also includes indicators in accordance with the expanded GRI performance indicators for airports, "Airport Operators Sector Supplement (AOSS)".

# Environmental Figures

**Frankfurt Airport, Fraport parent company, FCS, N*ICE, GCS, FraGround**

Aspects in accordance with the Global Reporting Initiative (GRI) performance indicators "Environment" and "Airport Operators Sector Supplement (AOSS)", subset "environment".

Values partially rounded; minor deviations may occur.

| *Employees* | *Unit* | *Comment* | *2015* | *2016* | *2017* | *2018* |
|---|---|---|---|---|---|---|
| *Fraport parent company* | *Number* | *1* | *11,401* | *11,164* | *10,747* | ***10,595*** |
| *FCS* | *Number* | *1* | *411* | *449* | *503* | *515* |
| *N*ICE* | *Number* | *1* | *41* | *40* | *43* | *44* |
| *FraGround* | *Number* | *1* | *3,267* | *3,025* | *3,331* | *3,744* |
| *GCS* | *Number* | *1* | *618* | *657* | *689* | *729* |

*[1] Employees = Permanent employees + temporary staff (school children, students, interns, marginally employed and trainees) + apprentices, exempted employees, status December of every year.*

| ***AO1 – Passengers*** | | | | | | |
|---|---|---|---|---|---|---|
| *Traffic volume* | *Unit* | *Comment* | *2015* | *2016* | *2017* | *2018* |
| *Passengers* | *Number of passengers* | | *61,040,613* | *60,792,308* | *64,505,151* | *69,510,269* |

| ***AO2 – Aircraft movements*** | | | | | | |
|---|---|---|---|---|---|---|
| *Traffic volume* | *Unit* | *Comment* | *2015* | *2016* | *2017* | *2018* |
| *Frankfurt Airport (FRA)* | | | | | | |
| *Traffic unit (without transit)* | *TU* | *1, 2* | *81,682,024* | *81,827,352* | *86,354,959* | *91,179,071* |
| *Aircraft movements (landing + take-off)* | *Number of movements* | | *468,153* | *462,885* | *475,537* | *512,115* |
| *Therein at night* | *Number of movements* | *3* | *31,013* | *31,274* | *32,912* | *35,648* |

*[1] TU = A traffic unit is equivalent to one passenger with baggage or 100 kg of airfreight or airmail.*

*[2] Commercial and non-commercial traffic.*

*[3] Nighttime: 22:00 to 06:00.*

| ***AO3 – Cargovolume*** | | | | | | |
|---|---|---|---|---|---|---|
| *Traffic volume* | *Unit* | *Comment* | *2015* | *2016* | *2017* | *2018* |
| *Airfreight* | *t* | | *2,030,861* | *2,067,257* | *2,143,622* | *2,176,387* |
| *Airmail* | *t* | | *83,718* | *85,220* | *85,348* | *89,795* |
| *Therein FCS* | | | | | | |
| *Cargo-Volume* | | | | | | |
| *Airfreight* | *t* | | *525,528* | *637,670* | *735,524* | *678,094* |
| *Traffic units* | *TU* | *1* | *5,255,280* | *6,376,700* | *7,355,240* | *6,780,940* |

*[1] TU = A traffic unit is equivalent to one passenger with baggage or 100 kg of airfreight or airmail.*

| GRI 302: Energy | | | | | | |
|---|---|---|---|---|---|---|
| **GRI 302-1** | **Unit** | **Comment** | **2015** | **2016** | **2017** | **2018** |
| **Direct energy consumption** | | | | | | |
| Frankfurt Airport | | 1, 2, 3 | | | | |
| Purchased direct non-renewable energy sources | TJ | | 796.80 | 842.31 | 826.76 | 816.02 |
| Natural gas | TJ | | 83.99 | 97.61 | 95.07 | 81.09 |
| Natural gas | million kWh | 3 | 23.330 | 27.120 | 26.410 | 22.525 |
| Liquefied petroleum gas (LPG) | TJ | | 8.40 | 7.05 | 8.44 | 7.17 |
| Liquefied petroleum gas (LPG) | m³ | 3 | 353 | 296 | 355 | 301 |
| Heating oil | TJ | | 93.6 | 115.2 | 98.9 | 93.7 |
| Heating oil | million liters | 3 | 2.592 | 3.190 | 2.738 | 2.595 |
| Diesel | TJ | | 556.4 | 564.1 | 562.6 | 569.63 |
| Diesel | million liters | | 15.630 | 15.850 | 15.804 | 16.001 |
| Gasoline | TJ | | 49.9 | 54.2 | 57.1 | 59.36 |
| Gasoline | million liters | | 1.540 | 1.670 | 1.761 | 1.832 |
| Kerosene (Jet A1) | TJ | 6 | 4.54 | 4.12 | 4.65 | 5.07 |
| Kerosene (Jet A1) | million liters | 6 | 0.131 | 0.118 | 0.134 | 0.146 |
| Therein Fraport parent company | | | | | | |
| Purchased direct non-renewable energy sources | TJ | 2 | 483.10 | 495.90 | 494.96 | 505.6 |
| Natural gas | TJ | | 5.8 | 5.5 | 5.6 | 4.5 |
| Natural gas | million kWh | | 1.599 | 1.524 | 1.554 | 1.255 |
| Liquefied petroleum gas (LPG) | TJ | | 8.4 | 7.0 | 8.4 | 7.2 |
| Liquefied petroleum gas (LPG) | m³ | | 353 | 296 | 355 | 301 |
| Heating oil | TJ | | 87.5 | 110.3 | 93.3 | 87.7 |
| Heating oil | million liters | | 2.424 | 3.056 | 2.585 | 2.430 |
| Diesel | TJ | | 346.7 | 335.1 | 345.2 | 361.6 |
| Diesel | million liters | 4 | 9.740 | 9.410 | 9.696 | 10.157 |
| Gasoline | TJ | | 32.6 | 36.0 | 40.1 | 42.1 |
| Gasoline | million liters | 4 | 1.005 | 1.112 | 1.239 | 1.299 |
| Kerosene (Jet A1) | TJ | 6 | 2.1 | 1.9 | 2.3 | 2.5 |
| Kerosene (Jet A1) | million liters | 6 | 0.062 | 0.054 | 0.066 | 0.072 |
| Total energy consumption | | | | | | |
| Renewable energy sources | % | | <1 | <1 | <1 | <1 |
| Non-renewable energy sources | % | | 100 | 100 | 100 | 100 |
| Therein FCS | | | | | | |
| Purchased direct non-renewable energy sources | TJ | | 5.67 | 6.39 | 6.52 | 5.00 |
| Diesel | TJ | | 5.20 | 5.93 | 6.07 | 4.60 |
| Diesel | million liters | | 0.146 | 0.167 | 0.170 | 0.129 |
| Gasoline | TJ | | 0.47 | 0.46 | 0.45 | 0.40 |
| Gasoline | million liters | | 0.014 | 0.014 | 0.014 | 0.012 |
| Total energy consumption | | | | | | |
| Renewable energy sources | % | | 0 | 0 | 0 | 0 |
| Non-renewable energy sources | % | | 100 | 100 | 100 | 100 |
| Therein N*ICE | | | | | | |
| Purchased direct non-renewable energy sources | TJ | | 14.94 | 13.93 | 16.35 | 13.82 |
| Diesel | TJ | | 14.88 | 13.88 | 16.30 | 13.74 |
| Diesel | million liters | 5 | 0.418 | 0.390 | 0.458 | 0.386 |
| Gasoline | TJ | | 0.06 | 0.05 | 0.05 | 0.07 |
| Gasoline | million liters | | 0.002 | 0.002 | 0.002 | 0.002 |
| Total energy consumption | | | | | | |
| Renewable energy sources | % | | 0 | 0 | 0 | 0 |
| Non-renewable energy sources | % | | 100 | 100 | 100 | 100 |
| Therein FraGround | | | | | | |
| Purchased direct non-renewable energy sources | TJ | | 0.39 | 0.35 | 0.40 | 0.37 |
| Diesel | TJ | | 0.25 | 0.25 | 0.27 | 0.22 |
| Diesel | million liters | 4 | 0.007 | 0.007 | 0.008 | 0.006 |
| Gasoline | TJ | | 0.13 | 0.08 | 0.12 | 0.14 |
| Gasoline | million liters | 4 | 0.004 | 0.003 | 0.004 | 0.004 |
| Total energy consumption | | | | | | |
| Renewable energy sources | % | | 0 | 0 | 0 | 0 |
| Non-renewable energy sources | % | | 100 | 100 | 100 | 100 |

| GRI 302: Energy | | | | | | |
|---|---|---|---|---|---|---|
| **GRI 302-1** | **Unit** | **Comment** | **2015** | **2016** | **2017** | **2018** |
| **Direct energy consumption** | | | | | | |
| Therein GCS | | | | | | |
| Purchased direct non-renewable energy sources | TJ | | 1.21 | 1.32 | 2.08 | 2.05 |
| Diesel | TJ | | 1.10 | 1.30 | 1.62 | 1.52 |
| Diesel | million liters | 4, 7 | 0.041 | 0.058 | 0.046 | 0.043 |
| Gasoline | TJ | | 0.09 | 0.06 | 0.46 | 0.53 |
| Gasoline | million liters | 4, 7 | 0.005 | 0.006 | 0.014 | 0.016 |
| Total energy consumption | | | | | | |
| Renewable energy sources | % | | 0 | 0 | 0 | 0 |
| Non-renewable energy sources | % | | 100 | 100 | 100 | 100 |

[1] All companies on the composite owned land of Frankfurt Airport (Fraport parent company, subsidiaries of Fraport AG, more than 500 third parties) to the extent data are available.

[2] All data including technical losses, as far as known.

[3] Consumption of natural gas by third parties based on information that cannot be verified.

[4] The fuel consumption for private use of company cars is not taken into account.

[5] The level of consumption depends on the number of deicing operations (see indicator "Number of deiced aircraft" in the category traffic volume).

[6] Kerosene consumption of air start units.

[7] The consumption data were recalculated and adjusted owing to incorrect data for the years 2014 – 2016.

TJ = Terajoule

| GRI 302: Energy | | | | | | |
|---|---|---|---|---|---|---|
| **GRI 302-1** | **Unit** | **Comment** | **2015** | **2016** | **2017** | **2018** |
| **Indirect energy consumption** | | | | | | |
| Frankfurt Airport | | 1, 2 | | | | |
| Purchased energy | TJ | | 4,093.8 | 4,154.3 | 4,072.1 | 3,954.7 |
| Electricity | TJ | | 2,202.1 | 2,162.4 | 2,106.9 | 2,083.0 |
| Electricity | million kWh | | 611.692 | 600.658 | 585.256 | 578.603 |
| District heating | TJ | | 1,377.2 | 1,488.4 | 1,464.6 | 1,329.7 |
| District heating | million kWh | | 382.550 | 413.450 | 406.834 | 369.358 |
| District cooling | TJ | | 514.5 | 503.5 | 500.6 | 542.0 |
| District cooling | million kWh | | 142.914 | 139.854 | 139.060 | 150.565 |
| Indirect energy consumption | | | | | | |
| Renewable energy sources | % | | 32.90 | 38.90 | 47.40 | 47.90 |
| Non-renewable energy sources | % | | 67.10 | 61.10 | 52.60 | 52.10 |
| Therein Fraport parent company | | | | | | |
| Purchased energy | TJ | | 2,240.0 | 2,279.9 | 2,236.6 | 2,180.8 |
| Electricity | TJ | | 1,181.7 | 1,171.6 | 1,151.7 | 1,129.3 |
| Electricity | million kWh | | 328.236 | 325.441 | 319.923 | 313.695 |
| District heating | TJ | | 634.4 | 691.5 | 670.2 | 596.2 |
| District heating | million kWh | | 176.209 | 192.087 | 186.155 | 165.604 |
| District cooling | TJ | | 424.0 | 416.8 | 414.8 | 455.3 |
| District cooling | million kWh | | 117.768 | 115.769 | 115.209 | 126.465 |
| Indirect energy consumption | | | | | | |
| Renewable energy sources | % | | 32.5 | 37.7 | 45.7 | 45.9 |
| Non-renewable energy sources | % | | 67.5 | 62.3 | 54.3 | 54.1 |

| GRI 302: Energy | | | | | | |
|---|---|---|---|---|---|---|
| **GRI 302-1** | **Unit** | **Comment** | **2015** | **2016** | **2017** | **2018** |
| **Indirect energy consumption** | | | | | | |
| Therein FCS | | | | | | |
| Purchased energy | TJ | | 28.75 | 37.53 | 36.09 | 40.81 |
| Electricity | TJ | | 11.44 | 16.05 | 18.87 | 19.93 |
| Electricity | million kWh | | 3.178 | 4.458 | 5.242 | 5.535 |
| District heating | TJ | | 17.31 | 21.48 | 17.22 | 20.89 |
| District heating | million kWh | | 4.808 | 5.967 | 4.783 | 5.802 |
| Indirect energy consumption | | | | | | |
| Renewable energy sources | % | | 32.5 | 37.7 | 45.7 | 45.9 |
| Non-renewable energy sources | % | | 67.5 | 62.3 | 54.3 | 54.1 |
| Therein N*ICE | | | | | | |
| Purchased energy | TJ | | 3.56 | 3.25 | 4.23 | 4.52 |
| Electricity | TJ | | 3.26 | 2.93 | 3.81 | 3.72 |
| Electricity | million kWh | | 0.905 | 0.813 | 1.057 | 1.032 |
| District heating | TJ | | 0.30 | 0.32 | 0.43 | 0.80 |
| District heating | million kWh | | 0.083 | 0.089 | 0.118 | 0.222 |
| Indirect energy consumption | | | | | | |
| Renewable energy sources | % | | 32.5 | 37.7 | 45.7 | 45.9 |
| Non-renewable energy sources | % | | 67.5 | 62.3 | 54.3 | 54.1 |
| Therein FraGround | | | | | | |
| Purchased energy | TJ | | 2.23 | 2.43 | 2.16 | 2.07 |
| Electricity | TJ | 3 | 1.42 | 1.45 | 1.35 | 1.24 |
| Electricity | million kWh | 3 | 0.395 | 0.403 | 0.376 | 0.346 |
| District heating | TJ | | 0.75 | 0.93 | 0.77 | 0.78 |
| District heating | million kWh | | 0.208 | 0.258 | 0.213 | 0.217 |
| District cooling | TJ | 3 | 0.06 | 0.04 | 0.04 | 0.05 |
| District cooling | million kWh | 3 | 0.015 | 0.012 | 0.010 | 0.013 |
| Indirect energy consumption | | | | | | |
| Renewable energy sources | % | | 32.5 | 37.7 | 45.7 | 100 |
| Non-renewable energy sources | % | | 67.5 | 62.3 | 54.3 | 0 |
| Therein GCS | | | | | | |
| Purchased energy | TJ | | 1.98 | 1.97 | 2.20 | 2.19 |
| Electricity | TJ | | 1.90 | 1.89 | 2.10 | 2.09 |
| Electricity | million kWh | | 0.529 | 0.526 | 0.582 | 0.581 |
| District heating | TJ | | 0.08 | 0.08 | 0.11 | 0.10 |
| District heating | million kWh | | 0.022 | 0.021 | 0.030 | 0.027 |
| Indirect energy consumption | | | | | | |
| Renewable energy sources | % | | 32.5 | 37.7 | 45.7 | 100 |
| Non-renewable energy sources | % | | 67.5 | 62.3 | 54.3 | 0 |

[1] *All companies on the contiguous property area of Frankfurt Airport: Fraport parent company, subsidiaries of Fraport AG, more than 500 third parties.*

[2] *All data including technical losses, as far as known.*

[3] *Corrected to take account of district cooling.*

*TJ = Terajoule*

| GRI 302: Energy | | | | | | |
|---|---|---|---|---|---|---|
| **GRI 302-3 Energy intensity** | **Unit** | **Comment** | **2015** | **2016** | **2017** | **2018** |
| Frankfurt Airport | | 1, 2, 3 | | | | |
| Specific total consumption | TJ per million TU | | 59.90 | 61.10 | 56.73 | 52.32 |
| Purchased direct non-renewable energy sources | TJ per million TU | 4 | 9.80 | 10.30 | 9.57 | 8.95 |
| Purchased energy | TJ per million TU | 4 | 50.10 | 50.80 | 47.16 | 43.37 |
| Therein Fraport parent company | | | | | | |
| Specific total consumption | TJ per million TU | | 33.33 | 33.96 | 31.63 | 29.46 |
| Purchased direct non-renewable energy sources | TJ per million TU | 4 | 5.91 | 6.06 | 5.73 | 5.55 |
| Purchased energy | TJ per million TU | 4 | 27.42 | 27.90 | 25.90 | 23.92 |

[1] All companies on the contiguous property area of Frankfurt Airport: Fraport parent company, subsidiaries of Fraport AG, more than 500 third parties.

[2] All data including technical losses, as far as known.

[3] Consumption of third parties partly due to information that cannot be verified.

[4] TU = A traffic unit is equivalent to one passenger with baggage or 100 kg of airfreight or airmail.

TJ = Terajoule

| GRI 302: Energy | | | | | | |
|---|---|---|---|---|---|---|
| **GRI 302-4** | **Unit** | **Comment** | **2015** | **2016** | **2017** | **2018** |
| **Reduction of energy consumption** | | | | | | |
| Fraport parent company | | | | | | |
| Reduction of energy consumption | million kWh | 1, 2, 3 | 30.07 | 42.35 | 69.91 | 94.92 |

[1] Based on the year 2008, accumulated effects from the year 2008, to the extent effective in subsequent years.

[2] Calculation of energy which has been saved for reasons of improved procedures, replacement and upgrading of systems and equipment, and modified employee behavior.

[3] Includes calculated savings from completed projects.

| GRI 303: Water | | | | | | |
|---|---|---|---|---|---|---|
| **GRI 303-1** | **Unit** | **Comment** | **2015** | **2016** | **2017** | **2018** |
| **Total water consumption** | | | | | | |
| Frankfurt Airport | | 1 | | | | |
| Total water consumption | million m³ | | 1.774 | 1.757 | 1.764 | 2.164 |
| Total water consumption | liters per TU | 2 | 21.70 | 21.47 | 20.43 | 23.73 |
| Drinking water | million m³ | 4 | 1.431 | 1.373 | 1.274 | 1.346 |
| Service water | million m³ | 3, 5 | 0.343 | 0.384 | 0.490 | 0.818 |
| Fraport parent company | | | | | | |
| Total water consumption | million m³ | 7, 9 | 1.088 | 1.031 | 1.023 | 1.416 |
| Total water consumption | liters per TU | 2, 9 | 13.3 | 12.6 | 11.8 | 15.5 |
| Drinking water | million m³ | 4 | 0.819 | 0.723 | 0.615 | 0.689 |
| Service water | million m³ | 5, 9 | 0.269 | 0.308 | 0.408 | 0.727 |
| Therein FCS | | | | | | |
| Total water consumption | million m³ | | 0.009 | 0.009 | 0.009 | 0.008 |
| Drinking water | million m³ | 4 | 0.009 | 0.009 | 0.009 | 0.008 |
| Service water | m³ | | – | – | – | – |
| Therein N*ICE | | | | | | |
| Total water consumption | million m³ | 6 | 0.009 | 0.009 | 0.010 | 0.011 |
| Drinking water | million m³ | 4, 6 | 0.006 | 0.006 | 0.007 | 0.008 |
| Service water | million m³ | 5 | 0.003 | 0.003 | 0.003 | 0.003 |
| Therein GCS | | | | | | |
| Total water consumption | million m³ | | 0.002 | 0.005 | 0.005 | 0.005 |
| Drinking water | million m³ | 4, 8 | 0.002 | 0.005 | 0.005 | 0.005 |
| Service water | m³ | | – | – | – | – |

[1] All companies on the contiguous property area of Frankfurt Airport: Fraport parent company, subsidiaries of Fraport AG, more than 500 third parties.

[2] TU = A traffic unit is equivalent to one passenger with baggage or 100 kg of airfreight or airmail.

[3] Less share of drinking water at service water treatment in Terminal 2.

[4] From the local authority water supply.

[5] The service water is treated from surface water, rainwater and ground water. Contains subsets, which are estimated.

[6] Water is used to dilute the aircraft deicing agents. In cold and snowy winters larger amounts are needed for de-icing. The water consumption therefore rises accordingly. The period from January to March 2013 was snowy, the winter 2013/14 was conversely exceptionally mild.

[7] Total consumption for the airport minus consumption by third parties at the Frankfurt Airport site.

[8] Laundry operation of GCS since July 2015.

[9] Temporarily rising usage because of the construction of Terminal 3.

| GRI 303: Water | | | | | | |
|---|---|---|---|---|---|---|
| AO4 Quality of precipitation water | Unit | Comment | 2015 | 2016 | 2017 | 2018 |
| Frankfurt Airport | | | | | | |
| Hydrocarbons | mg/l | 1 | 0.1 | 0.08 | <0.1 | <0.1 |
| Materials capable of being deposited | ml/l | 1 | 0.3 | 0.28 | 0.23 | <0.1 |

[1] A 2 h mixed sample is collected each month from the precipitation water channel at a sampling test station located shortly before the discharge point into the River Main. The value for hydrocarbons was calculated from twelve individual samples, the value for "substances capable of being deposited" from eleven individual samples.

| GRI 304: Biodiversity | | | | | | |
|---|---|---|---|---|---|---|
| GRI 304-1<br>Land use | Unit | Comment | 2015 | 2016 | 2017 | 2018 |
| Frankfurt Airport | | | | | | |
| Owned land by Fraport AG | ha | 1 | 2,283.54 | 2,283.54 | 2,284.00 | 2,284.84 |
| of which paved area | ha | | 1,084.61 | 1,091.00 | 1,092.00 | 1,103.90 |

[1] Continuous owned land.

| GRI 305: Emissions | | | | | | |
|---|---|---|---|---|---|---|
| GRI 305-1 Direct (Scope 1) and GRI 305-2 indirect (Scope 2) Greenhouse gas emissions | Unit | Comment | 2015 | 2016 | 2017 | 2018 |
| Fraport parent company | | | | | | |
| $CO_2$ emissions | 1.000 t $CO_2$ | 1 | 218.3 | 209.3 | 190.1 | 188.6 |
| Direct $CO_2$ emissions | 1.000 t $CO_2$ | 1 | 35.5 | 36.5 | 36.4 | 37.2 |
| Indirect $CO_2$ emissions | 1.000 t $CO_2$ | 2 | 182.8 | 172.8 | 153.7 | 151.4 |
| compensated $CO_2$ emissions (certificates) | 1.000 t $CO_2$ | | 0 | 0 | 0 | 0 |
| Other relevant greenhouse gas emissions | t $CO_2$-equivalent | 3 | <2 | <2 | <2 | <2 |
| FCS | | | | | | |
| $CO_2$ emissions | 1.000 t $CO_2$ | 1 | 2.60 | 3.30 | 3.15 | 3.37 |
| Direct $CO_2$ emissions | 1.000 t $CO_2$ | 1 | 0.40 | 0.50 | 0.48 | 0.37 |
| Indirect $CO_2$ emissions | 1.000 t $CO_2$ | 2 | 2.20 | 2.80 | 2.67 | 3.00 |
| N*ICE | | | | | | |
| $CO_2$ emissions | 1.000 t $CO_2$ | 1 | 1.50 | 1.30 | 1.60 | 1.43 |
| Direct $CO_2$ emissions | 1.000 t $CO_2$ | 1 | 1.10 | 1.00 | 1.21 | 1.02 |
| Indirect $CO_2$ emissions | 1.000 t $CO_2$ | 2 | 0.40 | 0.30 | 0.39 | 0.41 |
| FraGround | | | | | | |
| $CO_2$ emissions | 1.000 t $CO_2$ | 1 | 0.24 | 0.23 | 0.20 | 0.07 |
| Direct $CO_2$ emissions | 1.000 t $CO_2$ | 1 | 0.03 | 0.02 | 0.03 | 0.03 |
| Indirect $CO_2$ emissions | 1.000 t $CO_2$ | 2 | 0.21 | 0.21 | 0.17 | 0.04 |
| GCS | | | | | | |
| $CO_2$ emissions | 1.000 t $CO_2$ | 1 | 0.36 | 0.39 | 0.36 | 0.16 |
| Direct $CO_2$ emissions | 1.000 t $CO_2$ | 1 | 0.12 | 0.17 | 0.15 | 0.15 |
| Indirect $CO_2$ emissions | 1.000 t $CO_2$ | 2 | 0.24 | 0.22 | 0.21 | 0.00 |

[1] Direct emission in conformity with Scope 1 GHG Protocol Standard: fuels, fuels for combustion plants, here heating oil, natural gas, propane gas.

[2] Indirect emissions in conformity with Scope 2 GHG Protocol Standard: purchasing of electricity (Fraport Group), district heating, district cooling (Fraport at the Frankfurt site).

[3] Only negligible amounts of additional greenhouse gases (such as $CH_4$, $N_2O$) are under the influence of Fraport parent company.

| GRI 305: Emissions | | | | | | |
|---|---|---|---|---|---|---|
| **GRI 305-3** | **Unit** | **Comment** | **2015** | **2016** | **2017** | **2018** |
| **Other indirect (Scope 3) GHG emissions** | | | | | | |
| Fraport parent company | | | | | | |
| Air traffic | 1.000 t $CO_2$ | 1 | 952.2 | 936.2 | 937.8 | 1009.7 |
| Employee traffic at Fraport parent company and third parties at Frankfurt Airport | 1.000 t $CO_2$ | 2 | 112.8 | 115.0 | 112.0 | 106.6 |
| Passenger traffic (passengers originated here) | 1.000 t $CO_2$ | 3, 7 | 201.3 | 173.2 | 185.0 | 198.9 |
| Business trips of employees at Fraport parent company | 1.000 t $CO_2$ | 4 | 0.70 | 0.81 | 0.90 | 0.80 |
| Energy consumption of third parties (infrastructure and vehicles) | 1.000 t $CO_2$ | 5, 8 | 179.5 | 202.3 | 189.7 | 183.5 |
| Other relevant greenhouse gas emissions | t $CO_2$-equivalent | 6 | <2 | <2 | <2 | <2 |

[1] Air traffic up to 914 m (LTO cycle) of all aircraft landing and taking off at Frankfurt Airport, use of APU.

[2] Travel by employees to and from the workplace.

[3] Travel to and from the airport by passengers, travel in private vehicles and public transport.

[4] Includes car, rail, and air travel.

[5] Electricity, heat, cooling, fuels.

[6] According to investigations carried out in 2005, the emissions of other greenhouse gases at the airport were negligible.

[7] Increase of aircraft movements and passengers in 2018.

[8] Third party electricity consumption retroactively assessed from 2016 with national emission factor.

| GRI 305: Emissions | | | | | | |
|---|---|---|---|---|---|---|
| **GRI 305-4** | **Unit** | **Comment** | **2015** | **2016** | **2017** | **2018** |
| **Climate intensity according to GHG** | | | | | | |
| Fraport parent company | | | | | | |
| Climate intensity of traffic performance | kg $CO_2$ per TU | 3 | 2.68 | 2.56 | 2.20 | 2.07 |
| Direct $CO_2$ emissions | kg $CO_2$ per TU | 1, 3 | 0.44 | 0.45 | 0.42 | 0.41 |
| Indirect $CO_2$ emissions | kg $CO_2$ per TU | 2, 3 | 2.24 | 2.11 | 1.78 | 1.66 |

[1] Direct emission in conformity with Scope 1 GHG Protocol Standard: fuels, fuels for combustion plants, here heating oil, natural gas, propane gas.

[2] Indirect emissions in conformity with Scope 2 GHG Protocol Standard: purchasing of electricity, district heating, district cooling.

[3] TU = A traffic unit is equivalent to one passenger with baggage or 100 kg of airfreight or airmail.

| GRI 305: Emissions | | | | | | |
|---|---|---|---|---|---|---|
| **GRI 305-7 Air polluting emissions** | **Unit** | **Comment** | **2015** | **2016** | **2017** | **2018** |
| Air traffic at Frankfurt Airport | | 1 | | | | |
| NOx | t | 2 | 2,513 | 2,510 | 2,517 | 2,711 |
| HC | t | 2 | 410 | 387 | 389 | 417 |
| PM10 | t | 2 | 23 | 23 | 23 | 25 |
| $SO_2$ | t | 2 | 168 | 165 | 164 | 177 |
| NOx | g per TU | 2, 3 | 30.77 | 30.67 | 29.15 | 29.73 |
| HC | g per TU | 2, 3 | 5.02 | 4.73 | 4.50 | 4.57 |
| PM10 | g per TU | 2, 3 | 0.28 | 0.28 | 0.27 | 0.27 |
| $SO_2$ | g per TU | 2, 3 | 2.06 | 2.02 | 1.90 | 1.94 |
| Fraport parent company | | | | | | |
| NOx | t | 4 | – | – | – | – |
| Benzene | t | 4 | – | – | – | – |
| PM10 (Fine dust <10 µm) | t | 4 | – | – | – | – |

[1] Caused by 110 to 114 different airlines depending on timetable (summer, winter), only indirectly influenced by Fraport.

[2] Air traffic: emissions in tons per calendar year up to an altitude of 300 meter (taxiing, starting, climb, descent incl, rollout, engine ignition, APU), Up to an altitude of 300 meters the emissions have a regional effect.

[3] TU = A traffic unit is equivalent to a passenger with baggage or 100 kg of airfreight or airmail.

[4] Fraport parent company emits per year approximately 264 t NOx, 0,4 t benzene and 9,3 t PM10, These data are derived from the zoning plan documents, An annual update is not yet possible because determining the data is very complex, In future, the data are to be calculated on a continuous basis, the necessary processes are currently being prepared.

| GRI 306: Wastewater and waste | | | | | | |
|---|---|---|---|---|---|---|
| **GRI 306-1 Discharge of wastewater** | **Unit** | **Comment** | **2015** | **2016** | **2017** | **2018** |
| Frankfurt Airport | | | | | | |
| Sewage water | million m³ | 1, 2 | 1.986 | 1.820 | 1.966 | 2.156 |
| Sewage water | Liters per TU | 3 | 26.3 | 22.2 | 22.8 | 23.6 |

[1] Wastewater from Fraport parent company and more than 500 other companies at Frankfurt Airport. The disposal of sewage water from Frankfurt Airport is carried out by Fraport AG, allocation to individual companies is not possible.

[2] Wastewater is treated in the fully biological water-treatment plant at the Fraport parent company, as well as at fully biological water-treatment plants in Frankfurt Niederrad and Frankfurt Sindlingen. Since 2013, the separation of the precipitation water contaminated with deicing agents has brought about an increased dependence of the amount of sewage water on the nature of the weather conditions in the relevant winter.

[3] TU = A traffic unit is equivalent to one passenger with baggage or 100 kg of airfreight or airmail.

| GRI 306: Wastewater and waste | | | | | | |
|---|---|---|---|---|---|---|
| **GRI 306-2** | **Unit** | **Comment** | **2015** | **2016** | **2017** | **2018** |
| **Waste by type and disposal method** | | | | | | |
| Fraport parent company | | | | | | |
| Amount of waste | 1.000 t | 1, 2 | 21.49 | 19.52 | 20.36 | 20.94 |
| Amount of waste | kg per TU | 3 | 0.26 | 0.24 | 0.24 | 0.23 |
| Hazardous waste | 1.000 t | 1, 2 | 1.60 | 1.51 | 2.19 | 1.77 |
| Non-hazardous waste | 1.000 t | 1, 2 | 19.88 | 18.00 | 18.17 | 19.17 |
| Total recoverability | 1.000 t | 1, 2 | 19.15 | 17.65 | 18.39 | 18.94 |
| Total disposal | 1.000 t | 1, 2 | 2.34 | 1.87 | 1.97 | 2.00 |
| Total recoverability rate | % | 1, 2 | 89.1 | 90.4 | 90.3 | 90.5 |
| Waste from international flights | 1.000 t | | 5.00 | 4.51 | 4.62 | 4.65 |
| FCS | | | | | | |
| Amount of waste | 1.000 t | 1 | 0.946 | 1.303 | 1.668 | 1.667 |
| Hazardous waste | t | 1 | 0 | 0 | 0 | 0 |
| Non-hazardous waste | 1.000 t | 1 | 0.95 | 1.30 | 1.67 | 1.67 |
| Total recoverability | 1.000 t | 1 | 0.91 | 1.26 | 1.61 | 1.61 |
| Total disposal | t | 1 | 39.9 | 47.6 | 58.0 | 58.0 |
| Total recoverability rate | % | 1 | 95.8 | 96.3 | 96.5 | 96.5 |
| N*ICE | | | | | | |
| Amount of waste | 1.000 t | 1, 5 | 0.13 | 0.10 | 0.13 | 0.10 |
| Hazardous waste | 1.000 t | 1 | 0 | 0 | 0 | 0 |
| Non-hazardous waste | 1.000 t | 1, 5 | 0.13 | 0.10 | 0.13 | 0.10 |
| Total recoverability | 1.000 t | 1, 4 | 0.13 | 0.10 | 0.13 | 0.10 |
| Total disposal | 1.000 t | 1 | 0 | 0 | 0 | 0 |
| Total recoverability rate | % | 1 | 100 | 100 | 100 | 100 |
| FraGround | | | | | | |
| Amount of waste | 1.000 t | 7 | 15.31 | 5.60 | 4.84 | |
| Hazardous waste | 1.000 t | 7 | 0 | 0 | 0 | |
| Non-hazardous waste | 1.000 t | 7 | 15.31 | 5.60 | 4.84 | |
| Total recoverability | 1.000 t | 7 | 15.31 | 5.60 | 4.84 | |
| Total disposal | 1.000 t | 7 | 0 | 0 | 0 | |
| Verwertungs-Quote gesamt | % | 7 | 100 | 100 | 100 | |
| GCS | | | | | | |
| Amount of waste | 1.000 t | 6 | | | | |
| Hazardous waste | 1.000 t | 6 | | | | |
| Non-hazardous waste | 1.000 t | 6 | | | | |
| Total recoverability | 1.000 t | 6 | | | | |
| Total disposal | 1.000 t | 6 | | | | |
| Total recoverability rate | % | 6 | | | | |

[1] Without soil and building rubble.

[2] Including waste from third parties, primarily residual waste out of aircraft (no catering waste) and without soil and building rubble.

[3] TU = A traffic unit is equivalent to a passenger with baggage or 100 kg of airfreight or airmail.

[4] Aircraft deicing agents.

[5] The total amount is a mixture of water and Type I/Type IV fluids.

[6] Waste is disposed of through Fraport and forms part of the footprint balance sheet there.

[7] Starting in 2018, waste will be disposed of via Fraport and will therefore be included in Fraport's statistical balance sheet.

| GRI 306: Wastewater and waste | | | | | | |
|---|---|---|---|---|---|---|
| **GRI 306-3 Significant spills** | **Unit** | **Comment** | **2015** | **2016** | **2017** | **2018** |
| Fraport parent company | | 1 | | | | |
| Total number and volume of significant spills | | | | | | |
| Number of spills | Number | | 735 | 779 | 762 | 532 |
| Volume of spills | m³ | | 8.00 | 8.22 | 10.37 | 9.00 |
| Frequency of spills | Number per 1.000 aircraft movements | | 1.57 | 1.68 | 1.60 | 1.04 |
| Effects | | 2 | none | none | none | none |

[1] Spills primarily by third parties.

[2] No environmental hazard because releases are generally on surfaced areas with comprehensive safety installations implemented downstream. Spills on not surfaced areas are very rare exceptions, and are cleared up immediately.

| GRI 306: Wastewater and waste | | | | | | |
|---|---|---|---|---|---|---|
| **Groundwater improvement** | **Unit** | **Comment** | **2015** | **2016** | **2017** | **2018** |
| Frankfurt Airport | | | | | | |
| Nitrate content at reference measuring station well FB5 | mg/l | 1 | 29 | 29 | 28 | 27 |

[1] Yearly average value.

| AO5 – Air quality | | | | | | |
|---|---|---|---|---|---|---|
| | **Unit** | **Comment** | **2015** | **2016** | **2017** | **2018** |
| Frankfurt Airport | | 1, 2 | | | | |
| $NO_2$ | µg/m³ | 3 | 46 | 45 | 42 | 43 |
| $SO_2$ | µg/m³ | 4 | 2 | 2 | 2 | 2 |
| PM10 (fine dust < 10 µm ) | µg/m³ | 5 | 18 | 17 | 17 | 18 |
| Benzene | µg/m³ | 6 | 0.7 | 0.7 | 0.5 | 0.6 |

[1] Annual average of the measured values at the SOMMI1 Station. These values presented the aggregated result of all emissions from different source groups, i.e. apart from pollutants contributed by the airport they also include emissions from third parties (road traffic, trade and industry, house fires, large-scale background pollution). The proportion of the airport depends on the location, and model calculations indicate that the proportion here is between approx. 10% and 30%.

[2] Limit values/annual average (not applicable at the airport, since no whole-year exposure).

[3] $NO_2$ assessment value according to EU Directive 2008/50/EC, 39. Federal Emission Control Act (BImSchV): 40 µg/m³.

[4] $SO_2$ assessment according to Technical Instructions on Air Quality Control (TA Luft) 2002 (otherwise no annual average defined): 50 µg/m³.

[5] Fine dust, PM10 in accordance with EU Directive 2008/50/EC, 39. Federal Emission Control Act (BImSchV): 40 µg/m³.

6 Benzene assessment value in accordance with EU Directive 2008/50/EC, 39. Federal Emission Control Act (BImSchV): 5 mg/m³.

| AO6 – Airfield surfaces and aircraft deicing agents | | | | | | |
|---|---|---|---|---|---|---|
| | **Unit** | **Comment** | **2015** | **2016** | **2017** | **2018** |
| Fraport parent company | | | | | | |
| Airfield surfaces deicing agent: potassium format (fluid – approx. 50% agent), applied on the aircraft move-ment areas | m³ | | 924 | 766 | 2,394 | 1,324 |
| Airfield surfaces deicing agent: sodium formate (granulate – approx. 100% agent) | m³ | | 246 | 121 | 457 | 250 |
| Road salt (NaCl) | m³ | | 636 | 286 | 988 | 1,291 |
| N*ICE | | | | | | |
| Deiced aircraft | Number | 1 | 4,047 | 4,982 | 6,480 | 5,517 |
| Aircraft deicing agent: propylene glycol (N*ICE) | m³ active ingredient | | 1,082 | 1,108 | 1,835 | 1,318 |
| Aircraft deicing agents: propylene glycol; per de-iced aircraft (N*ICE) | m³ substance per aircraft | | 0,267 | 0,222 | 0,283 | 0,239 |

[1] Annual values are weather-dependent, the winter in 2013/14 was very mild.

| Transport | | | | | | |
|---|---|---|---|---|---|---|
| | Unit | Comment | 2015 | 2016 | 2017 | 2018 |
| Fraport parent company | | | | | | |
| Employee traffic | | | | | | |
| Travel to and from work by public transport | Share of employees in % | 1 | 32.1 | 30.2 | 31.2 | 30.3 |
| Travel to and from work by carpooling | Share of employees in % | 1 | 14.5 | 14.8 | 13.6 | 12.8 |
| Passenger traffic at Frankfurt Airport (FRA) | | | | | | |
| Travel of originating passengers to and from the airport by public transport | Share of employees in % | 1 | 35.4 | 33.8 | 34.1 | 34.5 |
| therein arrival/departure by ICE (Intercity Express) | Share of employees in % | 1 | 14.5 | 11.3 | 11.6 | 12.1 |

[1] The values are based on a survey.

| AO7 – Aircraft noise | | | | | | |
|---|---|---|---|---|---|---|
| AO7 Number and percentage of people* residing in areas affected by noise | Unit | Comment | 2015 | 2016 | 2017 | 2018 |
| Frankfurt Airport | | | | | | |
| Number of people residing in the contour Leq, day = 60 dB(A) (criterion provided for in the Act for Protection against Aircraft Noise) | Number | 1, 2 | 3,000 | 2,781 | 2,929 | |
| Relative change compared with the previous year | Percent | | –9 | –7 | 5 | |
| Number of people residing in the contour Leq, day = 60 dB(A) (criterion provided for in the Act for Protection against Aircraft Noise)** | Number | 1, 2 | | | 1,601 | 1,989 |
| Relative change compared with the previous year | Percent | | | | –42 | 24 |
| Number of people residing in the contour Leq, day = 55 dB(A) (Criterion similar Act for Protection against Aircraft Noise) | Number | 1, 3, 4 | 102,958 | 99,117 | 96,774 | |
| Relative change compared with the previous year | Percent | | 2 | –4 | –2 | |
| Number of people residing in the contour Leq, day = 55 dB(A) (Criterion similar Act for Protection against Aircraft Noise)** | Number | 1, 3, 4 | | | 73,377 | 82,374 |
| Relative change compared with the previous year | Percent | | | | –26 | 12 |
| Number of people residing in the contour of the envelope from NAT, night = 6 x 68 dB(A) and Leq, night = 50 dB(A) (Criterion similar Act for Protection against Aircraft Noise) | Number | 1, 5 | 72,462 | 68,571 | 78,819 | |
| Relative change compared with the previous year | Percent | | –4 | –5 | 15 | |
| Number of people residing in the contour of the envelope from NAT, night = 6 x 68 dB(A) and Leq, night = 50 dB(A) (Criterion similar Act for Protection against Aircraft Noise)** | Number | 1, 5 | | | 73,901 | 75,036 |
| Relative change compared with the previous year | Percent | | | | 8 | 2 |

* Figures based on DDS population database. The data reference year for all evaluations is 2010. Updating the data reference year to 2010 results in a slightly changed number of residents in the relevant contours in the years up to 2014 compared to previous publications.

** The values were calculated by applying modified approaches for calculating aircraft noise (with resulting reductions) as described under 1.

[1] The aircraft noise contours were calculated on the basis of two national regulations: "Introduction to Calculation of Noise Abatement Areas (AzB)" and "Introduction to data collection on Flight Operations (AzD, 2008)". All scenarios were standardized on the basis of the long-term average operating direction distribution for the ten years 2000 to 2009. The Sigma supplement developed for the projected protection zone calculation in accordance with the Noise Abatement Act and described in AzB and AzD was not applied. From the year 2017, aircraft noise calculation takes account of the fact that new aircraft types – particularly on takeoff – generate significantly lower noise emissions than older aircraft types with similar capacities. The first of these new aircraft types was the Airbus A380, followed by the Boeing B787, A320neo, A350 and other aircraft. From 2017, these new, quieter aircraft types will be removed from the relevant AzB aircraft groups in the data recording system and provided with modified approaches for calculating noise emission during takeoff and landing compared with the "classic" AzB aircraft groups. These changes correspond to those that have been agreed for the relevant aircraft types in the context of the agreements on the "noise upper limit" between the players involved. Starting with the A380 in 2010, the new aircraft types are increasingly being used in Frankfurt. This means that the aircraft noise contours calculated between 2010 and 2016 and the relevant resident numbers determined in this regard were increasingly overestimated.

[2] The criterion Leq, day = 60 dB(A) is based on the definition of day protection zone 1 in accordance with the Aircraft Noise Abatement Act.

[3] The criterion Leq, day = 55 dB(A) is based on the definition of day protection zone 2 in accordance with the Aircraft Noise Abatement Act.

[4] The data on Leq, day = 55 dB(A) is the total number within this contour, the number specified under Leq, day = 60 dB(A) is therefore a sub-quantity.

[5] The criterion envelope from NAT, night = 6 x 68 dB(A) and Leq, night = 50 dB(A) is based on the definition of night protection zone according to the Aircraft Noise Abatement Act.

| AO7 – Aircraft noise | | | | | | |
|---|---|---|---|---|---|---|
| | Unit | Comment | 2015 | 2016 | 2017 | 2018 |
| Surrounding area of Frankfurt Airport | | | | | | |
| Approach | | 1 | | | | |
| Monitoring station 01 Offenbach Lauterborn, day | Leq(3) in dB(A) | 2, 3 | 57 | 57 | 58 | 56 |
| Monitoring station 01 Offenbach Lauterborn, day* | Leq(3) in dB(A) | 2, 3 | | | 56.0 | 53.9 |
| Monitoring station 01 Offenbach Lauterborn, night | Leq(3) in dB(A) | 2, 4 | 51 | 52 | 52 | 51 |
| Monitoring station 01 Offenbach Lauterborn, night* | Leq(3) in dB(A) | 2, 4 | | | 51.2 | 49.1 |
| Monitoring station 06 Raunheim, day | Leq(3) in dB(A) | 2, 3 | 61 | 61 | 59 | 62 |
| Monitoring station 06 Raunheim, day* | Leq(3) in dB(A) | 2, 3 | | | 58.8 | 61.6 |
| Monitoring station 06 Raunheim, night | Leq(3) in dB(A) | 2, 4 | 54 | 54 | 53 | 54 |
| Monitoring station 06 Raunheim, night* | Leq(3) in dB(A) | 2, 4 | | | 52.7 | 54.2 |
| Take off | | 1 | | | | |
| Monitoring station 12 Bad Weilbach, day | Leq(3) in dB(A) | 2, 3 | 55 | 55 | 56 | 53 |
| Monitoring station 12 Bad Weilbach, day* | Leq(3) in dB(A) | 2, 3 | | | 55.1 | 52.2 |
| Monitoring station 12 Bad Weilbach, night | Leq(3) in dB(A) | 2, 4 | 47 | 48 | 48 | 47 |
| Monitoring station 12 Bad Weilbach, night* | Leq(3) in dB(A) | 2, 4 | | | 47.1 | 46.1 |
| Monitoring station 51 Worfelden, day | Leq(3) in dB(A) | 2, 3 | 57 | 57 | 57 | 58 |
| Monitoring station 51 Worfelden, day* | Leq(3) in dB(A) | 2, 3 | | | 56.3 | 56.6 |
| Monitoring station 51 Worfelden, night | Leq(3) in dB(A) | 2, 4 | 52 | 53 | 53 | 52 |
| Monitoring station 51 Worfelden, night* | Leq(3) in dB(A) | 2, 4 | | | 52.2 | 52.0 |
| Frequency of the exceedance of the maximum level of 68 dB(A) per night | | 1, 4 | | | | |
| Monitoring station 01 Offenbach Lauterborn | Number of exceedance cases | 5 | 14.1 | 16.3 | 17.4 | 11.2 |
| Monitoring station 06 Raunheim | Number of exceedance cases | 5 | 9.6 | 8.5 | 8.3 | 15.4 |
| Monitoring station 12 Bad Weilbach | Number of exceedance cases | 5 | 4.7 | 5.3 | 5.2 | 4.2 |
| Monitoring station 51 Worfelden | Number of exceedance cases | 5 | 14.8 | 15.6 | 17.2 | 17.7 |
| Share of western operations day | Share in % | 3, 6, 7 | 67.3 | 66.9 | 78.7 | 49.7 |
| Share of western operations night | Share in % | 4, 6, 7 | 69.6 | 68.4 | 76.2 | 50.0 |

** new conformity with DIN 45643:2011*

*[1] Selected representative noise-monitoring station from a monitoring network with 28 static stations.*

*[2] Energy equivalent continuous sound level [Leq(3) in dB(A)] based on the German Aircraft Noise Act in conformity with DIN 45643. Leq(3) is calculated during the six busiest months from May until October in the years 2009, 2010 und 2012 based on the German Aircraft Noise Act, segmented in day and night. Exception was the year 2011, with the six busiest months of March, May, July and October. Changes to the monitoring stations on the approach and takeoff routes of the parallel runway system are mainly based on the fluctuations in the distribution of operations (easterly/westerly) from year to year caused by different weather conditions or wind directions. The website www.fraport.de provides detailed information.*

*[3] Daytime: 06:00 to 22:00.*

*[4] Nighttime: 22:00 to 06:00.*

*[5] During the six busiest months (2015, 2016, 2017, 2018: May until October).*

*[6] From the parallel runway system with takeoff toward the west, approach from the east.*

*[7] Share of easterly operations: difference from share of westerly operations in % to 100%.*

| Health and safety of the customers | | | | | | |
|---|---|---|---|---|---|---|
| AO9 Total number of wildlife strikes per 10,000 movements | Unit | Comment | 2015 | 2016 | 2017 | 2018 |
| Frankfurt Airport (bird strikes) | Number per 10,000 aircraft movements | 1, 2 | 2.61 | 4.86 | | |
| Frankfurt Airport (wildlife strikes) | Number per 10,000 aircraft movements | | | | 5.59 | 5.34 |

*[1] In order to comply with the new reporting system that came into force with the introduction of EU Directive no. 376/2014, the Statistics Section in the German Committee for Prevention of Bird Strikes in Air Traffic (DAVVL) was restructured in 2017 and the content was amended. The bird strike rates from 2016 will therefore not be comparable with the bird strike rates from previous years.*

*[2] The significant increase in bird-strike figures corresponds to the prevailing trend throughout Germany. It should not be assumed that the number of bird strikes has increased but rather the number of notifications. This is because pursuant to the EU Directive VO 376/2014 und DVO (EU) 2015/1080 Appendix IV all airport operators, ground handling services and pilots throughout Europe have had a uniform obligation to report security-relevant incidents (in this case bird strikes) since November 2015.*

**Compliance with statutory regulations**

*There are no breaches of statutory regulations which have been subject to fines or non-monetary sanctions imposed by the authorities, and no proceedings in relation to such breaches are pending.*

# *Status of the Environmental Program 2017 to 2020*

The Environmental Program for 2017 describes the most important goals and measures that the Fraport parent company and the NICE, FCS, FraGround and GCS subsidiaries have defined for Frankfurt Airport up until 2020 and beyond for the issues of noise abatement, climate protection, intermodality, air quality, nature con-servation and protection of resources.

The measures of the Fraport parent company are not particularly marked.

**Key for status:**

Measure fulfilled > 90% to 100% or established as a continuous process

Measure continues to apply in the Environmental Program 2017 and/or Measure partly fulfilled

Measure could not be implemented

The measures of Fraport Cargo Services GmbH are marked with FCS, those of N*ICE Aircraft Services & Support GmbH are marked with N*ICE, those of FraGround Fraport Ground Services GmbH are marked with FraGround and those of GCS Gesellschaft für Cleaning Service mbH & Co. Airport Frankfurt/Main KG are marked with GCS.

The environmental program of the Fraport parent company is shown in abbreviated form in the sustainability program.

## Noise abatement

| *Target* | *Measure* | *Deadline* | | *Status June 2019* |
|---|---|---|---|---|
| *Achieving a lower number of people impacted by aircraft noise than specified in the expansion plan with 701,000 aircraft move-ments (night pro-tection zone = 183,026 residents, day protection zone 1 = 28,980 residents).** | *Further development of noise-related airport charges with incentives for fleet renewal.* | *2020* | | *The proportion of noise-related takeoff and landing fees as a share of the total volume of airport fees has continued to rise.* |
| | *Continuation of the dialog with stake-holders from the region in the "Airport and Region Forum" on development of further measures.* | *Unlimited* | | *A new program of measures for active noise abatement was published by the "Airport and Region Forum" in January 2018. It addresses 17 measures distributed across three pillars. Pillar I comprises seven measures to be implemented over the short-term and medium-term; pillar II describes six long-term measures that require more de-tailed research; and pillar III has four measures that are directed toward improving the political and legal frame-work conditions for proactively improving noise abatement. Additional information: https://www.forum-flughafen-region.de/presse/neues-massnahmenprogramm-aktiver-schallschutz/* |

** In November 2017, the Hesse State Government reached an agreement on a voluntary upper limit for noise at Frankfurt Airport with Fraport, the airlines, the German Bureau for Air Traffic Control (DFS) and the "Airport and Region Forum". The corresponding area-based target replaces the previous population-related target (see Environmental Statement 2017, p. 56).*

## Climate protection

| Target | Measure | Deadline | | Status June 2019 |
|---|---|---|---|---|
| *Reduction of absolute $CO_2$ emissions by 65 percent to 80,000 tons by 2030 (Fraport parent company, Scopes 1 and 2 GHG Protocol, baseline year 1990).*<br><br>*Reduction of specific $CO_2$ emissions by 84 percent, to 0.9 kg/traffic unit by 2030 (Fraport parent company, Scopes 1 and 2 GHG Protocol, baseline year 1990).* | *Energy optimization in portfolio buildings operated by the Fraport parent company*<br>*– In the terminals*<br>*– In office and service buildings.* | *2030* | | *Measures carried out at the terminal: upgrading ventilation control centers, optimizing air throughputs, switching off pumps and lighting controls. Potential achieved at the end of 2018: 22.000 t $CO_2$/year.*<br>*Measures carried out in service and administrative buildings: optimization of hydraulics and controls for controlling circuits, optimization of air-conditioning systems, regulation of air-control system based on weather forecasts, lighting retrofitted to LED. Potential achieved at the end of 2018: 4.300 t $CO_2$/year.* |
| | *Planning and construction-integrated implementation of an energy-optimized new terminal (T3).* | *Construction integrated implementation* | | *Measures in phase of implementation: planned technical systems have been optimized by complex building simulations and will provide sustainable operation of the new terminal building by means of a building envelope with a high level of thermal insulation, needs based sun protection, optimized daylight use, free cooling, highly efficient heat recovery, efficient energy distribution, comprehensive use of LEDs, utilization of the building's own dissipated heat, etc.* |
| | *Implementation of measures to achieve energy savings in the baggage conveyor system.* | *2020* | | *Implemented measures:*<br>*reduction of drive power in "early baggage" stores, distributors, feeders, modification of the controls for improved shutdown of the baggage conveyor system during off-peak periods, and reduction of gliding friction by replacing belts at heighteners. Potential achieved: 1.700 t $CO_2$/year.* |
| | *Expansion of the electric vehicle fleet (focus on ground handling services).* | *2020* | | *By the end of 2018 the ground handling services operate a total of 26 electric vehicles. These vehicles include electric and hybrid equipment. Potential achieved thanks to entire e-fleet achieved by the end of 2018: 416 t $CO_2$.*<br>*A funded project for two electric buses was launched in 2018. The bus will be delivered in November 2019.* |
| *Reduction of energy consumption.*<br>***(N*ICE)*** | *Launch of a standby mode for dedicated onboard planning IT relating to aircraft de-icing vehicles so that the engine can be switched off during waiting times.* | *2018* | | *Measure has been implemented.* |
| | *Strategic instruction for users of the N*ICE administrative building to encourage effective handling and use of electrically powered equipment.* | *2020* | | *Measure has been implemented.* |
| | *Optimization of energy consumption at the de-icing agent tank facilities.* | *2020* | | *The optimization goal is further pursued and observed during annual maintenance and repair.* |
| *Reduction of air pollutant emissions and $CO_2$ emissions in the vehicle fleet.*<br>***(FCS)*** | *Conversion of up to three forklift trucks to gas-operated forklifts.* | *2020* | | *Information is currently being collected and evaluated with various manufacturers.* |
| | *Analysis of the opportunities for using alternative drives (electric, gas, fuel-cell technology) also in other types of vehicle.* | *2020* | | *Information is currently being collected and evaluated with various manufacturers.* |
| *Reduction of electricity consumption at the head office by 14,000 kWh each year.*<br>***(FraGround)*** | *Replacing old client PCs with a new generation of client PCs* | *2018* | | *Due to optimization of joint operation with ground handling services (consolidation of premises), electricity consumption was reduced by approximately 20,000 kWh in 2018.*<br>*The further replacement of old client PCs will be delayed until probably the end of 2019/start of 2020 because of an issue with the Microsoft office suite.* |

## Climate protection (continuation)

| Target | Measure | Deadline | | Status June 2019 |
|---|---|---|---|---|
| *Reduction of direct $CO_2$ emissions of 152,946 kg of $CO_2$ in the year 2017, by 7,647 t $CO_2$ (5%) to 145,298 kg $CO_2$ in 2019.* **(GCS)** | *Training sessions for resource-saving driving styles and the targeted substitution of discontinued vehicles with a better $CO_2$ footprint.* | *2019* | | *Driver training courses are currently being planned. Targeted adjustment of replacement purchases of vehicles with better $CO_2$-values (still in implementation).* |
| *Reduction of indirect $CO_2$ emissions (arising from electricity consumption).* **(GCS)** | *Procurement of regenerative electricity (green electricity),* | *2018* | | *Adjustment to green electricity implemented in January 2018.* |
| ** TU: one passenger with baggage or 100 kg of airfreight or air mail.* | | | | |

## Traffic

| Target | Measure | Deadline | | Status June 2019 |
|---|---|---|---|---|
| *Improvement in intermodal services for passengers.* | *"Control Center" project with HOLM, TU Dresden, German Rail (Deutsche Bahn), the RMV public transportation network (Rhein-Main-Verkehrsverbund) and Fraport.* | *2018* | | *A prototype is available for a central information platform for the simulation and forecast of the operational development in public transport with consideration of the flight schedule in Frankfurt. Project will be continued in a modified form without the participation of Fraport (integration of weather and delay data as a part of an intelligent traffic system, for example).* |
| | *Partnership in the EU sponsored project "DORA" (door to door passenger information).* | *2018* | | *Project completed. The results of the cooperation with VMZ (Berlin) are incorporated into the ConnectFRA project. This is an app development by Fraport AG.* |
| | *Establishment of information boards with passenger information on public passenger transport connections in Terminal 1 and 2.* | *2023* | | *New measure, partly implemented in the terminals; implementation planned at the bus station.* |
| *Improvement in the conditions for cycling in the area of the airport.* | *Improving signage for cycle paths, establishing bicycle pools for employees and etting up modern cycle parking facilities.* | *2020* | | *Project fulfilled. The results of the cooperation with VMZ (Berlin) are incorporated into the ConnectFRA project. This is an app development by Fraport AG.* |

## Air quality

| Target | Measure | Deadline | | Status June 2019 |
|---|---|---|---|---|
| *Reduction of emissions and air pollutants from the operation of the airport.* | *Introduction of electric ground-handling vehicles (see also under climate protection: use of alternative-drive technologies).* | *2020* | | *See under climate protection: use of alternative drive technologies.* |

## Nature conservation and resource protection

| Target | Measure | Deadline | | Status June 2019 |
|---|---|---|---|---|
| *Reduction of the consumption of drinking water by increasing the use of service water in the southern zone* to 50%.* | *Connecting new buildings to the service water network.* | *2020* | | *The share of service water in total water consumption in the buildings of CargoCity South is currently 45%.* |
| *Reduction in the use of de-icing fluid.* ***(N*ICE)*** | *Expanding simulator training for aircraft de-icing personnel .* | *2018* | | *Measure is implemented – Simulation-training is an integral part of the training.* |
| *Reduction in the volume of copy paper used by 5% – 10% compared with 2016 (5065 kg).* ***(FraGround)*** | *Introduction of web-based monthly accounting.* | *2017* | | *Due to new design requirements, the introduction of web-based duty rosters and monthly accounts has been further delayed. At the same time, the possibility of an information app for employees is being investigated.*<br>*In addition, paper consumption increased as a result of the increase in the number of staff and the introduction of further training courses, with the effect that more paper documents had to be produced.* |
| *Reduction of the consumption of paper by 7% to 1.3 kg/K€ cost of materials for raw materials, consumables and office supplies (base-line year 2016).* ***(GCS)*** | *Removing desktop printers from offices and setting up a central printing station.*<br>*Reduction of forms and paper documentation by digitalization of processes in the operational area.* | *2018* | | *The installation of a central printing station has not yet taken place for technical reasons. The measure to abolish the desktop printer is still pending.*<br>*Several orders are documented electronically, including for the repair and cleaning of wheelchairs by FraCares or the setup and dismantling of tensabarrier lining for different airline companies, as well as regarding complaints from "third-party customers" and special orders.*<br>*Paper consumption was constant in 2018 compared to 2017.* |
| *Reduction of the consumption of cleaning agents by 10% to 10.7 kg per 100,000 m² cleaned (baseline year 2016).* ***(GCS)*** | *Substitution of hazardous cleaning materials with the use of vacuum pumps and coils to deal with blockages.*<br>*Use of dosing caps.*<br>*Systematically raising the awareness of employees.*<br>*Provision of training documents on the cleaning cart.* | *2017* | | *The target was reached in 2017. GCS was able to reduce consumption to 6.5 kg/100,000 cleaned sqm.*<br>*The target was achieved, among other things, thanks to the commitment of executives, training sessions on handling resources and the right measuring levels with dosing caps, and an illustrated training document with fundamentals for environmentally-friendly handling of resources, which is provided to each employee for their work.*<br>*For the year 2019, GCS expects improved use of resources because of further projects for optimizing the setup of cleaning carts.* |

** This refers to the area at the south of Runway 07R/25L. CargoCity South, the Development Area South for projects including the future Terminal 3, and maintenance facilities, for example Lufthansa, are located here.*

# *Environmental Auditor's Declaration on Verification and Validation Activities*

The Institut für Umwelttechnik Dr. Kühnemann und Partner GmbH
with registration number . . . . . DE-V-0133,

represented by Dr. Burckhard Kühnemann with registration number . . . . . DE-V-0103
and Ulrich Schmidt with registration number . . . . . DE-V-0366,

accredited or licensed for the scope . . . . . NACE 52.23,

declares to have verified whether the site or the whole organization
as indicated in the updated environmental statement of the
organization Fraport AG with registration number . . . . . DE-125-00032

meets all requirements of Regulation (EC) No 1221/2009 of the European Parliament and of the Council of 25 November 2009 on the voluntary participation by organizations in a Community eco-management and audit scheme (EMAS), modified by amendment regulation (EU) 2017/1505 dated 28 August 2017.

By signing this declaration, I declare that:

- the verification and validation has been carried out in full compliance with the requirements of Regulation (EC) No 1221/2009,
- the outcome of the verification and validation confirms that there is no evidence of non-compliance with applicable legal requirements relating to the environment,
- the data and information of the updated environmental statement of the organization reflect a reliable, credible and correct image of all the site's activities, within the scope mentioned in the environmental statement.

This document is not equivalent to EMAS registration. EMAS registration can only be granted by a Competent Body under Regulation (EC) No 1221/2009. This document shall not be used as a stand-alone piece of public communication.

Carried out at Frankfurt on August 21, 2019

Dr. Kühnemann und Partner Institut für Umwelt

Business address: Prinzenstraße 10a, 30159 Hannover
Registration number: DE-V-0133

**Schedule**
The next Environmental Statement, scheduled for July 2020, will be subject to validation by an environmental auditor before being released for publication.

## Imprint

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As of 11. July 2019

* *20 cents per call from a German landline, regardless of the duration of the call, max. 60 cents from mobile network*

** *for questions regarding aircraft noise and airport expansion, toll-free number within Germany*

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