

## C0. Introduction

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### C0.1

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#### (C0.1) Give a general description and introduction to your organization.

Established in 1933, Turkish Airlines has been the flag carrier airline of the Republic of Türkiye for 89 years. Turkish Airlines' main fields of activity are all types of domestic and international passenger and cargo air transportation. Turkish Airlines, which was originally established as a wholly state-owned enterprise, was included in the scope of privatization in 1990. Today, 50.88 per cent of the Company's shares have been offered to the public and T.C. the 49.12 per cent share in the Privatization Administration of the Ministry of Treasury and Finance was transferred to the Türkiye Wealth Fund in 2017. 1 Group C share is owned by T.C. It belongs to the Privatization Administration of the Ministry of Treasury and Finance.

The paid-in capital of the Incorporation is TL 1.38 billion. The Incorporation owns seven subsidiaries and 12 joint ventures, adding up to 19 in total. Subsidiaries mainly consist of companies that provide services in the fields of maintenance, catering, ground handling and fuel supply. As the airline flying to most countries and international destinations in the world, Turkish Airlines flies to a total of 333 destinations of which 52 are domestic and 272 are international (As of the end of 2021, flights are performed to 115 countries, 254 cities and 259 destinations due to force majeure.). Turkish Airlines increased the number of aircraft in its fleet by 12.5 % in the last 5 years to 370 by the end of 2021, of which 350 are passenger aircraft including 104 wide-body and 246 narrow-body and 20 are freighters.

Turkish Airlines, which is listed on the Istanbul Stock Exchange (BIST) under the name "THYAO", is subject to the provisions of the Turkish Commercial Code (TTK) and the regulations of the Capital Markets Board (CMB). Adopting the principles of transparency, fairness, responsibility and accountability in all its operations, Turkish Airlines complies with all mandatory principles from the Corporate Governance Principles determined by the Capital Markets Board and pays utmost attention to complying with non-mandatory principles. Turkish Airlines' Board of Directors consists of nine members, three of which are independent, and elected by the General Assembly.

Turkish Airlines, together with its subsidiaries, employs more than 60 thousand people worldwide. Turkish Airlines has grown steadily at double-digit rates in the last 10 years, becoming one of the airlines with the largest global network in the world.

Our Incorporation has managed to maintain the strong growth trend that it has been carrying out for more than 11 years with the increasing service quality in cargo operations, without any interruption this year. Turkish Airlines has been a member of Star Alliance since 2008.

Turkish Airlines, the airline that flies to most countries in the world, connects many points in Türkiye and the world with its flight network reaching 128 countries, 328 cities and 333 destinations. Carrying 28 million passengers in 2020, Turkish Airlines carried 44.8 million passengers with 377 aircraft in its fleet in 2021, making it the airline with the least decrease in passenger numbers among its competitors. We are deeply committed to our goal of contributing to sustainable development by carrying out our activities with a sense of responsibility towards society, the economy and the environment. Our sustainability program is built on four pillars: Governance, Prosperity, People and the Planet, each of which contains many important topics within its own structure. In the 2021 reporting process, firstly the material issues were identified. In this context, a subject universe consisting of the ones which might be important to the aviation sector was formed at first. While creating this universe, both the main topics and sub-topics that could be considered under these main topics were included by utilizing the contents of reporting frameworks such as WEF Global Risk Reports, GRI, SASB, the 17 Sustainable Development Goals of UN, sectoral and competitor practices as well as stakeholder expectations. The identified issues were evaluated via online surveys with external stakeholders, members of working groups, company executives and employees in various categories of Turkish Airlines. The results were evaluated in a workshop where a training session was held with a team of nearly 100 executives. As a result of the evaluation, the tables of material issues, SDGs and stakeholders were finalized.

Our material issues approved by the Senior Management are shown in the materiality matrix. Except for three of the key topics covered, the others are internal matters; Global economic crisis, human-caused environmental disasters and international crises are important external issues.

#### The Most Material Issues

Flight Safety and Security

Climate Change

Employee Health, Safety and Well-being

Customer Expectation and Behavior Change

Fleet Modernization and Development

Digitalization

Business Continuity

Talent Management

### C0.2

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**(C0.2) State the start and end date of the year for which you are reporting data.**

|                | Start date     | End date         | Indicate if you are providing emissions data for past reporting years | Select the number of past reporting years you will be providing emissions data for |
|----------------|----------------|------------------|---|--|
| Reporting year | January 1 2021 | December 31 2021 | No  | <Not Applicable>   |

**C0.3**

**(C0.3) Select the countries/areas in which you operate.**

Turkey

**C0.4**

**(C0.4) Select the currency used for all financial information disclosed throughout your response.**

USD

**C0.5**

**(C0.5) Select the option that describes the reporting boundary for which climate-related impacts on your business are being reported. Note that this option should align with your chosen approach for consolidating your GHG inventory.**

Operational control

**C-T00.7/C-TS0.7**

**(C-T00.7/C-TS0.7) For which transport modes will you be providing data?**

Aviation

**C0.8**

**(C0.8) Does your organization have an ISIN code or another unique identifier (e.g., Ticker, CUSIP, etc.)?**

| Indicate whether you are able to provide a unique identifier for your organization | Provide your unique identifier |
|--|--------------------------------|
| Yes, a Ticker symbol   | THYAO.IS                       |
| Yes, an ISIN code  | TRETHYA00012                   |

**C1. Governance**

**C1.1**

**(C1.1) Is there board-level oversight of climate-related issues within your organization?**

Yes

**C1.1a**

**(C1.1a) Identify the position(s) (do not include any names) of the individual(s) on the board with responsibility for climate-related issues.**

| Position of individual(s)     | Please explain   |
|-------------------------------|--|
| Chief Executive Officer (CEO) | The Sustainability Committee established in 2021 at Turkish Airlines is chaired by the CEO who is the General Manager of the company. The SC consists of the CEO, Chief Human Resources Officer, Chief Cargo Officer, Chief Corporate Development and It Officer, Chief Financial Officer, Chief Marketing Officer, Chief Commercial Officer, Chief Flight Operations Officer, Chief Investment and Technology Officer and Corporate Sustainability Management Manager as Sustainability Committee Secretariat. --How the individual's responsibility is related to climate issues: The CEO is a member of the Board of Directors and is the executive responsible for chairing the Sustainability Committee meetings. Climate-related issues, climate risks, climate strategy of the company and stakeholder expectations are discussed at the SC meetings and reported directly to the Board by the CEO, and therefore decisions taken by the SC are submitted to the approval of the Board at regular Board meetings. Responsibilities of the CEO are to establish and sustain the sustainability strategy, policy, short, medium and long-term targets, to evaluate the results of actions, track the status of sustainability performance indicators, ensure the corrective actions are taken, to evaluate the expectations of the stakeholders that concerned with the current national and international climate regulations. --Example of a climate-related decision made by the CEO within the last two years: Turkish Airlines as a member of IATA planned to adopt IATA's 2050 target. The SC has done the required research and a TÜBİTAK (The Scientific and Technological Research Council of Türkiye) Project of "Microalgae Based Sustainable Bio-Jet Fuel Project (MICRO-JET)" was approved. Within the scope of the project, pilot production of synthetic bio-kerosene using hydrotreated fatty acids (HEFA) and hydrothermal liquefaction (HTL) methods from microalgae started and the first pilot tests were conducted in 2021. In 2022, the biofuel, which is produced entirely from sustainable sources and whose engine tests have been completed by Turkish Technic, will be blended, and used in Turkish Airlines' flights. |

**C1.1b**

**(C1.1b) Provide further details on the board's oversight of climate-related issues.**

| Frequency with which climate-related issues are a scheduled agenda item | Governance mechanisms into which climate-related issues are integrated   | Scope of board-level oversight | Please explain  |
|---|--|--------------------------------|---|
| Scheduled – some meetings   | <ul style="list-style-type: none"> <li>Reviewing and guiding strategy</li> <li>Reviewing and guiding major plans of action</li> <li>Reviewing and guiding risk management policies</li> <li>Reviewing and guiding annual budgets</li> <li>Reviewing and guiding business plans</li> <li>Setting performance objectives</li> <li>Monitoring implementation and performance of objectives</li> <li>Overseeing major capital expenditures, acquisitions and divestitures</li> <li>Monitoring and overseeing progress against goals and targets for addressing climate-related issues</li> </ul> | <Not Applicable>               | Turkish Airlines integrate the sustainability approach into its business strategy in order to leave a more liveable World to future generations. For this purpose, Turkish Airlines works to extend the policies in aspect to all company departments from the management level to the lowest level of our organizational structure. While the responsibility for Turkish Airlines' impacts on the economy, environment and society rests with the Board of Directors and the Executive Committee, a Sustainability Committee(SC) was established in 2021. The Sustainability Committee carries out its activities in order to determine, review and continuously improve the climate-related strategies and targets among sustainability management strategy, sustainability policy, short, medium and long-term sustainability targets of the company. With this structure, the climate-related issues of Turkish Airlines are held at the Board level through the Sustainability Committee. The Sustainability Committee aims to create value by ensuring the economic, social and environmental sustainability aspects carried out at different levels at Turkish Airlines. The SC chaired by the CEO reports directly to the Board at the regular board meetings. The Board of Directors is comprised of nine members, including 3 independent members, elected by the General Assembly. The Board of Directors shall approve the strategic targets, and continuously and effectively monitor these targets, as well as the activities of the Incorporation and its' past performance. In doing so, the Board shall strive to ensure compliance with international standards, and whenever necessary, take pre-emptive action to potential problems. |

**C1.1d**

**(C1.1d) Does your organization have at least one board member with competence on climate-related issues?**

|       | Board member(s) have competence on climate-related issues | Criteria used to assess competence of board member(s) on climate-related issues  | Primary reason for no board-level competence on climate-related issues | Explain why your organization does not have at least one board member with competence on climate-related issues and any plans to address board-level competence in the future |
|-------|---|--|--|---|
| Row 1 | Yes   | Our Chief Operational Officer, Mehmet Kadaifçiler, one of our Board members, received ISO 14001 Environmental Management System and ISO 14064 Greenhouse Gas Awareness Training. | <Not Applicable>   | <Not Applicable>  |

**C1.2**

**(C1.2) Provide the highest management-level position(s) or committee(s) with responsibility for climate-related issues.**

| Name of the position(s) and/or committee(s) | Reporting line   | Responsibility  | Coverage of responsibility | Frequency of reporting to the board on climate-related issues |
|---|------------------|---|----------------------------|---|
| Chief Executive Officer (CEO)               | <Not Applicable> | Both assessing and managing climate-related risks and opportunities | <Not Applicable>           | More frequently than quarterly                                |

**C1.2a**

**(C1.2a) Describe where in the organizational structure this/these position(s) and/or committees lie, what their associated responsibilities are, and how climate-related issues are monitored (do not include the names of individuals).**

The Board of Directors is comprised of nine members, including 3 independent members, elected by the General Assembly. The Board of Directors shall approve the strategic targets, and continuously and effectively monitor these targets, as well as the activities of the Incorporation and its' past performance. In doing so, the Board shall strive to ensure compliance with international standards, and whenever necessary, take pre-emptive action to potential problems.

The Board of Directors consists of Chairman of the Board of Directors and the Executive Committee, Deputy Chairman of the Board of Directors and the Executive Committee, Member of the Board of Directors / General Manager, Member of the Board of Directors and the Executive Committee / Chief Financial Officer, Member of the Board of Directors and the Executive Committee / Chief Flight Operations Officer, Member of the Board of Directors, 2 Independent Member of the Board of Directors, Independent Member of the Board of Directors and the Executive Committee.

The Sustainability Committee(SC) at Turkish Airlines carries out its activities in order to determine, review and continuously improve the climate-related strategies and targets among sustainability management strategy, sustainability policy, short, medium, and long-term sustainability targets of the company and chaired by the CEO who is the General Manager of the company and a Board member. The CEO is the executive responsible for chairing the SC meetings. Climate-related issues, climate risks, climate strategy of the company, and stakeholder expectations are discussed at the SC meetings and reported directly to the Board by the CEO, and therefore decisions taken by the SC are submitted to the approval of the Board at regular Board meetings.

Duties and Responsibilities are to ensure that the necessary studies are carried out to determine the sustainability strategy, policy, short, medium and long-term goals of the company, To monitor, review and, if necessary, rearrange the short, medium and long-term objectives of the Sustainability Policy, To ensure that sustainability risks and opportunities in environmental, social and governance issues are managed and integrated into the sustainability strategy of the company, To ensure that necessary studies are carried out within the company in order to comply with national and international legislation, standards, rules, contracts, procedures and requirements in the field of sustainability, Evaluating the expectations of the stakeholders concerned with the current national and international developments in sustainability, ensuring that the best practices are projected within the Incorporation and monitoring the progress of the projects, Analysing the results by monitoring the status of sustainability performance indicators and ensuring that improvement actions are taken if necessary, Ensuring that employees are informed in line with the sustainability strategy and studies are carried out to adopt this strategy as a company culture, To ensure that the sustainability strategy, policy and practices are adopted by all stakeholders of the Incorporation,, Evaluating the requests regarding the Sustainability Performance Evaluations that the company will participate in and deciding whether to participate or not, To evaluate the issues that will affect the activities of the company, which are addressed in the national and international committees, technical teams and working groups of which the Incorporation is a member, responsible for authorizing Sub-Working Groups to be formed in the company.

**C1.3**

**(C1.3) Do you provide incentives for the management of climate-related issues, including the attainment of targets?**

|       | Provide incentives for the management of climate-related issues | Comment  |
|-------|---|--|
| Row 1 | Yes   | Yes. climate crisis affects both the world and our daily lives. For this reason, every climate-related issue affects us both individually and corporately. We show that we take this issue and its importance into account by offering both monetary and non-monetary incentives to promote the management of climate-related issues and raise awareness about it. |

**C1.3a**

**(C1.3a) Provide further details on the incentives provided for the management of climate-related issues (do not include the names of individuals).**

| Entitled to incentive            | Type of incentive | Activity incentivized  | Comment |
|----------------------------------|-------------------|--|---------|
| Other, please specify (Captains) | Monetary reward   | Other (please specify) (Fuel Saving)   |         |
| Chief Operating Officer (COO)    | Monetary reward   | Energy reduction target<br>Efficiency target<br>Behavior change related indicator<br>Company performance against a climate-related sustainability index<br>Other (please specify) (Fuel Saving, Emission Reduction Projects, ) |         |

## C2. Risks and opportunities

### C2.1

**(C2.1) Does your organization have a process for identifying, assessing, and responding to climate-related risks and opportunities?**

Yes

#### C2.1a

**(C2.1a) How does your organization define short-, medium- and long-term time horizons?**

|             | From (years) | To (years) | Comment  |
|-------------|--------------|------------|--|
| Short-term  | 0            | 3          | As our sector, aviation is highly regulated and both investments and technological improvements need time compared to other sectors, we define the short term as between 0 to 3 years, we define the short term as between 0 to 3 years. On the other hand, the effects of negative events in the aviation sector are felt in a short time and can deeply affect the sector. For these reasons, we make our short-term plans based on three year period. Our short-term plans are as follows: -Monitoring the findings of previous audits and planning new internal audits to improve Environmental Management System (EMS) performance -Offsetting of all emissions under the EU ETS for the reporting period.  |
| Medium-term | 3            | 10         | We make our medium-term plans, especially our fleet investments, for a period of 10 years. Considering the dynamics of the sector, the factors affecting aviation are shaped in this time period. Almost all of our emissions are sourced from the combustion of aviation fuel and a new fleet may bring a considerable amount of energy and emission efficiency. Our mid-term plans are as follows: -Ensuring the continuity of compliance with environmental legislation -Ensuring that there are no environmental accidents, environmental emergencies or incidents -In 2022, 5% reduction in electricity. -To realize the amount of recyclable waste, which was 1,400,000 kg for our Domestic Premises in 2021, as 1,470,000 kg and above in 2022. (Since the waste are separated at the source, it is aimed to increase the amount of waste sent for recycling) -To keep the amount of hazardous waste per capita at 3.34 kg/person and below in 2022. -To keep the electricity usage per capita at 2846.9 kWh/person or less in 2022 at the Headquarters, Technology Building, AHL Cargo Building, Sedat Şekerçi Campus, Operations Center Building and C Region Energy Center Management Offices Building. (The realization is 2996.7 kWh/person in 2021.) -5% improvement in natural gas ve water consumption. Turkish Airlines makes substantial efforts to be included in Borsa İstanbul Sustainability Index and international sustainability indices (Dow Jones Sustainability Index, FTSE4Good, MSCI ESG Indices, etc.) In 2021, Turkish Airlines voluntarily participated in the performance evaluations of international indices and sustainability rating organizations such as DJSI, FTSE4Good, MSCI, EcoVadis, Sustainalytics, Vigeo Eiris and TPI . |
| Long-term   | 10           | 20         | We consider the long-term forecasts of national and international organizations in the industry (IATA, ICAO, ACI, Boeing, Airbus, etc.) in our analyses. In addition, depending on technological development and government policies, the effect of long-term expectations may emerge in a shorter time. For this reason, we closely follow long-term goals and expectations and we can reflect them on our medium and short-term goals depending on the developments.   |

#### C2.1b

**(C2.1b) How does your organization define substantive financial or strategic impact on your business?**

We carry out our activities, in other words, our business model in an external environment that includes economic conditions, technological changes, social problems & environmental challenges. This external environment has an impact that creates both risk & opp. for our business model. Therefore, we consider the effects of the external environment on our ability to create value. With this perspective, we believe that climate emergency is a phenomenon that may significantly affect our industry both financially and strategically.

**Definition of substantive financial or strategic impact:** While determining the severity of the risk/opportunity, the compliance requirement, reputation, deviation from the process target, loss of income, occupational health and safety, and cost increase effects are taken into consideration. While determining the risk/opportunity severity level, the "Process Risk and Opportunity Evaluation Procedure Severity Level Table" is evaluated from top to bottom and the severity level corresponding to the first criterion suitable for the risk/opportunity is selected. If the risk/opportunity meets one of the criteria corresponding to the same risk/opportunity severity level, it is sufficient for it to be at the relevant level. According to the "Process Risk and Opportunity Evaluation Procedure," if the risk has a negative impact of more than 15% on Process Revenue, the Risk/Opportunity Severity Level is considered very high.

**Quantifiable indicators used to define substantive financial impact:**

REVENUE 10.686 billion USD (2021)

EBITDA 3.416 billion USD (2021)

MARKET CAP 2.552 billion USD (2021)

15% of the above-mentioned figures are as follows and evaluated as the substantive financial impact on the company.

REVENUE 1.6029 billion USD

EBITDA 512.4 billion USD

MARKET CAP 0.3828 billion USD

Therefore; any risks "including" environmental risks that may lead to above mentioned 15% figures could be qualified as "high risk". Please hence that issues subject to be categorized as high risk are not limited to those examples, as we define it as "process" in our risk procedure.

**C2.2**

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**(C2.2) Describe your process(es) for identifying, assessing and responding to climate-related risks and opportunities.**

**Value chain stage(s) covered**

Direct operations  
Upstream  
Downstream

**Risk management process**

Integrated into multi-disciplinary company-wide risk management process

**Frequency of assessment**

More than once a year

**Time horizon(s) covered**

Short-term  
Medium-term  
Long-term

**Description of process**

In order to determine the financial risk management strategy of the Company and to carry out the necessary actions in the scope of financial risk management, the Treasury and Risk Management Commission has been established. The Commission holds meetings on regular basis under the chairmanship of CFO and participation of SVP Finance, SVP Accounting and Financial Control, VP Treasury and all other related managers. Climate-related risks and opportunities are evaluated, managed, identified and responded to with a company mechanism that is integrated into Turkish airlines' multi-disciplinary company-wide risk management process. There are several departments at Turkish Airlines to handle the risk and opportunities as described below. Risks and Opportunities including climate-related ones are evaluated over the entire value chain of the company. Operational risks, supplier risks at the upstream process and downstream risks are included in the Risk and Opportunities Management Procedures of the company. --IDENTIFICATION of the Risk: Climate-related risks and opportunities are evaluated in accordance with the Environmental SWOT Analysis to attain the targeted outputs of the Environmental Management System through a Risk Assessment approach. In the Environmental SWOT Analysis, the internal strengths and weaknesses and the external opportunities and risks in relation to the climate issues are determined. The assessment of the risks and opportunities is conducted by identifying the current measures in relation to the risks and opportunities and determining the severity level, possibility level, and risk/opportunity coverage actions. To develop the desired effects, to prevent or reduce the undesired effects are as follows: The risks identified as per the "Process Risk and Opportunity Evaluation Procedure" The legal and voluntary legislation that the company is obliged to comply with Environmental processes of the company Stakeholder expectations Environmental risks and opportunities are reviewed more than once a year in case of a change in resources with these above-listed topics and updated if necessary. --ASSESSMENT of the Risk: The risks and opportunities which is detected through the Environmental SWOT Analysis by Quality Assurance Directorate and recorded in the "Determining Environmental Risk/Opportunities Form" are submitted to the operational departments to obtain their opinions in the same way, and these revisions are made if deemed necessary according to the feedback received. The Environmental Risks/Opportunities are analysed by considering the results which are caused by the uncertainty thought to be the source of the risk and opportunity and the possibility of the emergence of those results as defined as whether they cause a substantive impact. In this assessment, the results which are caused by the uncertainty are categorized as the severity score and the possibility of the emergence of those results as the possibility score. The final assessment score of the risk and opportunities are calculated by considering the measures currently taken to mitigate the severity and/or possibility of the risk, and the environmental risks and opportunities are prioritized. While determining the severity level of the risks and opportunities, the "Risk/Opportunity Severity Level Table" is used, which includes indicators such as environmental impact, meeting compliance requirements, impact on reputation and company credibility. Criteria for opportunities are considered positively and for risks negatively. For example, if the severity level of impact of the risk is assessed as "20", the degree of the risk is accepted as "very high" whereas if the severity level is assessed as "0.1", the degree would be "Almost Non-Existing". Risks with "High" and "Very High" severity may have low-Risk Levels when they have low levels of probability. These risks should be taken into consideration in implementation. Whatever their possibilities are, risks with a severity of "High" or "Very High" should be assessed as risks with a Risk Level of "High" or "Unacceptable". --Process for responding to climate-related risks: At Turkish Airlines responding process of risk is handled under the "Planning and Implementation of Improvements for Mitigation of Risks and Meeting of Opportunities" topic. The environmental risks and opportunities which is determined to be Unallowable/High-Priority, High/Prioritized, and Allowable/Assessable are submitted in the Management Evaluation Meetings based on their priorities. The Senior Management decides whether these risks and opportunities are Allowable/Applicable for the Company according to the "Risk and Opportunity Assessment Matrix" of the company. When it is decided to mitigate a detected risk to an allowable level or eliminate it, or apply a seen opportunity, Quality Assurance Department determines the department that can result in the risk. Environmental risks and opportunities defined as "Unacceptable/High Priority", "High/Priority" and "Acceptable/Evaluable" are evaluated in order of priority in "Management Evaluation Meetings". According to the "Risk and Opportunity Evaluation Matrix", the Senior Management decides whether these risks and opportunities are "Acceptable/Applicable" for the company. When it is decided to reduce the determined risk to an acceptable level, eliminate it or implement a determined opportunity, the department that caused the risk is determined by the "Quality Assurance Department". In order to reduce or eliminate the level of risks, - Accepting the Risk - Reducing the Level of Risk - Transfer of Risk methods are evaluated and applied. Accepting the Risk: If the necessary precautions have been taken for the risk and the current risk level has been evaluated as a result of the assessment, the risk is considered acceptable if it is decided to undertake the risk in its current form. Reducing the Risk Level (Risk Avoidance): Creating additional controls to reduce the severity and/or probability of the risk is considered as reducing the risk level. These controls may include new investment, redesign of the process, termination of the relevant activity, etc. may form. Transfer of Risk: It is the transfer of risk in order to reduce or eliminate the effect in case of risk. risk transfer; financial instruments, 3rd party companies or outsourcing and service procurement contracts. According to the results of the opportunity evaluation, the action to meet the opportunity is determined. Opportunity fulfilment action types are as follows: Seizing the Opportunity: Realizing the opportunity. Ignoring Opportunity: Refusing to realize the opportunity.

**C2.2a**

**(C2.2a) Which risk types are considered in your organization's climate-related risk assessments?**

|                     | Relevance & inclusion     | Please explain   |
|---------------------|---------------------------|--|
| Current regulation  | Relevant, always included | In order to ensure full compliance with laws and national and international requirements, we periodically conduct management evaluations and conduct environmental inspections in the field. We report our greenhouse gas emissions in line with the requirements of the CORSIA, EU ETS and TS EN ISO 14064-1 (Calculation of Greenhouse Gas Emissions and Removals at Organizational Level) Standards, and our calculations were verified by third-party independent verifier bodies annually. In addition, we have been included in the UK ETS process as of 2021 and we have started to monitor our emissions in this context. Within the scope of the EU ETS, the scope of which was limited to flights departing and landing within the borders of the European Economic Area in 2016 by the European Union, we directly monitor, calculate and have our emissions verified by an authorised independent certification body. We fulfill all the necessary notifications under the EU ETS and follow the developments closely. In 2021, the following corresponding amounts of credits were paid to relevant ETS schemes: EU ETS (EUA): 10,838 UK ETS (UKA): 3,130 Starting from the voluntary phase, we have accepted the CORSIA requirements for carbon neutralization. As CORSIA stated, CORSIA offsetting requirements for the 2021-2023 period will be calculated each year for the previous year and the 2021-2023 period emission units will be offset in 2025 through the CORSIA implementation timeline. The base year of the CORSIA was designed to be 2019-2020. However, since the emissions in 2020 were very low due to the pandemic, there is an ongoing debate on taking 2019 as the base year. Although not so clear, it will be clarified in the General Assembly to be held in late 2022. 55 internal audits were carried out within the scope of ISO 14001 Environmental Management System (EMS), ISO 14064, SHT-CORSIA and QUALITEAM. The actions to be taken for the findings were assigned to the relevant units and monitored. 100% compliance with the 2020 Target has been achieved. Within the scope of CORSIA, an internal and external audit was carried out in 2020. For the EU ETS and UK ETS, an external audit (verification audit) was carried out in 2021. 16 QUALITEAM audits were carried out in 2020 and 52 QUALITEAM audits in 2021 were carried out. |
| Emerging regulation | Relevant, always included | Emerging regulations on climate-related issues have been developing at national and international levels. We are monitoring upcoming regulatory frameworks as part of our risk identification and risk management processes explained in C2.2. Regulation on the Monitoring of GHG Emissions Originating from Aviation Activities has been drafted by the DIRECTORATE GENERAL OF CIVIL AVIATION (DGCA) of Türkiye. It was published on 22/03/2022. Turkish Airlines will be responsible for preparing the emission monitoring plan within the framework of the procedures and principles set forth in the sub-regulations of this regulation and monitoring the greenhouse gas emissions. Turkish Airlines will have to report the greenhouse gas emissions monitored between January 1 and December 31 of the previous year to the DGCA. According to the regulation, Emissions monitoring and Emissions reporting clauses to come into force on 1/5/2022 for national flights. The emission verification clause will enter into force on 1/1/2023. It is obligatory to verify the annual emission reports prepared regarding the greenhouse gas emissions of the aircraft operators within the scope of this Regulation, arising from the national and international aviation activities, before sending them to the DGCA. The environmental legislation that the company is subject to and the environmental legislation that it may be subject to in the near future are also followed. Opinions are presented to the draft regulations and, when necessary, contacts are made with the relevant parties.  |
| Technology          | Relevant, always included | Thanks to technological developments and investments, the reduction of carbon emissions is ensured and more effective progress can be achieved in the fight against the climate crisis. Our Incorporation also includes the effects of technological risks within the scope of risk assessment. Almost all of our emissions are sourced from the combustion of aviation fuel and new aircraft with up-to-date technology may bring a considerable amount of energy and emission efficiency. Turkish Airlines, boasting one of the youngest and most modern fleets in the world, has 370 aircraft in its fleet as of the end of 2021; 246 narrow-body and 104 wide-body aircraft and 20 freighters. We keep investing in our exceptional fleet, with an average age of 8.5 years. We see our acquisitions of cutting-edge technology and environment-friendly, and fuel-saving new generation aircraft as an investment in our future. In 2020, Turkish Airlines restructured its fleet. As a result of this effort, we now have five A350-900 aircraft in our fleet, after taking delivery of three additional aircraft of this type in 2021. At year's end, we had 20 new generations of wide-body aircraft in our fleet, including 15 B787-9 Dreamliner-type aircraft. With the higher product quality and greater cost advantage provided by the new generation aircraft, Turkish Airlines boosted its revenue and market share thanks to an increased frequency of some long-haul flights, especially in the American market. We also expanded our capacity in the American market as well as in the Asian, Middle, African, and Eastern European markets, which have significant passenger potential. New generation wide-body aircraft deliveries are planned to be completed by the end of 2027. Turkish Airlines ordered new generation A321 NEO and B737 MAX aircraft in 2013. These aircraft were first added to the fleet in 2018, yielding an average of 15% in fuel savings compared to their counterparts. According to plans, all these aircraft will have joined the fleet by 2028, resulting in a significant saving in fuel consumption per seat in the narrow-body aircraft fleet by that date.   |
| Legal               | Relevant, always included | Environmental legal regulations to which our Incorporation is subject to followed and compliance audits are carried out each year. Additionally, environmental monitoring is carried out in the field. The regulations brought by the regulators can significantly affect the income, expense, and profitability of the sector. In order to ensure full compliance with laws and national and international requirements, the results are brought to the agenda within the scope of Management Evaluation meetings. As a result of the audits conducted in 2021, it has been observed that there is 100% compliance at all our locations. 19 internal audits were carried out within the scope of ISO 14001 Environmental Management System (EMS), ISO 14064, SHT-CORSIA and QUALITEAM, and the actions to be taken for the findings were assigned to the relevant units and monitored. Within the scope of CORSIA, an internal and external audit was carried out in 2021. For the UK ETS and EU ETS, an external audit (verification audit) was carried out in 2021. 52 QUALITEAM audits were carried out in 2021.   |
| Market              | Relevant, always included | The aviation sector is a highly competitive sector and due to the growing impacts of climate change along with the raising awareness of airline passengers about the climate crisis resulting in a change in consumer behaviours, there is a possible risk that may affect our business and our revenues. Customers being aware of serious environmental problems have been more conscious of the environment and preferred companies that produce eco-friendly and sustainable products/services. Thanks to our fuel efficiency and sustainability practices and also by paying utmost attention to the concerns of airline passengers, we have the chance of offering our passengers a sustainable air travel choice and meeting their demands. Accordingly, due to the current and emerging national and international regulations, there has been an increasing demand by the corporate customers and the investor's universe on the subject of corporates' aligning their businesses with a 1.5 world posing a risk to our company. That is, investors need to make sure that their investee companies perform their business in a holistic way with sustainability and manage their financial risks arising from climate change. Thus, Turkish Airlines considers it a substantive risk, and as part of our efforts to manage this risk, we are acting to reduce our carbon footprint and we have deployed a comprehensive fuel efficiency program along with our environmental initiatives and fleet renewal strategy to improve our fuel efficiency. Turkish Airlines prioritizes the expectations and demands of its stakeholders, value chain, and customers by surveying its stakeholders on defining the most material subjects.   |
| Reputation          | Relevant, always included | Turkish Airlines is a publicly traded company with a high market value. Issues related to climate change can have a positive or negative impact on an organization's reputation. The reputation of Turkish Airlines may affect both the investors and customers. Consequently, the market value and revenue, and profitability may be affected. According to the Process Risk and Opportunity Evaluation Procedure, if the risk has an "International Reputation Effect", the severity level is "Very High"; If there is a "Negative Reputation Impact at the National Level", it is evaluated as "High". The market value of the company as of the year-end of 2021 is 2.552 billion USD. If any reputational risk negatively impacts Turkish Airlines' market value by 1% as a result of investor exit, it will lead to a decrease of approximately 25 million USD in the market value.  |
| Acute physical      | Relevant, always included | With the increasing effects of climate change, extreme weather conditions and weather changes may bring risks to our flight operations and cargo transportation activities. In cold weather conditions, it should be necessary to wash aircraft with alcohol compounds to maintain the flight safety of the fleet. Another problem that can occur with extreme weather conditions may also delay departure and landing. This may indirectly lead to the use of more fuel and, consequently, to an increase in carbon emissions. A total of 2,391,051 litres of pure de-icing fluid was consumed in 2021. Furthermore, high temperatures may defect the surface of the runway and cancellations of flights and the diversion of arrivals may occur.   |
| Chronic physical    | Relevant, always included | Changing weather conditions due to climate change can cause a flight to be cancelled. When all routes are taken into account, a revenue loss is expected with a round trip cancellation (all travel income is taken into account, not only the remaining income on the line.) In order to take into account that the aircraft cannot be used effectively, fixed+indirect costs are added to other lines. As a result, we can state that cancelling a flight will cause loss in the revenue.  |

**C2.3**

**(C2.3) Have you identified any inherent climate-related risks with the potential to have a substantive financial or strategic impact on your business?**

Yes

**C2.3a**

**(C2.3a) Provide details of risks identified with the potential to have a substantive financial or strategic impact on your business.**

**Identifier**

Risk 1

**Where in the value chain does the risk driver occur?**

Direct operations

**Risk type & Primary climate-related risk driver**

|            |   |
|------------|---|
| Technology | Transitioning to lower emissions technology |
|------------|---|

**Primary potential financial impact**

Increased capital expenditures

**Climate risk type mapped to traditional financial services industry risk classification**

<Not Applicable>

**Company-specific description**

The aviation industry generates approximately 2% of the world's man-made emissions of carbon dioxide (CO2). However, if no action is taken, this rate might increase further due to the increase of global air traffic as projected in well-acknowledged physical scenarios. According to IATA's current projections, it is estimated that the demand for air passenger journeys in 2050 could exceed 10 billion. The expected 2021-2050 carbon emissions on a 'business as usual' trajectory is approximately 21.2 gigatons of CO2. IATA has a 2050 net-zero emissions target which can be achieved by the use of Sustainable Aviation Fuel (SAF), New Technology Aircrafts, Electricity and hydrogen, Offsets and carbon capture. By means of these initiatives, the sector could meet the ambition of reaching net-zero carbon emissions globally by 2050, aligned with the 1.5°C goal of the Paris Agreement. In line with the goal of the global aviation industry to achieve the objectives of the Paris agreement to limit global warming to 1.5°C, Turkish Airlines is highly aware of the impact of the aviation industry on climate change and it acts with the awareness of the importance of the work done to reduce the carbon footprint. We optimize our flight operations and invest in new technologies to increase fuel efficiency. While adding new aircraft to our fleet, we give priority to aircraft and engines with high fuel efficiency. We make plans to pull off our aircraft with high carbon emissions from the fleet. Furthermore, we perform additional projects every year to increase fuel efficiency (kg/100ATK). It is important for us to invest in aircraft with high fuel efficiency for two main reasons: The first is that it has a cost advantage. Considering the high volatility of aviation fuel prices, significant savings are achieved by using less fuel with fuel-efficient aircraft. In addition, new generation aircraft offer advantages to airlines in terms of MRO (maintenance, repair and operations) maintenance costs and consumable usage. The second is that it creates environmental benefits. The reduction in the amount of fuel used by these aircraft reduces the amount of CO2 emissions released into the atmosphere. In addition, it also serves to increase customer satisfaction with the modern interior design of new generation aircraft designed according to customer needs.

**Time horizon**

Short-term

**Likelihood**

Virtually certain

**Magnitude of impact**

High

**Are you able to provide a potential financial impact figure?**

Yes, a single figure estimate

**Potential financial impact figure (currency)**

151000000

**Potential financial impact figure – minimum (currency)**

<Not Applicable>

**Potential financial impact figure – maximum (currency)**

<Not Applicable>

**Explanation of financial impact figure**

"According to the statements of aircraft manufacturers: New generation narrow body aircraft save 15% per seat compared to the previous generation, and wide new generation wide-body aircraft save 20-25% compared to the previous generation. In summary, each new generation of aircraft provides an average of fuel savings compared to the previous generation. It provides 20% fuel efficiency. According to sectoral reports, fuel costs correspond to 30% of the operational costs of airlines. Accordingly, a new generation aircraft makes an average of 6% positive contribution to operational expenses. (based on fuel costs only) In 2021, the fuel cost of our Incorporation is 2.8 billion USD and its share in operational costs is 29%. Turkish Airlines has 370 aircraft by the end of 2021 and 75 of these aircraft (55 narrow, 20 wide) are new generation aircraft. 350 of these aircraft are passenger planes and 20 are cargo planes. While the total number of landings made by our aircraft in 2021 is 357 thousand, the produced capacity is 127 billion AKK. In 2021, the ratio of our new generation aircraft in the total offered capacity is 26%. -- When calculating our aircraft-related costs, we consider many cost items such as fuel oil, carbon emissions, touchdown, bridge, handling, overpass and maintenance. --- If we make a macro calculation, considering the ratio of the new generation aircraft in the total touchdown/capacity and the fuel cost advantage, we can say that it provides a 5.2% advantage to our fuel costs in total. Considering our total operating costs in line with this calculation, if we had not received our new generation aircraft, there would have been an additional cost of approximately 150 million dollars. Macro Account: The fuel advantage of new generation aircraft is 20% on average. The share of New Generation aircraft in 2021 capacity is approximately 26%. The average contribution of new generation aircraft to our partnership in terms of fuel costs is  $(0.26 * 0.2 = 5.2 = 5.2\%)$ . So our current fuel costs are 5.2% lower. Our 2021 Fuel cost: 2,756 Billion USD. If we had taken advantage of the new generation aircraft, our fuel cost would have been  $(2,756 / (1-0.52) = 2,907$  billion USD). In this case, the contribution of the new generation aircraft is 2,907 billion USD -2,756 billion USD =151 million USD.

**Cost of response to risk**

77000000

**Description of response and explanation of cost calculation**

"The average list selling price of a new generation narrow-body aircraft is 125 million USD, and the average list selling price of a wide-body new generation aircraft is 300 million USD. Calculations were made on the list prices, taking into account the numbers of 55 narrow-body and 20 wide-body aircraft in 2021... The average selling price of old-generation narrow-body aircraft is 106 million USD and the list price of an old-generation wide-body aircraft is 275 million USD. In terms of purchasing advantage, 1.545 billion USD more cost was incurred over the list price for new generation aircraft. We arrived this figure as:  $(125 \text{ million USD} \times 55 \text{ narrow body} + 300 \text{ million USD} \times 20 \text{ wide body}) - (106 \text{ million USD} \times 55 \text{ narrow body} + 275 \text{ million USD} \times 20 \text{ wide body}) = 1.545 \text{ billion USD}$  When we take the average economic life of these aircraft as 20 years, it creates an average cost of  $(1.545 \text{ billion USD} / 20 \text{ years}) = 77 \text{ million USD per year}$ .

**Comment**

## C2.4

### (C2.4) Have you identified any climate-related opportunities with the potential to have a substantive financial or strategic impact on your business?

Yes

## C2.4a

### (C2.4a) Provide details of opportunities identified with the potential to have a substantive financial or strategic impact on your business.

#### Identifier

Opp1

#### Where in the value chain does the opportunity occur?

Direct operations

#### Opportunity type

Resource efficiency

#### Primary climate-related opportunity driver

Use of more efficient modes of transport

#### Primary potential financial impact

Reduced direct costs

#### Company-specific description

In 2021, Turkish Airlines took delivery of 3 A350-900 aircraft, increasing the total number of A350-900 aircraft in its fleet to 5. With the addition of the A321 NEO and B737 MAX aircraft, which were ordered in 2013, to the fleet in 2018, an average of 15% fuel savings was achieved compared to the equivalent aircraft of these aircraft. It is aimed that all of these aircraft will join the fleet in 2028, and it is planned to achieve significant savings in fuel consumption per seat in the narrow body passenger aircraft fleet by 2028. On the other hand, Turkish Airlines continues to increase its new generation aircraft with additional agreements in addition to these orders according to market conditions. Controlling costs in the aviation industry is one of the important elements of sustainable growth. In order to reduce fuel costs, which is one of the main costs, new generation aircraft offers advantages. On the other hand, it has become one of the strategic predecessors of airlines in using aircraft that are less harmful to the environment and have low emission rates. Such matters affect both customers and investors positively. Since carbon pricing mechanisms will also create a cost item, using more efficient aircraft will also create a cost advantage in this area. As of the end of 2021, a total of 16,053 new generation aircraft have been ordered from Airbus and Boeing companies, and 4,395 have been delivered, globally. It is important for us to invest in aircraft with high fuel efficiency for two important reasons. The first is that it has a cost advantage. Considering the high volatility of aviation fuel prices, significant savings are achieved by using less fuel with fuel-efficient aircraft. This situation creates an advantage in costs and positively supports profitability. The second is that it creates environmental benefits. The reduction in the amount of fuel used by these aircraft reduces the amount of CO2 emissions released into the atmosphere. With decreasing emission rates, less emission tax will be paid and customer lifetime value will increase with customer satisfaction. Considering the flights of old generation and new aircraft on similar routes, the amount of fuel consumed decreases by 14-16% per unit capacity in narrow body and 20%-25% per unit capacity in wide body. This is in line with the statements of aircraft manufacturers. An average of 20% was taken.

#### Time horizon

Long-term

#### Likelihood

Virtually certain

#### Magnitude of impact

High

#### Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

#### Potential financial impact figure (currency)

3000000000

#### Potential financial impact figure – minimum (currency)

<Not Applicable>

#### Potential financial impact figure – maximum (currency)

<Not Applicable>

#### Explanation of financial impact figure

Aircraft and aircraft engine manufacturers in the sector have announced that, as a result of their work, new generation aircraft provide an average of 20% fuel savings compared to their equivalent aircraft. Turkish Airlines has 370 aircraft by the end of 2021 and 75 of these aircraft (55 narrow, 20 wide) are new generation aircraft. 350 of these aircraft are passenger aircraft and 20 are cargo planes. As of the end of 2021, Turkish Airlines is the airline with the highest rate of new generation aircraft among the top 10 airline companies in the world in terms of fleet size. The total fuel cost of Turkish Airlines in 2021 is 2.8 billion USD. In this context, new generation aircraft saved 151 million USD in fuel in 2021. Macro Account: The fuel advantage of new generation aircraft is 20% on average. The share of New Generation aircraft in 2021 capacity is approximately 26%. The average contribution of new generation aircraft to our partnership in terms of fuel costs is  $(0.26 * 0.2 = 5.2 = 5.2\%)$ . So our current fuel costs are 5.2% lower. Our 2021 Fuel cost: 2,756 Billion USD. If we had taken advantage of the new generation aircraft, our fuel cost would have been  $(2,756 / (1-0.52) = 2,907$  billion USD). In this case, the contribution of the new generation aircraft is  $2,907-2,756=151$  million USD. The 20-year (lifetime of aircraft is 20 years) advantage of these new generation aircraft is approximately  $(151 \text{ million USD} \times 20 \text{ years})=3$  billion USD.

#### Cost to realize opportunity

1545000000

#### Strategy to realize opportunity and explanation of cost calculation

The average list selling price of a new generation narrow-body aircraft is 125 million USD, and the average list selling price of a wide-body new generation aircraft is 300 million USD. Calculations were made on the list prices, taking into account the numbers of 55 narrow-body and 20 wide-body in 2021. The average selling price of old-generation narrow-body aircraft is 106 million USD and the list price of an old-generation wide-body aircraft is 275 million USD. In terms of purchasing advantage, 1.545 billion USD more cost was incurred over the list price for new generation aircraft. We arrived this figure as:  $(125 \text{ million USD} \times 55 \text{ narrow body} + 300 \text{ million USD} \times 20 \text{ wide body}) - (106 \text{ million USD} \times 55 \text{ narrow body} + 275 \text{ million USD} \times 20 \text{ wide body})=1.545$  billion USD

#### Comment

### C3. Business Strategy

#### C3.1

**(C3.1) Does your organization's strategy include a transition plan that aligns with a 1.5°C world?**

**Row 1**

**Transition plan**

Yes, we have a transition plan which aligns with a 1.5°C world

**Publicly available transition plan**

Yes

**Mechanism by which feedback is collected from shareholders on your transition plan**

We have a different feedback mechanism in place

**Description of feedback mechanism**

At Turkish Airlines, the company management carries out studies to increase the awareness of our employees about environmental issues and climate change, and we use training, seminars, and related information tools in this field. Feedback concerning the sustainability strategy and Climate Transition Plan of Turkish Airlines from shareholders is realized by facilitating the exercise of shareholders' rights. As such, Investor Relations Department participated in 8 investor conferences and roadshows, held 80 teleconferences, and held more than 100 individual/corporate investor meetings. 4 teleconferences were organized about financial statement results. The company provides materials for the General Shareholders' Meeting in English and Turkish at the same time. The investor Relations Department of our Incorporation has not received any written requests from shareholders regarding the inclusion of any additional items to the agenda of the Annual General Meeting related to the fiscal year 2021. On the other hand, in the 2021 reporting process, firstly the material issues were identified. In this context, a subject universe consisting of the ones which might be important to the aviation sector was formed at first. While creating this universe, both the main topics and sub-topics that could be considered under these main topics were included by utilizing the contents of reporting frameworks such as WEF Global Risk Reports, GRI, SASB, the 17 Sustainable Development Goals of UN, sectoral and competitor practices as well as stakeholder expectations. The identified issues were evaluated via online surveys with external stakeholders, members of working groups, company executives, and employees in various categories of Turkish Airlines. The results were evaluated in a workshop where a training session was held with a team of nearly 100 executives. As a result of the evaluation, the tables of material issues, SDGs, and stakeholders were finalized. Our material issues approved by the Senior Management are shown in the materiality matrix. Additionally, on the Investor Relations website of Turkish Airlines, the briefing presentations/result summaries are presented to all investors, and shareholders quarterly. By means of these instruments, all feedback from the shareholders is welcomed at any time.

**Frequency of feedback collection**

More frequently than annually

**Attach any relevant documents which detail your transition plan (optional)**

turkish-airlines-2020-sustainability-report\_21\_12\_2021.pdf  
thy\_annual-report\_2021.pdf

**Explain why your organization does not have a transition plan that aligns with a 1.5°C world and any plans to develop one in the future**

<Not Applicable>

**Explain why climate-related risks and opportunities have not influenced your strategy**

<Not Applicable>

#### C3.2

**(C3.2) Does your organization use climate-related scenario analysis to inform its strategy?**

|       | Use of climate-related scenario analysis to inform strategy | Primary reason why your organization does not use climate-related scenario analysis to inform its strategy | Explain why your organization does not use climate-related scenario analysis to inform its strategy and any plans to use it in the future |
|-------|---|--|---|
| Row 1 | Yes, qualitative and quantitative                           | <Not Applicable>   | <Not Applicable>  |

#### C3.2a

**(C3.2a) Provide details of your organization’s use of climate-related scenario analysis.**

| Climate-related scenario   |              | Scenario analysis coverage | Temperature alignment of scenario | Parameters, assumptions, analytical choices  |
|----------------------------|--------------|----------------------------|-----------------------------------|--|
| Transition scenarios       | IEA NZE 2050 | Company-wide               | <Not Applicable>                  | Parameters: The Net-Zero Emissions by 2050 Scenario (NZE) is designed to show what is needed across the main sectors by various actors, and by when, for the world to achieve net-zero energy-related and industrial process CO2 emissions by 2050. achieving net-zero CO2 emissions from the energy sector by 2050 is consistent with around a 50% chance of limiting the long-term average global temperature rise to 1.5°C without a temperature overshoot (IPCC, 2018). The NZE aims to ensure that energy-related and industrial process CO2 emissions to 2030 are in line with reductions in 1.5 °C scenarios with no or low or limited temperature overshoot assessed in the IPCC in its Special Report on Global Warming of 1.5 °C. In the identification of this scenario, it has referred to and considered some mutually consistent quantitative parameters which are GDP, population, inflation, production, consumption, employment, age distribution, tourism and travel statistics, energy sources supply and demand, CO2-emission-temperature related data. In this scenario analysis, the parameters have been enlarged and enriched with different kinds of internal and external aircraft usage and flight data to identify better Turkish Airlines’ role and the aviation sector’s role. Assumptions: This scenario study is mostly based on the policies and assumptions of well-known and internationally accepted organizations (ATA-IMF-IEA-World Bank-OECD-Breau of Statistics of Countries-Eurostat-WTO etc.). Turkish Airlines keeps the scenario updated through the changes in the directives and regulations. In addition, the company made assumptions with in-house data and insight on aviation-related issues, especially on the markets the company is in and company policies. Analytical choices: The company made some statistical models with time series, regression and forecast methods to analyze the quantitative data referred to in the first paragraph and build the models on SSP (Shared Socioeconomic Pathways) and the assumptions which are referred to by the reference sources in the second paragraph. Energy prices and carbon pricing mechanisms are very uncertain. In NZE 2050 scenario there is a balance predicted between energy supply and demand. Therefore NZE 2050 scenario has been taken into consideration when designing Turkish Airlines’ climate transition plans. |
| Physical climate scenarios | RCP 8.5      | Company-wide               | <Not Applicable>                  | Parameters: Based on the RCP 8.5 scenario, the physical climate scenario projected with the business-as-usual approach, with emissions increasing most aggressively (-5 degrees Celsius) by 2100 and sea levels rising to the highest level by the end of the 21st century (about 7 times higher than pre-industrial levels) was chosen. In order to be successful in carbon reduction targets, a limitation on emissions is required. In this context, low and/or if possible zero-emission technologies, carbon capture and storage projects, energy-efficient engines and biogenic fuels are taken into consideration. Assumptions: Evaluation studies were carried out on the risks in this scenario. Threat-opportunity studies were carried out on those that will most affect the company’s operations and sustainability efforts among these physical risks. In order to minimize the risks here, Turkish Airlines will increase their current fuel efficiency practices and continue to invest in fuel-efficient and new generation aircraft, as well as in climate change innovations brought by technology. The company will manage the short-medium-long-term physical effects/risks of climate change on their activities by increasing the use of Sustainable Aviation Fuel. Analytical choices: RCP 8.5 scenario has been levelled by considering the worst-case effects of climate change. The RCP 8.5 pathway delivers a temperature increase of about 4.3°C by 2100, relative to pre-industrial temperatures. According to RCP 8.5, the number of anthropogenic emissions depends on the population growth rate and technology change. Acute and chronic physical risks are considered in the Turkish Airline physical scenario study. Extreme weather conditions and weather changes may bring risks to flight operations and cargo transportation activities. In cold weather conditions, it should be necessary to wash aircraft with alcohol compounds to maintain the flight safety of the fleet. Another problem that can occur with extreme weather conditions may also delay departure and landing. The company will continue to keep our actions up to date on the risks identified through up-to-date communications with policymakers and all stakeholders regarding climate change.  |

**C3.2b**

**(C3.2b) Provide details of the focal questions your organization seeks to address by using climate-related scenario analysis, and summarize the results with respect to these questions.**

**Row 1**

**Focal questions**

Q1- What climate-related risks does the company expect in the time frames it has determined within the scope of its business strategy, and what indicators may the company present to take action against these risks? Q2 - Taking into account which parameters and which relevant laws and regulations should the company support its business strategy, and what internal mechanisms should be developed to support the company's risk approach and solutions to risks?

**Results of the climate-related scenario analysis with respect to the focal questions**

While studying the scenario analysis of Turkish Airlines, the global or regional policies of "IATA, the regulatory body in the aviation industry", the annual growth rate expectation of the sector globally, emerging technologies and other socioeconomic expectations were taken into account. At the same time, TCFD’s Climate Change Scenario Analysis Guidelines were also taken into account. Current and emerging national and international policy and technology factors and assumptions of an "uneven" path around the transition and physical scenarios of the IEA and IPCC are also included. In order to use scenario analysis effectively, it is aimed to be built on integrating both scenarios into the decision-making mechanism of the company. In order to be useful in decision-making, it has been decided to periodically update the climate scenarios within the company. To ensure the credibility of these scenarios, factors outlined in the TCFD guidelines will be looked at, such as the general nature of the scenarios, whether they are integrated into updates, their internal logic, credibility, and probability of assumptions. As a result of scenario analysis and climate risks, the most solid output of these studies is: -- Turkish Airlines will increase its current fuel efficiency practices and -- will continue to invest in fuel-efficient and new generation aircraft.

**C3.3**

**(C3.3) Describe where and how climate-related risks and opportunities have influenced your strategy.**

|                                 | Have climate-related risks and opportunities influenced your strategy in this area? | Description of influence  |
|---------------------------------|---|---|
| Products and services           | Yes   | Along with the corporate mission and strategy of our Incorporation, we are also developing our sustainability strategy as outlined in our business strategy and climate risks identified. We are constantly improving our sustainability strategy by focusing on issues that may affect our operations and are important to our stakeholders and considering new regulations. In this context, we take many initiatives to reduce carbon footprint by increasing fuel efficiency within the scope of protecting the environment and combating climate change. In this context, we take many initiatives to reduce carbon emissions mostly by increasing fuel efficiency within the scope of protecting the environment and competing against climate change. Apart from fuel efficiency, we make practices to reduce cabin material and catering weights. Any weight reduction in the aircraft would bring carbon emissions reduction. For example, we digitized the in-flight manuals and flight documents. By simplifying the products in the amenity kits and serving them without the outer packaging bag, we have reduced both the use of plastic and the weight. While adding new aircraft to our fleet, we give priority to aircraft and engines with high fuel efficiency. We make plans to pull off our aircraft with high carbon emissions from the fleet. Turkish Airlines has a number of "Airbus A321-neo" aircraft that have "Ultra-high bypass ratio engine". Those aircraft with Ultra-high bypass ratio engines provide 15% fuel reduction compared to those that have not got Ultra-high bypass ratio engines such as Airbus A321. In the reporting year, 128,150.47 tonnes of carbon emissions were saved. We consider this as a low-carbon service as outlined in "The IEA Energy Technology Perspectives Clean Energy Technology Guide" taxonomy.  |
| Supply chain and/or value chain | Yes   | Turkish Airlines carries out joint works with the entire value and supply chain in order to reduce climate-related risks and take advantage of emerging opportunities by bringing together the common values of its suppliers, employees and customers as outlined in the climate transition plan of the company. Turkish Airlines supports, directly and indirectly, a huge ecosystem with aircraft, engine and spare parts manufacturers; infrastructure providers such as airports; service providers such as catering; stakeholders in the air cargo network; the structure that includes our passengers, and internal stakeholders. Turkish Airlines is attentive to selecting its suppliers in this context while taking into account the components of the supply chain. It is aimed to choose the most appropriate supplier for the purchase of new generation engines and aircraft with plans taking into account the features such as market dynamics and routing. In order to reach the carbon reduction targets of Turkish Airlines even for the whole aviation service providers new generation aircrafts/fuel-efficient aircraft's manufacturers and Sustainable Aviation Fuel producers are an essential part of the company's engagement strategy as part of the climate transition plan. Besides, Turkish Airlines uses the "Supplier Evaluation Procedure", which was put into use in 2021, which uses its safety, quality, environmental, customer satisfaction and occupational health and safety policies in the evaluation of its suppliers. Supplier quality and environmental awareness of suppliers are increased by using ISO 14001 "Environmental Management Standards" within this evaluation. Turkish Airlines emphasizes environmental awareness in its human resources strategies and aims to raise awareness of climate change through the training and organizations it offers to its employees. In contracts concluded for THY within the scope of goods and products, the supplier must comply with the Environmental Legislation, and national and international requirements that he is obliged to comply with while performing the activities, products and services within the scope of the contract, preventing waste generation as specified in the Zero Waste Regulation, minimizing the amount of waste if waste generation cannot be prevented, reducing waste. |
| Investment in R&D               | Yes   | In order to reduce carbon emissions within the struggle against climate change; we support the project of biofuel production from microalgae carried out by Boğaziçi University to produce biofuels as an alternative to jet fuel. "Microalgae-Based Sustainable Bio-Jet Fuel Project (MICRO-JET)", which we carry out jointly with Boğaziçi University, has been accepted by The Scientific and Technological Research Council of Türkiye. When the project is completed, we plan to use biofuel, which will be obtained from sustainable sources, in our flights after the engine tests are carried out by Turkish Technic. There is no supplier in Türkiye to support our flights in a sustainable way. We will continue to support such studies in the upcoming period as well, and we will continue our investments in this field with new collaborations. One other investment was made in Advanced Fuel Management System (FMIS). Turkish Airlines' new fuel management system was commissioned at the end of 2016. This new system helps to calculate the costs of ATC operations (airborne instructions, deviations from the flight plan, etc.), and to assess the alternatives along with such cost items calculated. It also helps to monitor closely all important factors such as any and all kinds of deviations, altitude and speed changes performed in the flight plan and the actual flight route, etc. which affect the fuel consumption and so carbon emissions and to take actions in a very short time in all potential areas. The average percentage of total R&D investment in this FMIS over the last 3 years is 1.54%.  |
| Operations                      | Yes   | As Turkish Airlines, we carry out our operations with a sense of responsibility towards the environment and society. With the awareness that our biggest impact on climate change is fuel use, we first consider our fuel efficiency in all possible operational processes. In this context, we invest in new technologies in order to optimize our flight activities, and constantly optimize our flight network, flight route, and schedule categorized into 4 groups: Flight Operation Applications, Technical Maintenance Practices, Flight Planning (Dispatch) Applications, and Ground Operation Applications. We are able to reduce fuel consumption with applications such as single-engine taxi, low flap use on take-off, low flap use on landing, monitoring of aircraft aerodynamics, etc. As a result of all these operational activities, in 2021, with 18 initiatives in our operations, we saved 116,809.00 tons of carbon emissions. In addition to aircraft development projects, we give priority to aircraft with high fuel efficiency while adding new aircraft to our fleet. Turkish Airlines ordered new generation A321 NEO and B737 MAX aircraft in 2013. These aircraft were first added to the fleet in 2018, yielding an average of 15% in fuel savings compared to their counterparts. According to plans, all these aircraft will have joined the fleet by 2028, resulting in a significant saving in fuel consumption per seat in the narrow-body aircraft fleet by that date. In our construction investments, we attach importance to energy and environmentally friendly designs. For example, our new buildings at Istanbul Airport have Leed certificate. In the coming period, we will carry out our facility and office planning with this policy. We also aim to evacuate our old buildings with high carbon emissions. We are working on reducing natural resource consumption and minimizing hazardous waste. Within the framework of the Zero Waste Regulation, we reduce the amount of waste and separate the generated waste at the source. In our in-flight products, we prefer only products made from trees grown for industrial purposes, and we prefer recyclable materials instead of plastic packaging in product cases.   |

**C3.4**

**(C3.4) Describe where and how climate-related risks and opportunities have influenced your financial planning.**

|       | Financial planning elements that have been influenced   | Description of influence   |
|-------|---|--|
| Row 1 | Revenues<br>Direct costs<br>Indirect costs<br>Capital expenditures<br>Capital allocation<br>Access to capital<br>Assets | Revenues: Environmental impacts, climate-related risks and opportunities are always taken into account in the creation of Turkish Airlines' business strategies and financial planning. Turkish Airlines is in a reputable position in this sense. A positive or negative change in this reputation may directly affect Turkish Airlines' revenues. REVENUE 10.686 billion USD (2021) EBITDA 3.416 billion USD (2021) MARKET CAP 2.552 billion USD (2021) 15% of the above-mentioned figures are as follows. REVENUE 1.6029 billion USD EBITDA 0.5124 billion USD MARKET CAP 0.3828 billion USD Any change above 15% figures is qualified as "high risk" in Turkish Airlines' risk procedure. Direct Costs: The fuels consumed by its aircraft cause approximately 99% of Turkish Airlines' carbon emissions. Fuel costs are among the most important direct cost items in our Incorporation. More than 30% of total operational spending in the reporting year was on fuel consumption. Therefore, an increase in fuel prices and/or the compulsory use of sustainable aviation fuel (SAF) at a certain level due to the climate-related risks will directly affect our costs. Such a situation may cause a high financial impact. Moreover, average air temperatures are increasing due to climate change. High air temperature, on the other hand, negatively affects the engine performance of the aircraft and the maximum load they can carry during take-off (MTOW). High air temperature means that aircraft consume more fuel during take-off, which increases direct costs. Positive and negative climate-related effects on fuel usage and fuel prices are taken into account in our financial planning. Indirect Costs: Currently, 88 countries, including our country, have voluntarily participated in Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA), which limits carbon emissions from aviation, and the number of participants will increase over time with new countries joining. Starting from the voluntary phase, we have accepted the CORSIA requirements for carbon neutralization. As CORSIA stated, CORSIA offsetting requirements for the 2021-2023 period will be calculated each year for the previous year and the 2021-2023 period emission units will be offset in 2025 through the CORSIA implementation timeline. The base year of the CORSIA was designed to be 2019-2020. However, since the emissions in 2020 were very low due to the pandemic, there is an ongoing debate on taking 2019 as the base year. Although not so clear, it will be clarified in the General Assembly to be held in late 2022. Capital expenditures: As mentioned before, a large part of the carbon emissions produced by our Incorporation originate from the fuels used by our fleet. For this reason, climate-related risks and opportunities directly affect our fleet structure and fuel and environmentally friendly new generation aircraft investments. These risks and opportunities play a role in determining investment items such as new aircraft procurement, replacement engine needs, and aircraft upgrades. We invest in new technologies and build our fleet with young, fuel-efficient, environmentally friendly aircraft. Thanks to our efforts in this direction, our flights have become 20% more fuel efficient compared to 12 years ago. In addition, we prefer carbon-friendly equipment for ground equipment and other equipment used in operations. These may also create some additional costs. We are also transitioning to environmentally friendly (LEED certified) buildings and shaping our office and facility investments accordingly. Capital allocation: We prefer new generation aircraft due to their fuel efficiency and environmental friendliness. All our current orders consist of new generation aircraft and the share of new generation aircraft in our fleet will increase gradually in the coming years. In addition, we focus on aircraft retrofit projects that increase fuel efficiency. Assets: Extreme weather conditions due to climate change make flight operations more challenging. Under extreme weather conditions, aircraft may be damaged both during flight and during ground operations. However, we consider that the impact of these risks will be low in the short and medium term. Moreover, if the aircraft in our fleet remains relatively less environmentally friendly because of the increased demand for new generation aircraft, risks may arise regarding the values of the aircraft in our fleet. We consider this in our fleet investments and orders. |

## C3.5

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(C3.5) In your organization's financial accounting, do you identify spending/revenue that is aligned with your organization's transition to a 1.5°C world?

Yes

### C3.5a

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(C3.5a) Quantify the percentage share of your spending/revenue that is aligned with your organization's transition to a 1.5°C world.

**Financial Metric**

Revenue

**Percentage share of selected financial metric aligned with a 1.5°C world in the reporting year (%)**

9.22

**Percentage share of selected financial metric planned to align with a 1.5°C world in 2025 (%)**

6.41

**Percentage share of selected financial metric planned to align with a 1.5°C world in 2030 (%)**

4.24

**Describe the methodology used to identify spending/revenue that is aligned with a 1.5°C world**

The purchase of our A321-neo aircraft, which are our "Geared Turbo Fan engine" aircraft, started in 2018. For this reason, instead of the purchases in a specific year, the calculation was made by dividing the total aircraft expenditures between the years from the date of purchase to the reporting year by the income of those years. It is calculated as the ratio of the amount paid to the estimated revenue for the aircraft approved by the board of directors for the years 2018-2021, 2022-2025, and 2026-2030. Future revenue projections are calculated by taking into account the CAGR growth on the basis of RPK determined by IATA for the aviation industry.

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## C4. Targets and performance

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### C4.1

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(C4.1) Did you have an emissions target that was active in the reporting year?

Intensity target

### C4.1b

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(C4.1b) Provide details of your emissions intensity target(s) and progress made against those target(s).

**Target reference number**

Int 1

**Year target was set**

2019

**Target coverage**

Company-wide

**Scope(s)**

Scope 1

Scope 2

**Scope 2 accounting method**

Location-based

**Scope 3 category(ies)**

<Not Applicable>

**Intensity metric**

Other, please specify (ASK (Available Seat Kilometer) )

**Base year**

2019

**Intensity figure in base year for Scope 1 (metric tons CO2e per unit of activity)**

0.00008414

**Intensity figure in base year for Scope 2 (metric tons CO2e per unit of activity)**

2e-7

**Intensity figure in base year for Scope 3 (metric tons CO2e per unit of activity)**

<Not Applicable>

**Intensity figure in base year for all selected Scopes (metric tons CO2e per unit of activity)**

0.00008434

**% of total base year emissions in Scope 1 covered by this Scope 1 intensity figure**

100

**% of total base year emissions in Scope 2 covered by this Scope 2 intensity figure**

100

**% of total base year emissions in Scope 3 (in all Scope 3 categories) covered by this Scope 3 intensity figure**

<Not Applicable>

**% of total base year emissions in all selected Scopes covered by this intensity figure**

100

**Target year**

2029

**Targeted reduction from base year (%)**

9.64

**Intensity figure in target year for all selected Scopes (metric tons CO2e per unit of activity) [auto-calculated]**

0.000076209624

**% change anticipated in absolute Scope 1+2 emissions**

54

**% change anticipated in absolute Scope 3 emissions**

0

**Intensity figure in reporting year for Scope 1 (metric tons CO2e per unit of activity)**

0.00008118

**Intensity figure in reporting year for Scope 2 (metric tons CO2e per unit of activity)**

3.4e-7

**Intensity figure in reporting year for Scope 3 (metric tons CO2e per unit of activity)**

<Not Applicable>

**Intensity figure in reporting year for all selected Scopes (metric tons CO2e per unit of activity)**

0.00008152

**% of target achieved relative to base year [auto-calculated]**

34.6847427474448

**Target status in reporting year**

New

**Is this a science-based target?**

No, but we anticipate setting one in the next 2 years

**Target ambition**

<Not Applicable>

**Please explain target coverage and identify any exclusions**

The target has been prepared on the basis of the fiscal year. The year 2019 was determined as the base year, and the year 2029 was chosen as the target year.

**Plan for achieving target, and progress made to the end of the reporting year**

The technical developments in the aviation sector, the plans made by our organization for the purchase of aircraft with high fuel efficiency, and the projections made regarding the use of SAF(Sustainable Aviation Fuel) constitute the general framework to reach the target. As of 2021, by taking into account the principles of sustainability in terms of financial and climatic conditions, fleet modernization, new generation aircraft purchases and SAF use which was launched first on our Istanbul to Paris route in 2022, have been carried out. Since then we have rolled it out to destinations including Oslo, Gothenburg, Copenhagen, Paris, London, and Stockholm. More destinations and more frequent use of SAF are planned in the future. Furthermore, thanks to the clean combustion realized with the use of sustainable aviation fuel; a reduction of up to 87% in greenhouse gas emissions will be achieved compared to the same amount of traditional kerosene fuel and it will contribute to the reduction of global greenhouse gas emissions.

**List the emissions reduction initiatives which contributed most to achieving this target**

<Not Applicable>

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## C4.2

**(C4.2) Did you have any other climate-related targets that were active in the reporting year?**

Target(s) to increase low-carbon energy consumption or production

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## C4.2a

**(C4.2a) Provide details of your target(s) to increase low-carbon energy consumption or production.**

**Target reference number**

Low 1

**Year target was set**

2020

**Target coverage**

Site/facility

**Target type: energy carrier**

Electricity

**Target type: activity**

Consumption

**Target type: energy source**

Renewable energy source(s) only

**Base year**

2021

**Consumption or production of selected energy carrier in base year (MWh)**

7235.8531

**% share of low-carbon or renewable energy in base year**

0

**Target year**

2030

**% share of low-carbon or renewable energy in target year**

5

**% share of low-carbon or renewable energy in reporting year**

0

**% of target achieved relative to base year [auto-calculated]**

0

**Target status in reporting year**

New

**Is this target part of an emissions target?**

No.

**Is this target part of an overarching initiative?**

No, it's not part of an overarching initiative

**Please explain target coverage and identify any exclusions**

It covers the amount of electricity that Turkish Airlines consumes directly from the grid at the company's buildings located in the Atatürk Airport region. In the reporting year, 2021, electricity consumption of the General Administration Building was generated by the trigeneration plant. In this target, it is planned to source the electricity demand from the grid and to source 5% of total consumption from renewable sources.

**Plan for achieving target, and progress made to the end of the reporting year**

Along with these studies, as we have committed in our environmental policy; We prioritize energy and resource efficiency, and by working to reduce our electricity and natural gas consumption, we aim to meet at least 5% of the energy in our new buildings from renewable sources. Although there is currently no renewable energy production in our partnership, it is envisaged to initiate an I-REC certification process indicating that the electricity supplied is obtained from renewable sources.

**List the actions which contributed most to achieving this target**

<Not Applicable>

**C4.3**

**(C4.3) Did you have emissions reduction initiatives that were active within the reporting year? Note that this can include those in the planning and/or implementation phases.**

Yes

**C4.3a**

**(C4.3a) Identify the total number of initiatives at each stage of development, and for those in the implementation stages, the estimated CO2e savings.**

|                           | Number of initiatives | Total estimated annual CO2e savings in metric tonnes CO2e (only for rows marked *) |
|---------------------------|-----------------------|--|
| Under investigation       | 0                     | 0  |
| To be implemented*        | 1                     | 8044   |
| Implementation commenced* | 1                     | 15622  |
| Implemented*              | 18                    | 116809   |
| Not to be implemented     | 0                     | 0  |

C4.3b

(C4.3b) Provide details on the initiatives implemented in the reporting year in the table below.

**Initiative category & Initiative type**

|                                     |                     |
|-------------------------------------|---------------------|
| Company policy or behavioral change | Resource efficiency |
|-------------------------------------|---------------------|

**Estimated annual CO2e savings (metric tonnes CO2e)**

116809

**Scope(s) or Scope 3 category(ies) where emissions savings occur**

Scope 1

**Voluntary/Mandatory**

Voluntary

**Annual monetary savings (unit currency – as specified in C0.4)**

24000000

**Investment required (unit currency – as specified in C0.4)**

0

**Payback period**

No payback

**Estimated lifetime of the initiative**

Ongoing

**Comment**

C4.3c

(C4.3c) What methods do you use to drive investment in emissions reduction activities?

| Method  | Comment   |
|---|---|
| Compliance with regulatory requirements/standards | Our activities, products and services continued to be carried out in accordance with the requirements of the TS EN ISO 14001: 2015 Environmental Management System Standard in 2021, and the Environmental Management System Certificate continued to be valid as a result of the audits performed. Adopting the principle of "continuous improvement," we aim to go beyond compliance with the requirements while carrying out our activities. Accordingly, we participated in the IATA Environmental Assessment Management System Program (IATA Environmental Assessment - IEnvA) specially designed for airline companies by the International Air Transport Association (IATA), with a management model specific to airline companies in order to strengthen the ISO 14001 Environmental Management System which we have been implementing since 2013. We have successfully completed the audit conducted by an independent third-party organization authorized by IATA. Turkish Airlines has become the first airline to directly obtain the "Stage 2 Certificate," which is the highest level certificate in the IEnvA System and represents the highest level of IEnvA compliance.   |
| Dedicated budget for energy efficiency            | Turkish Airlines provides the necessary resources of humans, technology, infrastructure, finance etc for energy efficiency and to reduce the use of natural resources. In this context, a 17% decrease was achieved in electricity consumption compared to 2019. We aim to meet at least 5% of the energy in our new buildings from renewable sources by 2030. 2021-2025 fleet investment amount is \$13.7 billion USD. (This is the list price of the aircraft.)   |
| Dedicated budget for low-carbon product R&D       | Turkish Airlines prioritizes climate-related risks and targets while performing all its activities, products and services. Supports fuel efficiency initiatives to reduce and eliminate factors that may have an impact on climate change. The company monitors greenhouse gas emissions regularly, reports and shares its results with all its stakeholders and sets targets for emission reductions by taking the necessary measures to reduce its emissions develops action plans to achieve these targets and regularly monitors their status. Turkish Airlines adopts the targets set by IATA, of which we are a member. IATA has a 2050 net-zero emissions target which can be achieved by the use of Sustainable Aviation Fuel (SAF), new technology, aircraft, electric and hydrogen systems, infrastructure and operational efficiencies and also offsets and carbon capture which is also in the decision-making process of Turkish Airlines. Also, ICAO (International Civil Aviation Organization) has adopted CORSIA as complementary to the broader package of measures to help ICAO achieve its aspirational goal of carbon-neutral growth from 2020 onwards In order to reach this target the company: Participated in TUBITAK (The Scientific and Technological Research Council of Türkiye) Project titled "Microalgae Based Sustainable Bio-Jet Fuel Project (MICRO-JET)", which was applied jointly with Boğaziçi University , the project was accepted. Within the scope of the project, pilot production of synthetic bio-kerosene using hydro-treated fatty acids (HEFA) and hydrothermal liquefaction (HTL) methods from microalgae started. In 2022, biofuels, produced entirely from sustainable sources and engines tested by Turkish Technic, will be blended and used in our flights. Thus, Turkish Airlines will become one of the rare global companies that can produce and use the cleanest type of biofuel accepted by IATA. The budget of this project is 1.66 million TL and it is supplied by The Scientific and Technological Research Council of Türkiye (TUBITAK) |
| Internal incentives/recognition programs          | Individual Suggestion System: A campaign was held to raise environmental awareness through Feedy, the feedback application within the mobile application, which is one of the company's internal communication channels so that all employees can be involved. During the event, employees were encouraged to receive/give environmental labels from each other. Proposals for energy and emission efficiency are evaluated by relevant departments. The selected proposals are deemed worthy to get a gold coin. Along with our individual suggestion system, these suggestions were rewarded in 2017, 2018, and 2019. A total of 1086 people were given gold coins. It includes the notification of situations and events that partially or completely harm the environment or have the potential to harm the environment while the partnership activities are carried out, and these are evaluated according to the Environmental Management Manual. (Examples of feedback topics covered by non-compliance environment e-Reports via our internal communication tool are; mitigation of fuel, natural sources, and paper use, waste sorting and collection, etc.). At Turkish Airlines, the company management carries out studies to increase the awareness of our employees about environmental issues and climate change, and we use training, seminars, and related information tools in this field. Within this scope, 3227 people received ISO 14001 Environmental Management System and 3207 people received Waste Management training and 1487 people received Greenhouse gas awareness training and participated in the company's awareness-raising work on combating climate change and waste management. In addition, seminars were held to raise awareness about the Zero Waste Project and waste management; bulletins and announcements are published. Also, with Flight Operation Applications carbon reduction initiatives are driven due to the reduction inject fuel.   |

C4.5

(C4.5) Do you classify any of your existing goods and/or services as low-carbon products?

Yes

C4.5a

**(C4.5a) Provide details of your products and/or services that you classify as low-carbon products.**

**Level of aggregation**

Product or service

**Taxonomy used to classify product(s) or service(s) as low-carbon**

The IEA Energy Technology Perspectives Clean Energy Technology Guide

**Type of product(s) or service(s)**

|          |  |
|----------|--|
| Aviation | Geared Turbo Fan/ Ultra-High Bypass Ratio engine |
|----------|--|

**Description of product(s) or service(s)**

"Ultra-high bypass ratio (UHBR)" enables an increase in the bypass-airflow (i.e. the airflow not entering the core engine) to enhance propulsion efficiency. This requires an increased fan diameter, which cannot be directly mounted on the main shaft of the engine (otherwise its rotational speed would be too high), and hence requires changes to the design of the airframe itself. The fan is driven through a mechanical reducer. Turkish Airlines has a number of "Airbus A321-neo" aircraft that have "Ultra-high bypass ratio engine". Those aircraft with Ultra-high bypass ratio engines provide 15% fuel reduction comparing to those that have not got Ultra-high bypass ratio engines such as Airbus A321. That Fuel reduction enables reductions directly in carbon emissions.

**Have you estimated the avoided emissions of this low-carbon product(s) or service(s)**

Yes

**Methodology used to calculate avoided emissions**

The Avoided Emissions Framework (AEF)

**Life cycle stage(s) covered for the low-carbon product(s) or services(s)**

Gate-to-gate

**Functional unit used**

Operating an "Airbus A321-neo (fuel efficient new generation) aircraft" for 76,506,414 km.

**Reference product/service or baseline scenario used**

Operating an "Airbus A321 aircraft" for 76,506,414 km.

**Life cycle stage(s) covered for the reference product/service or baseline scenario**

Gate-to-gate

**Estimated avoided emissions (metric tons CO2e per functional unit) compared to reference product/service or baseline scenario**

128150.4761

**Explain your calculation of avoided emissions, including any assumptions**

Thanks to the "Geared Turbo Fan" engines of our Airbus A321-neo aircraft in our fleet, we consume 15% less fuel. If our new generation A321-neo aircraft were not in our fleet, 15% more fuel would be consumed at the same distance. Based on this assumption, the calculation was made by converting the estimated fuel savings, which we calculated by using the distance and fuel amount of our A321-neo aircraft in our fleet in 2021, into emissions.

**Revenue generated from low-carbon product(s) or service(s) as % of total revenue in the reporting year**

8.98

**C5. Emissions methodology**

**C5.1**

**(C5.1) Is this your first year of reporting emissions data to CDP?**

No

**C5.1a**

**(C5.1a) Has your organization undergone any structural changes in the reporting year, or are any previous structural changes being accounted for in this disclosure of emissions data?**

**Row 1**

**Has there been a structural change?**

No

**Name of organization(s) acquired, divested from, or merged with**

<Not Applicable>

**Details of structural change(s), including completion dates**

<Not Applicable>

**C5.1b**

(C5.1b) Has your emissions accounting methodology, boundary, and/or reporting year definition changed in the reporting year?

|       | Change(s) in methodology, boundary, and/or reporting year definition? | Details of methodology, boundary, and/or reporting year definition change(s) |
|-------|---|--|
| Row 1 | No  | <Not Applicable>   |

C5.2

(C5.2) Provide your base year and base year emissions.

Scope 1

Base year start

January 1 2019

Base year end

December 31 2019

Base year emissions (metric tons CO2e)

17834081.11

Comment

Scope 2 (location-based)

Base year start

January 1 2019

Base year end

December 31 2019

Base year emissions (metric tons CO2e)

43043.04

Comment

Scope 2 (market-based)

Base year start

January 1 2019

Base year end

December 31 2019

Base year emissions (metric tons CO2e)

0

Comment

Scope 3 category 1: Purchased goods and services

Base year start

January 1 2019

Base year end

December 31 2019

Base year emissions (metric tons CO2e)

169404.7

Comment

Scope 3 category 2: Capital goods

Base year start

January 1 2019

Base year end

December 31 2019

Base year emissions (metric tons CO2e)

70058.66

Comment

Scope 3 category 3: Fuel-and-energy-related activities (not included in Scope 1 or 2)

Base year start

January 1 2019

Base year end

December 31 2019

Base year emissions (metric tons CO2e)

3694306.3

Comment

**Scope 3 category 4: Upstream transportation and distribution**

**Base year start**

January 1 2019

**Base year end**

December 31 2019

**Base year emissions (metric tons CO2e)**

0

**Comment**

**Scope 3 category 5: Waste generated in operations**

**Base year start**

January 1 2019

**Base year end**

December 31 2019

**Base year emissions (metric tons CO2e)**

43312.9

**Comment**

**Scope 3 category 6: Business travel**

**Base year start**

January 1 2019

**Base year end**

December 31 2019

**Base year emissions (metric tons CO2e)**

25702.24

**Comment**

**Scope 3 category 7: Employee commuting**

**Base year start**

January 1 2019

**Base year end**

December 31 2019

**Base year emissions (metric tons CO2e)**

30241.74

**Comment**

**Scope 3 category 8: Upstream leased assets**

**Base year start**

January 1 2019

**Base year end**

December 31 2019

**Base year emissions (metric tons CO2e)**

0

**Comment**

**Scope 3 category 9: Downstream transportation and distribution**

**Base year start**

January 1 2019

**Base year end**

December 31 2019

**Base year emissions (metric tons CO2e)**

0

**Comment**

**Scope 3 category 10: Processing of sold products**

**Base year start**

January 1 2019

**Base year end**

December 31 2019

**Base year emissions (metric tons CO2e)**

0

**Comment**

**Scope 3 category 11: Use of sold products**

**Base year start**

January 1 2019

**Base year end**

December 31 2019

**Base year emissions (metric tons CO2e)**

0

**Comment**

**Scope 3 category 12: End of life treatment of sold products**

**Base year start**

January 1 2019

**Base year end**

December 31 2019

**Base year emissions (metric tons CO2e)**

0

**Comment**

**Scope 3 category 13: Downstream leased assets**

**Base year start**

January 1 2019

**Base year end**

December 31 2019

**Base year emissions (metric tons CO2e)**

0

**Comment**

**Scope 3 category 14: Franchises**

**Base year start**

January 1 2019

**Base year end**

December 31 2019

**Base year emissions (metric tons CO2e)**

0

**Comment**

**Scope 3 category 15: Investments**

**Base year start**

January 1 2019

**Base year end**

December 31 2019

**Base year emissions (metric tons CO2e)**

0

**Comment**

**Scope 3: Other (upstream)**

**Base year start**

January 1 2019

**Base year end**

December 31 2019

**Base year emissions (metric tons CO2e)**

0

**Comment**

**Scope 3: Other (downstream)**

**Base year start**

January 1 2019

**Base year end**

December 31 2019

**Base year emissions (metric tons CO2e)**

0

**Comment**

---

**(C5.3) Select the name of the standard, protocol, or methodology you have used to collect activity data and calculate emissions.**

Defra Environmental Reporting Guidelines: Including streamlined energy and carbon reporting guidance, 2019

IPCC Guidelines for National Greenhouse Gas Inventories, 2006

ISO 14064-1

The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition)

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## C6. Emissions data

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### C6.1

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**(C6.1) What were your organization's gross global Scope 1 emissions in metric tons CO2e?**

**Reporting year**

**Gross global Scope 1 emissions (metric tons CO2e)**

13462857.64

**Start date**

<Not Applicable>

**End date**

<Not Applicable>

**Comment**

---

### C6.2

---

**(C6.2) Describe your organization's approach to reporting Scope 2 emissions.**

**Row 1**

**Scope 2, location-based**

We are reporting a Scope 2, location-based figure

**Scope 2, market-based**

We have no operations where we are able to access electricity supplier emission factors or residual emissions factors and are unable to report a Scope 2, market-based figure

**Comment**

We are unable to report the Scope market-based figure. A market-based method reflects emissions from the electricity that companies have purposefully chosen (or their lack of choice). We cannot specify market-based emissions. In Türkiye, there is no PPA (Private Purchasing Agreement) like in Europe, therefore everyone in Türkiye uses electricity from the grid.

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### C6.3

---

**(C6.3) What were your organization's gross global Scope 2 emissions in metric tons CO2e?**

**Reporting year**

**Scope 2, location-based**

56377.41

**Scope 2, market-based (if applicable)**

<Not Applicable>

**Start date**

<Not Applicable>

**End date**

<Not Applicable>

**Comment**

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### C6.4

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**(C6.4) Are there any sources (e.g. facilities, specific GHGs, activities, geographies, etc.) of Scope 1 and Scope 2 emissions that are within your selected reporting boundary which are not included in your disclosure?**

No

---

### C6.5

**(C6.5) Account for your organization's gross global Scope 3 emissions, disclosing and explaining any exclusions.**

**Purchased goods and services**

**Evaluation status**

Relevant, calculated

**Emissions in reporting year (metric tons CO2e)**

140913.23

**Emissions calculation methodology**

Supplier-specific method

**Percentage of emissions calculated using data obtained from suppliers or value chain partners**

5

**Please explain**

In cases where organizations send verified emission results or send emission calculations that have not yet been verified, supplier-specific emission values are used and are taken into account in proportion to the number of products/services purchased. If the suppliers have not calculated their emissions yet, activity data are requested in detail. Emission factors "IPCC AR5" and "Defra guideline" are used. **\_Purchased Goods:** DEFRA was used for the emission factor. Purchasing records of the company were used as the main source in obtaining the activity data. **\_Aircraft Maintenance:** The activity data obtained from our group companies carrying out maintenance activities and the EF values in IPCC AR5 were used. **\_Personnel Meal:** For organizations that make Emission Accounts; a verification report was used as the source of emission data. The emission amount was calculated by us by requesting activity data for other organizations. IPCC AR5 is used for EFs. **\_Aircraft Catering:** Emission values calculated by the organization have been used by proportioning to the purchased product/service. IPCC AR5 is used for EFs. **\_Handling Service:** The number of emissions calculated by the relevant institution has been used in proportion to the number of services purchased. IPCC AR5 is used for EFs.

**Capital goods**

**Evaluation status**

Relevant, calculated

**Emissions in reporting year (metric tons CO2e)**

58275.79

**Emissions calculation methodology**

Supplier-specific method

**Percentage of emissions calculated using data obtained from suppliers or value chain partners**

2

**Please explain**

The total emission values in the public reports of the institutions that supply us with our capital assets have been examined. Emission values per product/aircraft are calculated by taking into account the production amounts of the establishments and are included in the calculation under the indirect emission title.

**Fuel-and-energy-related activities (not included in Scope 1 or 2)**

**Evaluation status**

Relevant, calculated

**Emissions in reporting year (metric tons CO2e)**

2790238.5

**Emissions calculation methodology**

Fuel-based method

**Percentage of emissions calculated using data obtained from suppliers or value chain partners**

91

**Please explain**

Jet fuels used in aircraft; Diesel and gasoline consumption of road and apron vehicles under the moving combustion heading, diesel consumption from standby power units evaluated as stationary combustion, and activity data regarding all natural gas consumption used for heating and WTT-EFs taken from the DEFRA guide are included in the calculation.

**Upstream transportation and distribution**

**Evaluation status**

Not relevant, explanation provided

**Emissions in reporting year (metric tons CO2e)**

<Not Applicable>

**Emissions calculation methodology**

<Not Applicable>

**Percentage of emissions calculated using data obtained from suppliers or value chain partners**

<Not Applicable>

**Please explain**

This category is not relevant to our organization. There is no Upstream transportation and distribution activities occur under reporting boundaries of the company.

## Waste generated in operations

### Evaluation status

Relevant, calculated

### Emissions in reporting year (metric tons CO2e)

36028.28

### Emissions calculation methodology

Waste-type-specific method

### Percentage of emissions calculated using data obtained from suppliers or value chain partners

1.2

### Please explain

Records regarding the types and amounts of waste generated from our facilities and sent to the landfill are taken as activity data. For EF, the DEFRA guideline was used.

## Business travel

### Evaluation status

Relevant, calculated

### Emissions in reporting year (metric tons CO2e)

21379.48

### Emissions calculation methodology

Hybrid method

### Percentage of emissions calculated using data obtained from suppliers or value chain partners

1

### Please explain

The data for the hotels where our employees stay during their business trips are obtained from our electronic records. For EF, 2 separate sources were used: DEFRA guide and hotelfootprints.org

## Employee commuting

### Evaluation status

Relevant, calculated

### Emissions in reporting year (metric tons CO2e)

25155.51

### Emissions calculation methodology

Distance-based method

### Percentage of emissions calculated using data obtained from suppliers or value chain partners

1

### Please explain

For the emissions caused by the commuting of the employees to their work, km data and/or average consumption information were obtained from the contracted companies over the routes on which the vehicles operate. IPCC AR5 was used as EF.

## Upstream leased assets

### Evaluation status

Not relevant, explanation provided

### Emissions in reporting year (metric tons CO2e)

<Not Applicable>

### Emissions calculation methodology

<Not Applicable>

### Percentage of emissions calculated using data obtained from suppliers or value chain partners

<Not Applicable>

### Please explain

This category is not relevant to our organization. There is no Upstream leased assets activities occur under reporting boundaries of the company.

## Downstream transportation and distribution

### Evaluation status

Not relevant, explanation provided

### Emissions in reporting year (metric tons CO2e)

<Not Applicable>

### Emissions calculation methodology

<Not Applicable>

### Percentage of emissions calculated using data obtained from suppliers or value chain partners

<Not Applicable>

### Please explain

This category is not relevant to our organization. There is no Downstream transportation and distribution activities occur under reporting boundaries of the company.

## Processing of sold products

### Evaluation status

Not relevant, explanation provided

### Emissions in reporting year (metric tons CO2e)

<Not Applicable>

### Emissions calculation methodology

<Not Applicable>

### Percentage of emissions calculated using data obtained from suppliers or value chain partners

<Not Applicable>

### Please explain

This category is not relevant to our organization. There is no Processing of sold products activities occur under reporting boundaries of the company.

## Use of sold products

### Evaluation status

Not relevant, explanation provided

### Emissions in reporting year (metric tons CO2e)

<Not Applicable>

### Emissions calculation methodology

<Not Applicable>

### Percentage of emissions calculated using data obtained from suppliers or value chain partners

<Not Applicable>

### Please explain

This category is not relevant to our organization. There is no Use of sold products activities occur under reporting boundaries of the company.

## End of life treatment of sold products

### Evaluation status

Not relevant, explanation provided

### Emissions in reporting year (metric tons CO2e)

<Not Applicable>

### Emissions calculation methodology

<Not Applicable>

### Percentage of emissions calculated using data obtained from suppliers or value chain partners

<Not Applicable>

### Please explain

This category is not relevant to our organization. There is no End of life treatment of sold products activities occur under reporting boundaries of the company.

## Downstream leased assets

### Evaluation status

Not relevant, explanation provided

### Emissions in reporting year (metric tons CO2e)

<Not Applicable>

### Emissions calculation methodology

<Not Applicable>

### Percentage of emissions calculated using data obtained from suppliers or value chain partners

<Not Applicable>

### Please explain

This category is not relevant to our organization. There is no Downstream leased assets activities occur under reporting boundaries of the company.

## Franchises

### Evaluation status

Not relevant, explanation provided

### Emissions in reporting year (metric tons CO2e)

<Not Applicable>

### Emissions calculation methodology

<Not Applicable>

### Percentage of emissions calculated using data obtained from suppliers or value chain partners

<Not Applicable>

### Please explain

This category is not relevant to our organization. There is no Franchises of the company.

**Investments**

**Evaluation status**

Not relevant, explanation provided

**Emissions in reporting year (metric tons CO2e)**

<Not Applicable>

**Emissions calculation methodology**

<Not Applicable>

**Percentage of emissions calculated using data obtained from suppliers or value chain partners**

<Not Applicable>

**Please explain**

This category is not relevant to our organization. There is no Investments of the company.

**Other (upstream)**

**Evaluation status**

Not relevant, explanation provided

**Emissions in reporting year (metric tons CO2e)**

<Not Applicable>

**Emissions calculation methodology**

<Not Applicable>

**Percentage of emissions calculated using data obtained from suppliers or value chain partners**

<Not Applicable>

**Please explain**

NA

**Other (downstream)**

**Evaluation status**

Not relevant, explanation provided

**Emissions in reporting year (metric tons CO2e)**

<Not Applicable>

**Emissions calculation methodology**

<Not Applicable>

**Percentage of emissions calculated using data obtained from suppliers or value chain partners**

<Not Applicable>

**Please explain**

NA

C6.7

---

**(C6.7) Are carbon dioxide emissions from biogenic carbon relevant to your organization?**

No

C6.10

---

**(C6.10) Describe your gross global combined Scope 1 and 2 emissions for the reporting year in metric tons CO2e per unit currency total revenue and provide any additional intensity metrics that are appropriate to your business operations.**

**Intensity figure**

0.00126514

**Metric numerator (Gross global combined Scope 1 and 2 emissions, metric tons CO2e)**

13519235.06

**Metric denominator**

unit total revenue

**Metric denominator: Unit total**

10686000000

**Scope 2 figure used**

Location-based

**% change from previous year**

6.67

**Direction of change**

Decreased

**Reason for change**

Across the aviation industry, 2021 showed an upward momentum in total revenue growth compared to 2020. This increase of approximately 32% also means an increase in emissions and fuel. However, as Turkish Airlines, we have increased our revenues by a higher percentage than the sectoral revenue growth. Compared to 2020, our total income increased by 58.7%. Our emissions, on the other hand, have increased due to the end of the downward movement in aviation due to the pandemic, and the increase in the number of frequencies and sales. However, our Emissions increased less than our revenue. This also shows that there are more efficient flights compared to last year, where the intensity figure was 0.00135553. There is a 6.67% reduction in emission intensity according to income.

---

**C-TS6.15**

**(C-TS6.15) What are your primary intensity (activity-based) metrics that are appropriate to your emissions from transport activities in Scope 1, 2, and 3?**

**Aviation**

**Scopes used for calculation of intensities**

Report Scope 1 + 2

**Intensity figure**

0.000527085

**Metric numerator: emissions in metric tons CO2e**

13519235.06

**Metric denominator: unit**

t.km

**Metric denominator: unit total**

25649076956.92

**% change from previous year**

-21.1

**Please explain any exclusions in your coverage of transport emissions in selected category, and reasons for change in emissions intensity.**

According to ATK in 2021, there is a decrease of approximately 21.11% in emission intensity compared to 2020 where the intensity figure was 0.000668024. This means that there is a decrease in emission intensity and an increase in efficiency compared to last year.

**ALL**

**Scopes used for calculation of intensities**

Report Scope 1 + 2

**Intensity figure**

0.000527085

**Metric numerator: emissions in metric tons CO2e**

13519235.06

**Metric denominator: unit**

t.km

**Metric denominator: unit total**

25649076956.92

**% change from previous year**

-21.1

**Please explain any exclusions in your coverage of transport emissions in selected category, and reasons for change in emissions intensity.**

According to ATK in 2021, there is a decrease of approximately 21.11% in emission intensity compared to 2020 where the intensity figure was 0.000668024. This means that there is a decrease in emission intensity and an increase in efficiency compared to last year.

---

**C7. Emissions breakdowns**

## C7.1

(C7.1) Does your organization break down its Scope 1 emissions by greenhouse gas type?

Yes

### C7.1a

(C7.1a) Break down your total gross global Scope 1 emissions by greenhouse gas type and provide the source of each used greenhouse warming potential (GWP).

| Greenhouse gas | Scope 1 emissions (metric tons of CO2e) | GWP Reference                                 |
|----------------|---|---|
| CO2            | 13361215.42                             | IPCC Fifth Assessment Report (AR5 – 100 year) |
| CH4            | 2639.24                                 | IPCC Fifth Assessment Report (AR5 – 100 year) |
| N2O            | 99002.98                                | IPCC Fifth Assessment Report (AR5 – 100 year) |

## C7.2

(C7.2) Break down your total gross global Scope 1 emissions by country/region.

| Country/Region | Scope 1 emissions (metric tons CO2e) |
|----------------|--------------------------------------|
| Turkey         | 13462857.64                          |

## C7.3

(C7.3) Indicate which gross global Scope 1 emissions breakdowns you are able to provide.

By business division

By facility

By activity

### C7.3a

(C7.3a) Break down your total gross global Scope 1 emissions by business division.

| Business division   | Scope 1 emissions (metric ton CO2e) |
|---|-------------------------------------|
| Flights   | 10014847.64                         |
| Terminals   | 54.09                               |
| Departments for Cargo Activities  | 3436563.86                          |
| Offices (sales locations, technical units, training centers, warehouse) | 9359.73                             |
| Headquartes   | 432.05                              |
| Ground operations (on road&off road vehicles)                           | 1600.28                             |

### C7.3b

(C7.3b) Break down your total gross global Scope 1 emissions by business facility.

| Facility   | Scope 1 emissions (metric tons CO2e) | Latitude  | Longitude |
|--|--------------------------------------|-----------|-----------|
| Istanbul (Including Scope 1 GHG emissions from Aircrafts and Headquarters) | 13462761.14                          | 41.263844 | 28.705559 |
| Ankara   | 81.459                               | 40.124    | 32.9992   |
| Izmir  | 15.046                               | 38.2924   | 27.157    |

### C7.3c

**(C7.3c) Break down your total gross global Scope 1 emissions by business activity.**

| Activity   | Scope 1 emissions (metric tons CO2e) |
|--|--------------------------------------|
| Mobile combustion (Aircraft fuel, on & off road vehicles)  | 13453011.78                          |
| Stationary combustion (Heating, generators, and others)  | 7131.321                             |
| Fugitive emissions (Refrigerator, chiller, current breaker, air conditioning, cold chambers, fire extinguishers) | 2714.539                             |

**C-CE7.4/C-CH7.4/C-CO7.4/C-EU7.4/C-MM7.4/C-OG7.4/C-ST7.4/C-TO7.4/C-TS7.4**

**(C-CE7.4/C-CH7.4/C-CO7.4/C-EU7.4/C-MM7.4/C-OG7.4/C-ST7.4/C-TO7.4/C-TS7.4) Break down your organization's total gross global Scope 1 emissions by sector production activity in metric tons CO2e.**

|  | Gross Scope 1 emissions, metric tons CO2e | Net Scope 1 emissions , metric tons CO2e | Comment          |
|--|---|--|------------------|
| Cement production activities                   | <Not Applicable>                          | <Not Applicable>                         | <Not Applicable> |
| Chemicals production activities                | <Not Applicable>                          | <Not Applicable>                         | <Not Applicable> |
| Coal production activities                     | <Not Applicable>                          | <Not Applicable>                         | <Not Applicable> |
| Electric utility activities                    | <Not Applicable>                          | <Not Applicable>                         | <Not Applicable> |
| Metals and mining production activities        | <Not Applicable>                          | <Not Applicable>                         | <Not Applicable> |
| Oil and gas production activities (upstream)   | <Not Applicable>                          | <Not Applicable>                         | <Not Applicable> |
| Oil and gas production activities (midstream)  | <Not Applicable>                          | <Not Applicable>                         | <Not Applicable> |
| Oil and gas production activities (downstream) | <Not Applicable>                          | <Not Applicable>                         | <Not Applicable> |
| Steel production activities                    | <Not Applicable>                          | <Not Applicable>                         | <Not Applicable> |
| Transport OEM activities                       | <Not Applicable>                          | <Not Applicable>                         | <Not Applicable> |
| Transport services activities                  | 13462857.64                               | <Not Applicable>                         |                  |

**C7.5**

**(C7.5) Break down your total gross global Scope 2 emissions by country/region.**

| Country/Region | Scope 2, location-based (metric tons CO2e) | Scope 2, market-based (metric tons CO2e) |
|----------------|--|--|
| Turkey         | 56377.41                                   | 0  |

**C7.6**

**(C7.6) Indicate which gross global Scope 2 emissions breakdowns you are able to provide.**

- By business division
- By facility
- By activity

**C7.6a**

**(C7.6a) Break down your total gross global Scope 2 emissions by business division.**

| Business division   | Scope 2, location-based (metric tons CO2e) | Scope 2, market-based (metric tons CO2e) |
|---|--|--|
| Flights   | 0  | 0  |
| Departments for Cargo Activities  | 32242.164                                  | 0  |
| Offices (sales locations, technical units, training centers, warehouse) | 0  | 0  |
| Headquartes   | 20215.01                                   | 0  |
| GPU (Ground Power Unit) & 400 Hz  | 3920.235                                   | 0  |

**C7.6b**

**(C7.6b) Break down your total gross global Scope 2 emissions by business facility.**

| Facility  | Scope 2, location-based (metric tons CO2e) | Scope 2, market-based (metric tons CO2e) |
|---|--|--|
| Istanbul (Including 400Hz and GPU from flights operated and Headquarters) | 55765.334                                  | 0  |
| Ankara  | 449.68                                     | 0  |
| Izmir   | 162.396                                    | 0  |

C7.6c

(C7.6c) Break down your total gross global Scope 2 emissions by business activity.

| Activity                                      | Scope 2, location-based (metric tons CO2e) | Scope 2, market-based (metric tons CO2e) |
|---|--|--|
| Electricity consumption                       | 43276.028                                  | 0  |
| Central heating with natural gas              | 9181.147                                   | 0  |
| 400 Hz Consumption                            | 307.183                                    | 0  |
| Ground Power Unit (GPU) Usage (Domestic)      | 198.16                                     | 0  |
| Ground Power Unit (GPU) Usage (International) | 3613.05                                    | 0  |

C-CE7.7/C-CH7.7/C-CO7.7/C-MM7.7/C-OG7.7/C-ST7.7/C-TO7.7/C-TS7.7

(C-CE7.7/C-CH7.7/C-CO7.7/C-MM7.7/C-OG7.7/C-ST7.7/C-TO7.7/C-TS7.7) Break down your organization's total gross global Scope 2 emissions by sector production activity in metric tons CO2e.

|  | Scope 2, location-based, metric tons CO2e | Scope 2, market-based (if applicable), metric tons CO2e | Comment          |
|--|---|---|------------------|
| Cement production activities                   | <Not Applicable>                          | <Not Applicable>  | <Not Applicable> |
| Chemicals production activities                | <Not Applicable>                          | <Not Applicable>  | <Not Applicable> |
| Coal production activities                     | <Not Applicable>                          | <Not Applicable>  | <Not Applicable> |
| Metals and mining production activities        | <Not Applicable>                          | <Not Applicable>  | <Not Applicable> |
| Oil and gas production activities (upstream)   | <Not Applicable>                          | <Not Applicable>  | <Not Applicable> |
| Oil and gas production activities (midstream)  | <Not Applicable>                          | <Not Applicable>  | <Not Applicable> |
| Oil and gas production activities (downstream) | <Not Applicable>                          | <Not Applicable>  | <Not Applicable> |
| Steel production activities                    | <Not Applicable>                          | <Not Applicable>  | <Not Applicable> |
| Transport OEM activities                       | <Not Applicable>                          | <Not Applicable>  | <Not Applicable> |
| Transport services activities                  | 56377.41                                  |   |                  |

C7.9

(C7.9) How do your gross global emissions (Scope 1 and 2 combined) for the reporting year compare to those of the previous reporting year?

Increased

C7.9a

**(C7.9a) Identify the reasons for any change in your gross global emissions (Scope 1 and 2 combined), and for each of them specify how your emissions compare to the previous year.**

|   | Change in emissions (metric tons CO2e) | Direction of change | Emissions value (percentage) | Please explain calculation  |
|---|--|---------------------|------------------------------|---|
| Change in renewable energy consumption  | 0                                      | No change           | 0                            | In the reporting year and in the previous year there was no renewable energy consumption at Turkish Airlines. Therefore, the renewable energy consumption amount is zero in 2021 and was zero in 2020, there was no change in the consumption amount.   |
| Other emissions reduction activities    | 116809                                 | Decreased           | 1.28                         | Gross Scope 1+2 emissions decreased by 1.28%, due to energy efficiency activities undertaken. Despite an increase in the values and services provided, emissions have not grown as high as could be expected due to emission reduction activities. We have achieved jet fuel consumption reductions in flight operations. These are due to fuel efficiency activities implemented in 2021. we invest in new technologies in order to optimize our flight activities, and constantly optimize our flight network, flight route and schedule categorised into 4 groups: Flight Operation Applications, Technical Maintenance Practices, Flight Planning (Dispatch) Applications, and Ground Operation Applications. We are able to reduce fuel consumption with applications such as single-engine taxi, low flap use on take-off, low flap use on landing and monitoring of aircraft aerodynamics etc. As a result of all these operational activities, in 2021, with 18 initiatives in our operations, we saved 116,809.00 tons of carbon emissions. Our total S1 and S2 emissions in the previous year was 9128126.00 tons CO2e, therefore we arrived at -1.28% decrease through $(-116,809.00 / 9128126.00) * 100 = -1.28\%$ (i.e. an 1.28% decrease in emissions). |
| Divestment                              |  | <Not Applicable >   |                              |   |
| Acquisitions                            |  | <Not Applicable >   |                              |   |
| Mergers                                 |  | <Not Applicable >   |                              |   |
| Change in output                        | 4507918.055                            | Increased           | 49.38                        | Compared to 2020, there has been an increase of 49.38 % in our emissions from flight activities. The reason for this situation is the weakening of the effects of the Covid-19 pandemic, especially in the aviation sector, and the increase in the number of flights in 2021. In 2020 total Scope 1 and Scope 2 were 9128126.00 tonnes. In 2021 total Scope 1 and Scope 2 would be 13519235.06 tonnes (excluding emission reduction activities.) Therefore, we arrived at 4507918.055 tonnes of increase in the change in output and we arrived at 49.38% through $(4507918.055 / 9128126.00) * 100 = 49.38\%$ (i.e. a 49.38% increase in emissions).  |
| Change in methodology                   |  | <Not Applicable >   |                              |   |
| Change in boundary                      |  | <Not Applicable >   |                              |   |
| Change in physical operating conditions |  | <Not Applicable >   |                              |   |
| Unidentified                            |  | <Not Applicable >   |                              |   |
| Other                                   |  | <Not Applicable >   |                              |   |

## C7.9b

**(C7.9b) Are your emissions performance calculations in C7.9 and C7.9a based on a location-based Scope 2 emissions figure or a market-based Scope 2 emissions figure?**

Location-based

## C8. Energy

### C8.1

**(C8.1) What percentage of your total operational spend in the reporting year was on energy?**

More than 30% but less than or equal to 35%

### C8.2

**(C8.2) Select which energy-related activities your organization has undertaken.**

|  | Indicate whether your organization undertook this energy-related activity in the reporting year |
|--|---|
| Consumption of fuel (excluding feedstocks)         | Yes   |
| Consumption of purchased or acquired electricity   | Yes   |
| Consumption of purchased or acquired heat          | Yes   |
| Consumption of purchased or acquired steam         | No  |
| Consumption of purchased or acquired cooling       | Yes   |
| Generation of electricity, heat, steam, or cooling | Yes   |

**C8.2a**

**(C8.2a) Report your organization's energy consumption totals (excluding feedstocks) in MWh.**

|   | Heating value             | MWh from renewable sources | MWh from non-renewable sources | Total (renewable and non-renewable) MWh |
|---|---------------------------|----------------------------|--------------------------------|---|
| Consumption of fuel (excluding feedstock)               | LHV (lower heating value) | 0                          | 51903748.21                    | 51903748.21                             |
| Consumption of purchased or acquired electricity        | <Not Applicable>          | 0                          | 891898.44                      | 891898.44                               |
| Consumption of purchased or acquired heat               | <Not Applicable>          | 0                          | 45324.43                       | 45324.43                                |
| Consumption of purchased or acquired steam              | <Not Applicable>          | <Not Applicable>           | <Not Applicable>               | <Not Applicable>                        |
| Consumption of purchased or acquired cooling            | <Not Applicable>          | 0                          | 35024.19                       | 35024.19                                |
| Consumption of self-generated non-fuel renewable energy | <Not Applicable>          | 0                          | <Not Applicable>               | 0                                       |
| Total energy consumption                                | <Not Applicable>          | 0                          | 52875995.27                    | 52875995.27                             |

**C8.2b**

**(C8.2b) Select the applications of your organization's consumption of fuel.**

|   | Indicate whether your organization undertakes this fuel application |
|---|---|
| Consumption of fuel for the generation of electricity   | No  |
| Consumption of fuel for the generation of heat          | Yes   |
| Consumption of fuel for the generation of steam         | No  |
| Consumption of fuel for the generation of cooling       | No  |
| Consumption of fuel for co-generation or tri-generation | Yes   |

**C8.2c**

**(C8.2c) State how much fuel in MWh your organization has consumed (excluding feedstocks) by fuel type.**

**Sustainable biomass**

**Heating value**

Unable to confirm heating value

**Total fuel MWh consumed by the organization**

0

**MWh fuel consumed for self-generation of electricity**

<Not Applicable>

**MWh fuel consumed for self-generation of heat**

0

**MWh fuel consumed for self-generation of steam**

<Not Applicable>

**MWh fuel consumed for self-generation of cooling**

<Not Applicable>

**MWh fuel consumed for self- cogeneration or self-trigeneration**

0

**Comment**

**Other biomass**

**Heating value**

Unable to confirm heating value

**Total fuel MWh consumed by the organization**

0

**MWh fuel consumed for self-generation of electricity**

<Not Applicable>

**MWh fuel consumed for self-generation of heat**

0

**MWh fuel consumed for self-generation of steam**

<Not Applicable>

**MWh fuel consumed for self-generation of cooling**

<Not Applicable>

**MWh fuel consumed for self- cogeneration or self-trigeneration**

0

**Comment**

**Other renewable fuels (e.g. renewable hydrogen)**

**Heating value**

Unable to confirm heating value

**Total fuel MWh consumed by the organization**

0

**MWh fuel consumed for self-generation of electricity**

<Not Applicable>

**MWh fuel consumed for self-generation of heat**

0

**MWh fuel consumed for self-generation of steam**

<Not Applicable>

**MWh fuel consumed for self-generation of cooling**

<Not Applicable>

**MWh fuel consumed for self- cogeneration or self-trigeneration**

0

**Comment**

**Coal**

**Heating value**

Unable to confirm heating value

**Total fuel MWh consumed by the organization**

0

**MWh fuel consumed for self-generation of electricity**

<Not Applicable>

**MWh fuel consumed for self-generation of heat**

0

**MWh fuel consumed for self-generation of steam**

<Not Applicable>

**MWh fuel consumed for self-generation of cooling**

<Not Applicable>

**MWh fuel consumed for self- cogeneration or self-trigeneration**

0

**Comment**

**Oil**

**Heating value**

Unable to confirm heating value

**Total fuel MWh consumed by the organization**

0

**MWh fuel consumed for self-generation of electricity**

<Not Applicable>

**MWh fuel consumed for self-generation of heat**

0

**MWh fuel consumed for self-generation of steam**

<Not Applicable>

**MWh fuel consumed for self-generation of cooling**

<Not Applicable>

**MWh fuel consumed for self- cogeneration or self-trigeneration**

0

**Comment**

**Gas**

**Heating value**

LHV

**Total fuel MWh consumed by the organization**

34583.87

**MWh fuel consumed for self-generation of electricity**

<Not Applicable>

**MWh fuel consumed for self-generation of heat**

0

**MWh fuel consumed for self-generation of steam**

<Not Applicable>

**MWh fuel consumed for self-generation of cooling**

<Not Applicable>

**MWh fuel consumed for self- cogeneration or self-trigeneration**

34583.87

**Comment**

**Other non-renewable fuels (e.g. non-renewable hydrogen)**

**Heating value**

LHV

**Total fuel MWh consumed by the organization**

51869164.34

**MWh fuel consumed for self-generation of electricity**

<Not Applicable>

**MWh fuel consumed for self-generation of heat**

51869164.34

**MWh fuel consumed for self-generation of steam**

<Not Applicable>

**MWh fuel consumed for self-generation of cooling**

<Not Applicable>

**MWh fuel consumed for self- cogeneration or self-trigeneration**

0

**Comment**

**Total fuel**

**Heating value**

LHV

**Total fuel MWh consumed by the organization**

51903311.67

**MWh fuel consumed for self-generation of electricity**

<Not Applicable>

**MWh fuel consumed for self-generation of heat**

51869164.34

**MWh fuel consumed for self-generation of steam**

<Not Applicable>

**MWh fuel consumed for self-generation of cooling**

<Not Applicable>

**MWh fuel consumed for self- cogeneration or self-trigeneration**

34583.87

**Comment**

**C8.2d**

(C8.2d) Provide details on the electricity, heat, steam, and cooling your organization has generated and consumed in the reporting year.

|             | Total Gross generation (MWh) | Generation that is consumed by the organization (MWh) | Gross generation from renewable sources (MWh) | Generation from renewable sources that is consumed by the organization (MWh) |
|-------------|------------------------------|---|---|--|
| Electricity | 4648.53                      | 4648.53   | 0   | 0  |
| Heat        | 2002.6                       | 2002.6  | 0   | 0  |
| Steam       | 0                            | 0   | 0   | 0  |
| Cooling     | 3576.66                      | 3576.66   | 0   | 0  |

**C8.2g**

(C8.2g) Provide a breakdown of your non-fuel energy consumption by country.

**Country/area**

Turkey

**Consumption of electricity (MWh)**

847919.7

**Consumption of heat, steam, and cooling (MWh)**

69266.25

**Total non-fuel energy consumption (MWh) [Auto-calculated]**

917185.95

**Is this consumption excluded from your RE100 commitment?**

<Not Applicable>

**C-TS8.5**

(C-TS8.5) Provide any efficiency metrics that are appropriate for your organization's transport products and/or services.

**Activity**

Aviation

**Metric figure**

0.146404587

**Metric numerator**

Other, please specify (Kilograms of fuel)

**Metric denominator**

t.km

**Metric numerator: Unit total**

3755142516.42

**Metric denominator: Unit total**

25649076956.92

**% change from last year**

-30

**Please explain**

Emission intensity value decreased by 30% compared to the previous year. This increase is valid for the emission intensity value evaluated together with kg fuel and t.km "Available Ton Km (ATK)" values. Turkish Airlines fleet performed more efficient flights in 2021 compared to 2020 where the intensity figure was " 0.2103943 kg of fuel" per t.km.

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## C9. Additional metrics

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### C9.1

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(C9.1) Provide any additional climate-related metrics relevant to your business.

**Description**

Please select

**Metric value**

**Metric numerator**

**Metric denominator (intensity metric only)**

**% change from previous year**

**Direction of change**

<Not Applicable>

**Please explain**

N/A

---

### C-TO9.3/C-TS9.3

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(C-TO9.3/C-TS9.3) Provide tracking metrics for the implementation of low-carbon transport technology over the reporting year.

**Activity**

Aviation

**Metric**

Fleet adoption

**Technology**

Other, please specify (Fuel efficient aircraft)

**Metric figure**

20

**Metric unit**

Other, please specify (% of fleet)

**Explanation**

"Turkish Airlines is the 9th largest airline company in terms of fleet size among airlines carrying passengers as of the end of 2021 with its 370 aircraft. Among the top 10 airlines in terms of fleet size, with an average fleet age of 8.5, Turkish Airlines is the 4th airline company. As of the end of 2021, Turkish Airlines has 75 new generation aircraft which are fuel-efficient, more environmentally friendly, and save an average of 15% fuel compared to the equivalent aircraft, and regarding the fleet size, it is the airline with the highest rate of new generation aircraft among the 10 largest airline companies in the world. Thanks to our fleet renewal efforts, the number of our energy-efficient aircraft reached 75 in 2021 and the ratio of fuel-efficient aircraft to the total fleet is %20."

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(C-CE9.6/C-CG9.6/C-CH9.6/C-CN9.6/C-CO9.6/C-EU9.6/C-MM9.6/C-OG9.6/C-RE9.6/C-ST9.6/C-TO9.6/C-TS9.6) Does your organization invest in research and development (R&D) of low-carbon products or services related to your sector activities?

|       | Investment in low-carbon R&D | Comment |
|-------|------------------------------|---------|
| Row 1 | Yes                          |         |

C-TO9.6a/C-TS9.6a

(C-TO9.6a/C-TS9.6a) Provide details of your organization’s investments in low-carbon R&D for transport-related activities over the last three years.

**Activity**

Aviation

**Technology area**

Other, please specify (Fuel Management)

**Stage of development in the reporting year**

Full/commercial-scale demonstration

**Average % of total R&D investment over the last 3 years**

≤20%

**R&D investment figure in the reporting year (optional)**

**Comment**

Advanced Fuel Management System (FMIS): Turkish Airlines' new fuel management system was commissioned at the end of 2016. This new system enables us especially to calculate the costs of ATC operations (airborne instructions, deviations from the flight plan, etc.), and to assess the alternatives along with such cost items calculated. It also allows us to monitor closely all important factors such as any and all kinds of deviations, altitude and speed changes performed in the flight plan and the actual flight route, etc. which affect the fuel consumption, and to take actions in a very short time in all potential areas

C10. Verification

C10.1

(C10.1) Indicate the verification/assurance status that applies to your reported emissions.

|  | Verification/assurance status                          |
|--|--|
| Scope 1                                  | Third-party verification or assurance process in place |
| Scope 2 (location-based or market-based) | Third-party verification or assurance process in place |
| Scope 3                                  | Third-party verification or assurance process in place |

C10.1a

(C10.1a) Provide further details of the verification/assurance undertaken for your Scope 1 emissions, and attach the relevant statements.

**Verification or assurance cycle in place**

Annual process

**Status in the current reporting year**

Complete

**Type of verification or assurance**

Reasonable assurance

**Attach the statement**

Turkish Airlines GHG Verification\_v2.pdf

**Page/ section reference**

page 2.

**Relevant standard**

ISO14064-3

**Proportion of reported emissions verified (%)**

100

## C10.1b

---

**(C10.1b) Provide further details of the verification/assurance undertaken for your Scope 2 emissions and attach the relevant statements.**

**Scope 2 approach**

Scope 2 location-based

**Verification or assurance cycle in place**

Annual process

**Status in the current reporting year**

Complete

**Type of verification or assurance**

Reasonable assurance

**Attach the statement**

Turkish Airlines GHG Verification\_v2.pdf

**Page/ section reference**

page 2.

**Relevant standard**

ISO14064-3

**Proportion of reported emissions verified (%)**

100

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## C10.1c

---

**(C10.1c) Provide further details of the verification/assurance undertaken for your Scope 3 emissions and attach the relevant statements.**

**Scope 3 category**

Scope 3: Purchased goods and services

Scope 3: Capital goods

Scope 3: Fuel and energy-related activities (not included in Scopes 1 or 2)

Scope 3: Upstream transportation and distribution

Scope 3: Waste generated in operations

Scope 3: Business travel

Scope 3: Employee commuting

Scope 3: Upstream leased assets

**Verification or assurance cycle in place**

Annual process

**Status in the current reporting year**

Complete

**Type of verification or assurance**

Reasonable assurance

**Attach the statement**

Turkish Airlines GHG Verification\_v2.pdf

**Page/section reference**

page 2.

**Relevant standard**

ISO14064-3

**Proportion of reported emissions verified (%)**

100

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## C10.2

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**(C10.2) Do you verify any climate-related information reported in your CDP disclosure other than the emissions figures reported in C6.1, C6.3, and C6.5?**

Yes

## C10.2a

---

**(C10.2a) Which data points within your CDP disclosure have been verified, and which verification standards were used?**

| Disclosure module verification relates to | Data verified                                       | Verification standard | Please explain   |
|---|---|-----------------------|--|
| C11. Carbon pricing                       | Other, please specify (Emissions covered by UK ETS) | UK ETS Scheme         | Verified Scope 1 emissions in metric tons CO2e covered by UK ETS - 3,130 tonnes. UK ETS Verification Report.pdf                        |
| C11. Carbon pricing                       | Other, please specify (Emissions covered by Corsia) | Corsia Scheme         | Verified Scope 1 emissions in metric tons CO2e covered by Corsia - 7,442,943.07 tonnes. THY AO_2021_CORZIA_Verification Report_ENG.pdf |

**C11. Carbon pricing**

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**C11.1**

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**(C11.1) Are any of your operations or activities regulated by a carbon pricing system (i.e. ETS, Cap & Trade or Carbon Tax)?**

Yes

**C11.1a**

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**(C11.1a) Select the carbon pricing regulation(s) which impacts your operations.**

- EU ETS
- Switzerland ETS
- UK ETS
- Other ETS, please specify (CORZIA)

**C11.1b**

---

**(C11.1b) Complete the following table for each of the emissions trading schemes you are regulated by.**

**EU ETS**

**% of Scope 1 emissions covered by the ETS**

0.08

**% of Scope 2 emissions covered by the ETS**

0

**Period start date**

January 1 2021

**Period end date**

December 31 2021

**Allowances allocated**

10838

**Allowances purchased**

10838

**Verified Scope 1 emissions in metric tons CO2e**

10838

**Verified Scope 2 emissions in metric tons CO2e**

0

**Details of ownership**

Facilities we own and operate

**Comment**

Scope 1 emission of 2021 : 13.462.857,64 % of Scope 1 emissions covered by the ETS : 0.081

#### Switzerland ETS

**% of Scope 1 emissions covered by the ETS**

0

**% of Scope 2 emissions covered by the ETS**

0

**Period start date**

January 1 2021

**Period end date**

December 31 2021

**Allowances allocated**

0

**Allowances purchased**

0

**Verified Scope 1 emissions in metric tons CO2e**

0

**Verified Scope 2 emissions in metric tons CO2e**

0

**Details of ownership**

Facilities we own and operate

**Comment**

We have no emissions as we did not have any flights under CH-ETS in the 2021 reporting year. Therefore, we have no offset obligation.

#### UK ETS

**% of Scope 1 emissions covered by the ETS**

0.02

**% of Scope 2 emissions covered by the ETS**

0

**Period start date**

January 1 2021

**Period end date**

December 31 2021

**Allowances allocated**

3130

**Allowances purchased**

3130

**Verified Scope 1 emissions in metric tons CO2e**

3130

**Verified Scope 2 emissions in metric tons CO2e**

0

**Details of ownership**

Facilities we own and operate

**Comment**

Scope 1 emission of 2021 : 13.462.857,64 % of Scope 1 emissions covered by the ETS : 0.023

**Other ETS, please specify**

**% of Scope 1 emissions covered by the ETS**

86

**% of Scope 2 emissions covered by the ETS**

0

**Period start date**

January 1 2021

**Period end date**

December 31 2021

**Allowances allocated**

0

**Allowances purchased**

0

**Verified Scope 1 emissions in metric tons CO2e**

11572483.02

**Verified Scope 2 emissions in metric tons CO2e**

0

**Details of ownership**

Facilities we own and operate

**Comment**

Verified Scope 1 emissions in metric tons CO2e : 11,572,483.02 . We calculate our greenhouse gas emissions in accordance with the CORSIA Scheme published by the international aviation authority ICAO and get verification from an independent verification body authorized by ICAO. In the following years, our emissions remaining above the base year emission values will be neutralized with the carbon credits to be obtained the projects in line with the CORSIA.

**C11.1d**

---

**(C11.1d) What is your strategy for complying with the systems you are regulated by or anticipate being regulated by?**

- **EU-ETS, CH-ETS and UK-ETS** : We fully comply with the international directives of Emission Trading Systems, additional regulations, and revisions. Emissions from covered flights are calculated, verified and reported to the competent authority. The credit corresponding to the verified emission amount is purchased. ( The Greenhouse Gas Emissions Trading Scheme Order 2020 (Directive Of UK-ETS), Directive 2003/87/EC Of The European Parliament and Of The Council Of 13 October 2003 (Directive Of EU-ETS), Swiss-ETS Agreement )
- **CORSIA** : We fully comply with the international and local directives, additional regulations, and revisions. Emissions from covered flights are calculated, verified, and reported to the competent authority. In the following years, emissions that exceed the determined base year emissions amount will be offset. International Regulation Annex 16 Environmental Protection Volume IV Carbon Offsetting and Reduction Scheme For International Aviation (CORSIA) , Local Regulation Implementing Regulation On Carbon Offsetting And Reduction Scheme For International Aviation (SHT-CORSIA) ).

We follow all the regulations within the scope of Emissions Trading Systems. We evaluate our compliance with the requirements constantly. The Corporate Sustainability Management of Turkish Airlines follows up on the regulations. If deemed necessary, the developments are evaluated by the Sustainability Committee, consisting of senior executives. Additional cost studies in the upcoming years for Turkish Airlines regarding these systems have been completed and presented to the Sustainability Committee.

Fuel Efficiency Practices from Jet Fuel Consumption/from Flights

To invest in new generation aircraft and new technologies

To increase the use of SAF: investing in the use of SAF in the upcoming years.

To provide route optimization: Shorter planned flight periods in some sectors increased the capacity supply and resulted in the carriage of payload instead of fuel, providing a substantial contribution to enhanced operational efficiency.

We will comply with Emission Trading Systems in the upcoming years. If the decision regarding the Fit for 55 is approved, the scope will be expanded and each flight departing from Europe Economic Area will be calculated and offset within this scope. This will lead to a substantial increase in our Incorporation. Nevertheless, it is anticipated that there will be an increase in our flight numbers and also in the allowance prices even if the Fit for 55 package is not approved.

## C11.2

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### (C11.2) Has your organization originated or purchased any project-based carbon credits within the reporting period?

No

## C11.3

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### (C11.3) Does your organization use an internal price on carbon?

Yes

## C11.3a

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### (C11.3a) Provide details of how your organization uses an internal price on carbon.

#### Objective for implementing an internal carbon price

Navigate GHG regulations  
Change internal behavior  
Drive energy efficiency  
Drive low-carbon investment

#### GHG Scope

Scope 1

#### Application

The main objectives to set an Internal Carbon Price are to accelerate low carbon services, fuel efficiency, more use of SAF, and drive financing for R&D projects for developing innovative technologies, products, and services. Turkish airlines were included in the scope of the UK ETS by 2021, and EU ETS was limited to flights departing and landing within the borders of the European Economic Area in 2016 by the European Union. The company fulfills all the necessary notifications under the EU ETS and follows the developments closely. In the ETS schemes, Turkish Airlines is responsible for the Scope 1 emissions caused by jet fuel combustion. In total Scope 1 and Scope 2 emission, carbon emissions caused by jet fuel is 99.58%. A shadow price is considered due to the forecast of the scope of EU ETS might be expanded. Thus, a price of 80 USD is applied per ton of carbon which is the price of EU ETS in the last week of 2021.

#### Actual price(s) used (Currency /metric ton)

80

#### Variance of price(s) used

Turkish Airlines is included in 4 carbon pricing schemes, EU ETS, UK ETS, Switzerland ETS and CORSIA. In 2021, the following corresponding amounts of credits were paid to relevant ETS schemes: EU ETS (EUA): 10,838 UK ETS (UKA): 3,130 Starting from the voluntary phase, Turkish Airlines has accepted the CORSIA requirements for carbon neutralization. As CORSIA stated, CORSIA offsetting requirements for the 2021-2023 period will be calculated each year for the previous year and the 2021-2023 period emission units will be offset in 2025 through the CORSIA implementation timeline. The base year of the CORSIA was designed to be 2019-2020. However, since the emissions in 2020 were very low due to the pandemic, there is an ongoing debate on taking 2019 as the base year. Although not so clear, it will be clarified in the General Assembly to be held in late 2022. In the last week of 2021 in the EU ETS, it was 80 USD/ton and around 80 USD (actual price was in GBP but it is converted in USD here) in the UK ETS. For Corsia eligible carbon offsets, the prices differ between at around 15 USD to 30 USD. However, Corsia offsets will be retired starting from 2025. At present, the price of EU ETS in the last week of the year is used for the internal carbon price.

#### Type of internal carbon price

Shadow price  
Offsets

#### Impact & implication

As part of Turkish Airlines' Carbon Transition Plan, reported climate scenarios have impacted from internal carbon pricing of the company. The shadow price mechanism helps the company's business strategy to better understand the impacts of climate-related risks and financial impacts such as new technology aircraft, emerging regulations, and sustainable fuel alternatives. In the internal strategic planning, this shadow price mechanism helps to identify the calculation of the internal rate of return (IRR) of Capex. Furthermore, in calculating the climate-related risk and the opportunities those IRR calculations help to make better assumptions.

## C12. Engagement

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### C12.1

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#### (C12.1) Do you engage with your value chain on climate-related issues?

Yes, our suppliers  
Yes, our customers/clients  
Yes, other partners in the value chain

### C12.1a

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**(C12.1a) Provide details of your climate-related supplier engagement strategy.**

**Type of engagement**

Innovation & collaboration (changing markets)

**Details of engagement**

Other, please specify (Joint Product Development with Suppliers)

**% of suppliers by number**

2

**% total procurement spend (direct and indirect)**

55.96

**% of supplier-related Scope 3 emissions as reported in C6.5**

97

**Rationale for the coverage of your engagement**

The majority of our CO2 emissions generates from jet fuel consumption. Hence, for Turkish Airlines it is a focal point to partner and to collaborate with suppliers and business partners who are directly involved in flight operations to improve fuel efficiency. In this manner, within the scope of its fuel efficiency program and emissions reduction initiatives, Turkish Airlines engages directly with aircraft and engine manufacturers such as AIRBUS, BOEING, Pratt&Whitney, and Rolls Royce, and communicates actively with these organizations and encourages them on the development of new generation and fuel-efficient aircraft as well as emissions reduction projects. Turkish Airlines engages with airports, and ground handling agents about fuel-saving applications which are Flight Operations Applications, Technical Maintenance Practices and Ground Operations Applications. Our emissions from jet fuel combustion are responsible for 95.5% of total Scope 1 and Scope 2 emissions and well-to-tank emission makes up 91% of total Scope 3 emissions. "Thanks to the "Fuel Savings Project", which we have been carrying out with great effort as the entire company since 2008, our total efficiency has increased by around 20% to date. We have initiated and implemented more than 100 operational optimization projects successfully to reduce our carbon footprint by increasing our fuel efficiency to protect the environment and combat climate change. Some of these projects include the Optimization of auxiliary power units, commissioning of the newly optimized flight planning system, optimization of the routes and aircraft speed, and practices to reduce the aircraft weight (fly away kits, magazines, containers, drinking water, catering equipment), and the aircraft modifications such as winglet and sharklet. In this direction, while investing in new technologies, we are developing our fleet with young, fuel-efficient and more environmentally friendly aircraft. Fuel-efficient aircraft help to reduce carbon emissions better among other emissions reduction activities. The reason for our selection of these suppliers is that they are some of our largest suppliers by spending as Turkish Airlines invests in fuel-efficient aircraft and implements operational optimization projects as part of its fuel-saving policy.

**Impact of engagement, including measures of success**

On the subject of retrofits/upgrades of aircraft, Turkish Airlines engages with suppliers to increase fuel efficiency and reduce CO2 emissions i.e. use of 3,000 Light nets and 2,000 light pallets, sharklets which increased fuel efficiency by 2-3% and reduced CO2 emissions, 2,614 baggage containers were replaced with composite containers, steel brakes were replaced with carbon brakes. In addition to the B787 fleet, which has been flying for the last few years, our wide-body flights have become more efficient with the addition of A350 aircraft, which perform 15-20% more efficient flights. In line with the principle of "continuous improvement" Turkish Airlines is engaged with fuel suppliers in producing more sustainable aviation fuel. With the awareness that Sustainable Aviation Fuel (SAF) plays a key role in reducing carbon emissions caused by the aviation industry, we have started using SAF in our Istanbul Airport - Paris Charles De Gaulle route. We will be using the blend of this fuel, once a week in the first stage, to increase frequencies and different destinations in the following processes. Thanks to the clean combustion realized with the use of sustainable aviation fuel; a reduction of up to 87% in greenhouse gas emissions will be achieved compared to the same amount of traditional kerosene fuel and it will contribute to the reduction of global greenhouse gas emissions. In this context, we support sustainable aviation fuel research and development studies in order to reduce and eliminate the factors that may have an impact on climate change. Turkish Airlines has climate-related requirements as part of the purchasing process. In the service contracts signed with the suppliers, articles regarding the protection of the social rights of the employees and the environment are included. Thus, Turkish Airlines aims to spread its corporate understanding in the environmental and social fields through its commercial partners. "Procurement Planning and Management" training was given to 7 purchasing officers in 2021 in order to increase efficiency in purchasing processes and to enable standardization. Turkish Airlines plans to continue this training in 2022. The measure of success is to maintain those training in the upcoming years.

**Comment**

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**C12.1b**

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**(C12.1b) Give details of your climate-related engagement strategy with your customers.**

**Type of engagement & Details of engagement**

|                               |   |
|-------------------------------|---|
| Education/information sharing | Run an engagement campaign to educate customers about the climate change impacts of (using) your products, goods, and/or services |
|-------------------------------|---|

**% of customers by number**

100

**% of customer - related Scope 3 emissions as reported in C6.5**

0

**Please explain the rationale for selecting this group of customers and scope of engagement**

Turkish Airlines addresses 100% of customers about sustainability as they will help drive our mission of reducing our carbon footprint and combat the climate crisis forward. Consumers' behavioural change toward more sustainable air travel makes a positive impact on our goal to contribute to reducing global GHG emissions. With our various sustainability initiatives, we aim to capture the interests of environmentally conscious travelers, to achieve our targets, engagement with environmentally conscious customers is significant. We are committed to enabling our customers to reach us at all stages of their experience. Feedback channels: Feedback form available on our website Telephone numbers 444 0 849 / +90 850 333 0 849 Our Facebook, Twitter, and Instagram accounts Feedback form available on our in-flight entertainment systems Reports, which filled in by cabin chiefs after each flight Turkish Airlines all domestic and international sales offices Applications of reducing aircraft weight (fly away kits, magazines, containers, drinking water, catering equipment) and directing passengers to access the digital platform. Additionally, because of its efforts to keep up with the digitalizing world and to reduce its environmental impact, Turkish Airlines has stopped sending Miles&Smiles cards. The Miles&Smiles digital card, where customers can use all the advantages and features of the physical card, can be accessed through the mobile application. With this digital card application the use of 2.35 million ecological cards, 1.92 million ecological envelopes, and 1.92 million ecological papers were prevented. Turkish Airlines is constantly enhancing its sustainability offerings, one of them is the mobile boarding pass which can be easily used through customers' smartphones. Passengers who have their Turkish Airlines mobile boarding passes can quickly complete their transactions by scanning the barcodes on their mobile boarding passes. In line with its sustainability strategy, Turkish Airlines offers all its passengers in-flight sustainability practices which are: with all travel and toy sets being offered without any plastic packaging, millions of plastics are avoided on its flights.

**Impact of engagement, including measures of success**

In the Customer Experience Survey conducted by Fast Company magazine for the second time in 2021 in conjunction with Turkcell Global Bilgi, a total of 6,319 people were interviewed, and the best of each sector was determined with some 15,130 brand evaluations. Once again, Turkish Airlines ranked first in its sector. The measure of success is to maintain this ranking in the coming years. Additionally, thanks to applications of reducing aircraft weight (fly away kits, magazines, containers, drinking water, catering equipment) and directing passengers to access the digital platform, Turkish Airlines reduces its carbon footprint. Our environmentally friendly biodegradable packaging and eco-friendly toy project were awarded the "Gold" status in the "Sustainable Packaging Initiative" and "Children Wellness Initiative" categories in the Travel Plus "2021 Amenities Initiatives competition. With the removal of combs and shoehorns from travel kits, the use of 26,594 kg of plastic waste was prevented. With all travel and toy sets being presented without any plastic packaging, the use of 17,935,026 plastic bags weighing 13,298.01 kg in total in 2020 and 2021 was prevented. As a result of the independent audits carried out by APEX under the consultancy of YATES+ based on the criteria of health safety, service quality and sustainability, our brand became the winner of the World Class Award – granted to only seven airlines in the world. Launched in 2022, World Class airlines have attained international standards of safety well-being, sustainability, service and inclusiveness as evaluated by industry professionals. Turkish Airlines is pleased to be recognized with this award for the first time for its long-held understanding that prioritizes harmony and respect for the environment and never compromises on its quality of service.

**C12.1d**

**(C12.1d) Give details of your climate-related engagement strategy with other partners in the value chain.**

It shares its objectives and actions which are shaped within the axis of our material issues and its annual progress with all its stakeholders and the public via its reports. In the 2021 reporting process, firstly the material issues were identified. A subject universe consisting of the ones which might be important to the aviation sector was formed. While creating it, both main topics and sub-topics were included by using the contents of reporting frameworks such as WEF, GRI, SASB, TCFD, 17SDGs of UN, sectoral and competitor practices as well as stakeholder expectations. The identified issues were evaluated via online TR-EN surveys with external stakeholders, members of working groups, company executives and employees in various categories of THY. Surveys reached total 1731 executives and employees and 369 external stakeholders. To the surveys prepared in TR 1287 executives and employees; 151 external stakeholders; 147 executives and employees and 130 external stakeholders gave full answers to survey in EN. The results were evaluated in a workshop where a training session was held, also in which sustainability mngmnt and reporting were discussed, with a team of nearly 100 executives who are members of THY Sustainability Working Group, executives from various units. As a result, the tables of material issues, SDGs and stakeholders were finalized. In 2021, THY was entitled to be included in the BIST Sustainability Index. It transparently reports its metrics regarding governance structure, strategy, risk-opportunity mngmnt methods, budget & carbon emissions related to climate change, to institutional investors & the public. THY uses various channels to engage with its internal stakeholders including shareholders/financial partners/investors and employees as well as external stakeholders including government, certification bodies, business partners, customers, suppliers, communities, NGOs & academic institutions. THY pays strict attention to meet the information demands of institutional investors. As such, investor day events were held. 4 investor conferences, 90 teleconferences & over 100 individual/corporate investor meetings and 4 investor calls were held. 4 teleconferences were organized throughout the year on the results of the financial statements. It holds meetings, has written correspondences and calls occasionally with the institutional investors regarding climate-related issues. Pursuant to the Capital Market Board Corporate Governance Communique THY is subject to disclose the Corporate Governance Compliance Report on the Public Disclosure Platform. As the airline flying to most countries from a single hub, THY engages with IGA through the lease agreement. THY is required to meet the environmental & sustainability requirements in the agreement. The requirements consist of certain topics such as Waste Mngmnt including waste recycling and disposal, ISO 14001 EMS, ISO 14064, Air Quality Mngmnt, Water & Wastewater, Noise & Land Pollution Mngmnt. On top, THY is required to present the environmental progress report to IGA each month. It engages with IGA through its airside operations as well as landside operations which respond to the increasing flight traffic by maintaining the highest level of safety while maximizing the existing runway and taxiway capacity, making ground operations more efficient and environmentally friendly with sustainable methods in the systems and procedures required to monitor runway and apron traffic. To that end, A-SMGCS/EFS/ DCL system which covers the entire airside operation area, was established & put into operation as an air traffic tower. A-SMGCS is more than a set of systems, consists of many integral systems and chains of operational rules to ensure situational awareness of controllers. Advanced applications involving all operational processes of controllers include safety nets, collision avoidance and resolution functions as well as planning and guidance functions for all airside users (ATCo, pilots, ground handling services.) It provides the position, identity, tracking of aircraft and ground vehicles & aims to improve the safety and efficiency of ground motion operations, notably during low visibility conditions. THY engages with ATC/ATM Providers to improve its infrastructure through ATC operations (Separation, Use of Airspace effectively) which cover the SESAR Project, Military Airspace and Route Optimization. Under the Aerodrome Infrastructure improvements, there are new parking areas/taxiways, Assessment of Service Providers' Equipment. THY strives to improve the air traffic mngmnt system in close collaboration with both domestic and international air navigation service providers. Besides a team always busy researching the most appropriate flight routes, a committee was formed including many departments, to be assigned to the SESAR project. Among other infrastructure projects carried out to increase operational efficiency, there are many airport imprvmnt activities such as the construction of new parking areas and utilization of the airspace better through the improved approach procedure.

**C12.2**

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**(C12.2) Do your suppliers have to meet climate-related requirements as part of your organization's purchasing process?**

Yes, climate-related requirements are included in our supplier contracts

**C12.2a**

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**(C12.2a) Provide details of the climate-related requirements that suppliers have to meet as part of your organization's purchasing process and the compliance mechanisms in place.****Climate-related requirement**

Complying with regulatory requirements

**Description of this climate related requirement**

The supplier will fulfil the Environmental Legislation, and national and international requirements that it is obliged to comply with. If deemed necessary by Turkish Airlines, Turkish Airlines will be able to carry out audit/quality control to Supplier within the scope of the management system documents of Turkish Airlines and applicable national/international rules. In pursuant to the findings determined because of these audits/quality controls, corrections/requirements may be requested from the Supplier by Turkish Airlines. Supplier is obliged to fulfil the requested corrections/requirements within time periods. If the Supplier does not fulfil the corrections/requirements, Turkish Airlines has the right to apply the penalties included in the Contract. If requested by Turkish Airlines, the Supplier is obliged to submit all the information/documents that it has issued on environmental issues. If applicable, the Supplier shall submit ISO 14001 Environmental Management System or EMAS (Eco-Management and Audit Scheme) or IEnvA (IATA Environmental Assessment) Certificates. If applicable, the Supplier shall submit the life cycle analysis of the relevant products/goods and its Zero Waste Certificate. As stated in the Zero Waste Regulation, Suppliers must act in accordance with the prevention of waste generation. If the waste generation cannot be prevented, the amount of waste must be minimized and the purchase of products that will prevent waste must be encouraged by the Supplier.

**% suppliers by procurement spend that have to comply with this climate-related requirement**

100

**% suppliers by procurement spend in compliance with this climate-related requirement**

100

**Mechanisms for monitoring compliance with this climate-related requirement**

Supplier self-assessment

**Response to supplier non-compliance with this climate-related requirement**

Retain and engage

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**C12.3**

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**(C12.3) Does your organization engage in activities that could either directly or indirectly influence policy, law, or regulation that may impact the climate?****Row 1****Direct or indirect engagement that could influence policy, law, or regulation that may impact the climate**

Yes, we engage directly with policy makers

Yes, we engage indirectly through trade associations

Yes, we engage indirectly by funding other organizations whose activities may influence policy, law, or regulation that may significantly impact the climate

**Does your organization have a public commitment or position statement to conduct your engagement activities in line with the goals of the Paris Agreement?**

Yes

**Attach commitment or position statement(s)**

turkish-airlines-2020-sustainability-report\_21\_12\_2021.pdf

thy\_annual-report\_2021.pdf

**Describe the process(es) your organization has in place to ensure that your engagement activities are consistent with your overall climate change strategy**

In the attached Sustainability Report on page 32, the stakeholder engagement methodology is published. In light of its responsible business approach, Turkish Airlines adopted the targets determined by the International Air Transport Association (IATA), and work devotedly to provide a contribution to such targets. Additionally, Turkish Airlines created an extensive fuel efficiency program to provide a contribution to the collective efforts exerted across the entire industry against climate change. Fuel Executive Committee, formed as part of this program, regularly provides information to the CEO about fuel efficiency performance, one of the indicators Turkish Airlines follows as part of its combat against climate change. Furthermore, as of 2019, our greenhouse gas emissions have been verified by a third-party independent verification body authorized by ICAO, and our work will continue within the scope of CORSIA requirements. In the following years, we will neutralize our emissions remaining above the base year emission values with the carbon credits to be obtained from the projects in line with the CORSIA Draft. ICAO has welcomed the timely and ambitious target adopted by the international air industry to achieve net-zero carbon emissions by 2050, in this regard, Turkish Airlines continuously increases its fuel efficiency and implement comprehensive fuel-saving policies for making contributions to such targets. On the other hand, within the scope of the Paris Agreement, Türkiye has set a net-zero carbon target by 2053. Among the policies planned to be implemented with INDC, there are items affecting aviation related to the transportation sector (increasing the use of alternative fuel and clean vehicles, implementation of green port and airport projects for energy efficiency). With Türkiye's ratification of the Paris Agreement in 2021 and committing to reaching net-zero in carbon emissions by 2053, we review our strategies by considering the agreements to which our country is a signatory, global requirements, and the expectations of our stakeholders. By acting in accordance with the regulations and aviation industry rules, with which we are liable to comply, we aim to go beyond compliance with the laws where applicable.

**Primary reason for not engaging in activities that could directly or indirectly influence policy, law, or regulation that may impact the climate**

<Not Applicable>

**Explain why your organization does not engage in activities that could directly or indirectly influence policy, law, or regulation that may impact the climate**

<Not Applicable>

**C12.3a**

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**(C12.3a) On what policy, law, or regulation that may impact the climate has your organization been engaging directly with policy makers in the reporting year?**

**Focus of policy, law, or regulation that may impact the climate**

Mandatory climate-related reporting  
Verification and audits

**Specify the policy, law, or regulation on which your organization is engaging with policy makers**

The Directorate General of Civil Aviation (DGCA) of Türkiye

**Policy, law, or regulation geographic coverage**

National

**Country/region the policy, law, or regulation applies to**

Turkey

**Your organization's position on the policy, law, or regulation**

Support with no exceptions

**Description of engagement with policy makers**

Directorate General of Civil Aviation (DGCA), which is responsible for regulating the civil aviation sector within the scope of national and international legislation, has put into effect the most comprehensive legislative work in the history of civil aviation with 46 legal regulations that it has implemented in 2012. Türkiye is shown as the only country that can establish a civil aviation sector operating in accordance with international rules and standards in such a fast and sustainable way, with 172 civil aviation regulations published in a ten-year period following the opening of civil aviation activities to the private sector. Its legislative studies carried out to ensure the sustainable development of civil aviation with flight safety and security, and to carry out civil aviation activities in accordance with international rules and standards, will continue according to the needs of the aviation sector. The opinions and suggestions of the aviation sector players about the legislation are welcomed at the address of legislation(at)shgm.gov.tr. To regulate the procedures & principles regarding the monitoring, reporting and verification of GHG emissions arising from national and international aviation activities, "Regulation on the Monitoring of GHG Emissions Originating from Aviation Activities" was published on 22/03/2022. Within the scope of the regulation, the monitoring, reporting and verification stages of both our national and international flights will be carried out over a common software - DMS (Data Management System). We will report and verify all our monitored emissions through DMS and conduct it to our national authority, the General Directorate of Civil Aviation (DGCA). In this context, Turkish Airlines voluntarily supported the pilot phase of the project and conveyed its positive/negative views to the stakeholders of the project, which will benefit the system improvement. Additionally, after the release of the Regulation on the Monitoring of GHG Emissions Originating from Aviation Activities procedure, upon the implementation and improvement of DMS, Turkish Airlines has engaged with DGCA, TSE, TURKISH ACCREDITATION AGENCY (TURKAK), T.C. Ministry of Environment, Urbanisation and Climate Change. In the workshop, examples of international best practices were presented to the related authorities.

**Details of exceptions (if applicable) and your organization's proposed alternative approach to the policy, law or regulation**

<Not Applicable>

**Have you evaluated whether your organization's engagement is aligned with the goals of the Paris Agreement?**

Yes, we have evaluated, and it is aligned

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**C12.3b**

**(C12.3b) Provide details of the trade associations your organization engages with which are likely to take a position on any policy, law or regulation that may impact the climate.**

**Trade association**

International Air Transport Association

**Is your organization's position on climate change consistent with theirs?**

Consistent

**Has your organization influenced, or is your organization attempting to influence their position?**

We publicly promote their current position

**State the trade association's position on climate change, explain where your organization's position differs, and how you are attempting to influence their position (if applicable)**

The International Air Transport Association (IATA) 77th Annual General Meeting approved a resolution for the global air transport industry to achieve net-zero carbon emissions by 2050. This commitment will align with the Paris Agreement goal for global warming not to exceed 1.5°C. <https://www.iata.org/en/pressroom/2021-releases/2021-10-04-03/> Turkish Airline actively participates in IATA Committees below: --IATA (The International Air Transport Association) Environmental Oversight Council: The IATA Environmental Assessment (IEnvA) Oversight Council (EOC) will act as an advisor to the Sustainability and Environmental Advisory Council (SEAC), other relevant IATA bodies and IATA management on all matters related to the IEnvA Program and Environmental Management Systems, in general. It will also indicate how to implement those measures in a rational, coordinated and cost-effective manner. --IATA (The International Air Transport Association) Sustainability Environmental Advisory Council: The Sustainability and Environment Advisory Council (SEAC) advises the Board of Governors, the IATA Director General, and other IATA bodies on all matters related to the sustainable development of aviation and its interface with the environment and acts as the focal point in IATA on sustainability and environment issues. --SEAC Environmental Data Working Group: The aim of the working group is to identify a transparent and comparable sectoral methodology standard with a single, consistent industry best practices approach for calculating CO2 emissions per passenger among the different calculation methodologies available for passengers in the sector. The working Group convened 8 times in a 6 months period. As a member, on behalf of Turkish Airlines, an expert from Corporate Sustainability Management participates actively in EOC. --TIACA (The International Air Cargo Association) Sustainability Working Group: We are the first air cargo carrier to participate in the Air Cargo Sustainability Program run by the International Air Cargo Association (TIACA) in order to work with other stakeholders in the industry on issues such as carbon footprint, new technologies, process development, innovation and training. The TIACA Sustainability Working Group connects air cargo stakeholders of any size, in any sector, located anywhere but with a common objective to drive sustainability initiatives in the industry.

**Funding figure your organization provided to this trade association in the reporting year, if applicable (currency as selected in C0.4) (optional)**

**Describe the aim of your organization's funding**

<Not Applicable>

**Have you evaluated whether your organization's engagement with this trade association is aligned with the goals of the Paris Agreement?**

Yes, we have evaluated, and it is aligned

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**C12.3c**

**(C12.3c) Provide details of the funding you provided to other organizations in the reporting year whose activities could influence policy, law, or regulation that may impact the climate.**

**Type of organization**

Other, please specify (Global aviation alliance)

**State the organization to which you provided funding**

Star Alliance

**Funding figure your organization provided to this organization in the reporting year (currency as selected in C0.4)**

0

**Describe the aim of this funding and how it could influence policy, law or regulation that may impact the climate**

Sustainability is an increasingly critical dimension of our industry and – importantly – the expectations of our customers. As the first and largest global airline alliance, Star Alliance has an important role to play in facilitating a global transition through both advocating change and leading by example. Working with partners inside and outside of the aviation industry, member airlines have accelerated research and development and have implemented meaningful changes to foster a sustainable and assured future for the aviation sector. As the largest airline alliance, Star Alliance has an important role to play in facilitating the global transition through leading by example and advocating for change. By providing funding to the Star Alliance, Turkish Airlines aims to contribute to the global combat the climate change. For their part in reducing these emissions, Star Alliance member airlines participate in initiatives such as the International Civil Aviation Organisation’s (ICAO) Carbon Offsetting and Reduction Scheme for International Aviation (CORSA) and have signed on to industry targets on fuel efficiency and carbon emissions such as those set by the International Air Transport Association (IATA). Some important measures being undertaken are: • Reducing CO2 emissions through fuel savings generated by operating modern and efficient aircraft, weight reduction on aircraft and efficient flight paths • A transition from fossil fuel to sustainable alternative fuels and biofuels. •Offering passengers, the opportunity to offset carbon emissions voluntarily. •Electrification of airport vehicles to reduce emissions from ground and infrastructure. •Carbon sequestration to reduce greenhouse gas emissions. As Turkish Airlines, we take an active role in the Star Alliance Sustainability Virtual Expert Community. The Sustainability Committee’s primary objective is to develop the Alliance’s sustainability framework that encompasses a myriad of creative, feasible and realistic ideas, and to create plans to implement in the short and medium term. On behalf of Turkish Airlines, Corporate Sustainability Manager actively participates in the Star Alliance Sustainability Committee Meeting, which is held periodically (4 times a year), where members share good practice examples, sectoral developments and projects that can be developed through alliance connections.

**Have you evaluated whether this funding is aligned with the goals of the Paris Agreement?**

Yes, we have evaluated, and it is aligned

**C12.4**

**(C12.4) Have you published information about your organization’s response to climate change and GHG emissions performance for this reporting year in places other than in your CDP response? If so, please attach the publication(s).**

**Publication**

In mainstream reports

**Status**

Complete

**Attach the document**

thy\_annual-report\_2021.pdf

**Page/Section reference**

Governance - Page 130 Strategies and Strategic Focuses - Page 32 Risks & opportunities - Page 127 Emissions - Page 153 Emission Targets - Page 99 and Page 113

**Content elements**

Governance

Strategy

Risks & opportunities

Emissions figures

Emission targets

**Comment**

**C15. Biodiversity**

**C15.1**

**(C15.1) Is there board-level oversight and/or executive management-level responsibility for biodiversity-related issues within your organization?**

|       | Board-level oversight and/or executive management-level responsibility for biodiversity-related issues | Description of oversight and objectives relating to biodiversity   | Scope of board-level oversight |
|-------|--|--|--------------------------------|
| Row 1 | Yes, both board-level oversight and executive management-level responsibility                          | Turkish Airlines signed the “United for Wildlife Buckingham Palace Declaration (UFW)”, which aims to prevent the illegal trade of wild animals supported by IATA and raise sectoral awareness on this issue, to prevent illegal trade of wild animal parts such as ivory, rhino horn, tortoiseshell and raise awareness. | <Not Applicable>               |

**C15.2**

**(C15.2) Has your organization made a public commitment and/or endorsed any initiatives related to biodiversity?**

|       | Indicate whether your organization made a public commitment or endorsed any initiatives related to biodiversity | Biodiversity-related public commitments   | Initiatives endorsed |
|-------|---|---|----------------------|
| Row 1 | Yes, we have made public commitments and publicly endorsed initiatives related to biodiversity                  | Other, please specify (United for Wildlife Buckingham Palace Declaration (UFW)) | SDG                  |

**C15.3**

**(C15.3) Does your organization assess the impact of its value chain on biodiversity?**

|       | Does your organization assess the impact of its value chain on biodiversity?           | Portfolio        |
|-------|--|------------------|
| Row 1 | Yes, we assess impacts on biodiversity in both our upstream and downstream value chain | <Not Applicable> |

**C15.4**

**(C15.4) What actions has your organization taken in the reporting year to progress your biodiversity-related commitments?**

|       | Have you taken any actions in the reporting period to progress your biodiversity-related commitments? | Type of action taken to progress biodiversity-related commitments |
|-------|---|---|
| Row 1 | Yes, we are taking actions to progress our biodiversity-related commitments                           | Education & awareness   |

**C15.5**

**(C15.5) Does your organization use biodiversity indicators to monitor performance across its activities?**

|       | Does your organization use indicators to monitor biodiversity performance? | Indicators used to monitor biodiversity performance |
|-------|--|---|
| Row 1 | Yes, we use indicators   | State and benefit indicators                        |

**C15.6**

**(C15.6) Have you published information about your organization's response to biodiversity-related issues for this reporting year in places other than in your CDP response? If so, please attach the publication(s).**

| Report type  | Content elements   | Attach the document and indicate where in the document the relevant biodiversity information is located |
|--|--|---|
| In voluntary sustainability report or other voluntary communications | Content of biodiversity-related policies or commitments<br>Impacts on biodiversity<br>Details on biodiversity indicators | Page 64.<br>turkish-airlines-2020-sustainability-report_21_12_2021.pdf                                  |

**C16. Signoff**

**C-FI**

**(C-FI) Use this field to provide any additional information or context that you feel is relevant to your organization's response. Please note that this field is optional and is not scored.**

**C16.1**

**(C16.1) Provide details for the person that has signed off (approved) your CDP climate change response.**

|       | Job title                     | Corresponding job category    |
|-------|-------------------------------|-------------------------------|
| Row 1 | Chief Executive Officer (CEO) | Chief Executive Officer (CEO) |

**SC. Supply chain module**

## SC0.0

(SC0.0) If you would like to do so, please provide a separate introduction to this module.

N/A

## SC0.1

(SC0.1) What is your company's annual revenue for the stated reporting period?

|       | Annual Revenue |
|-------|----------------|
| Row 1 | 10686000000    |

## SC1.1

(SC1.1) Allocate your emissions to your customers listed below according to the goods or services you have sold them in this reporting period.

**Requesting member**  
McKinsey & Company, Inc.

**Scope of emissions**  
Scope 1

**Allocation level**  
Company wide

**Allocation level detail**  
<Not Applicable>

**Emissions in metric tonnes of CO<sub>2</sub>e**  
1474.15

**Uncertainty (±%)**  
4.29

**Major sources of emissions**  
Consumption of Jet A1

**Verified**  
Yes

**Allocation method**  
Other, please specify (Allocation based on revenue)

**Market value or quantity of goods/services supplied to the requesting member**  
1170092

**Unit for market value or quantity of goods/services supplied**  
Currency

**Please explain how you have identified the GHG source, including major limitations to this process and assumptions made**  
The vast majority of our emissions come from our aviation fuels. So we selected to allocate our scope 1 emissions.

## SC1.2

(SC1.2) Where published information has been used in completing SC1.1, please provide a reference(s).

N/A

## SC1.3

(SC1.3) What are the challenges in allocating emissions to different customers, and what would help you to overcome these challenges?

| Allocation challenges | Please explain what would help you overcome these challenges |
|-----------------------|--|
| We face no challenges |  |

## SC1.4

(SC1.4) Do you plan to develop your capabilities to allocate emissions to your customers in the future?

No

## SC1.4b

(SC1.4b) Explain why you do not plan to develop capabilities to allocate emissions to your customers.

N/A

## SC2.1

(SC2.1) Please propose any mutually beneficial climate-related projects you could collaborate on with specific CDP Supply Chain members.

**Requesting member**

McKinsey & Company, Inc.

**Group type of project**

New product or service

**Type of project**

New product or service that reduces customers operational emissions

**Emissions targeted**

Actions that would reduce both our own and our customers' emissions

**Estimated timeframe for carbon reductions to be realized**

0-1 year

**Estimated lifetime CO2e savings**

**Estimated payback**

0-1 year

**Details of proposal**

As the most important cause of climate change, one of the global problems today, is greenhouse gas emissions. According to the Intergovernmental Panel on Climate Change (IPCC), the aviation industry generates approximately 2% of the world's man-made emissions of carbon dioxide (CO2) also which is one of the hardest industries to decarbonize. If no action is taken, this rate might increase further due to the increase in global air traffic. Thereby, improving sustainability is important to most airlines, their passengers, and – most of all – to the planet. In this manner, Turkish Airlines considers reducing its impact in this context as a fundamental component of its sustainability understanding. As Turkish Airlines, we have a strong track record of identifying and implementing initiatives to reduce our carbon emissions. Owing to our comprehensive fuel efficiency program, investments in next-generation and fuel-efficient aircraft, by the use of sustainable aviation fuel, Turkish Airlines aspires to manage these challenges brought by the mounting impacts of the climate crisis. Also, Turkish Airlines is fully aware of the fact that the global climate crisis can not be overcome solely, it needs collaboration with the stakeholders, customers, and all. In line with this awareness, we believe that joint climate-related projects related to sustainable aviation fuel can be realized with our customers to overcome the global climate crisis.

## SC2.2

(SC2.2) Have requests or initiatives by CDP Supply Chain members prompted your organization to take organizational-level emissions reduction initiatives?

No

## SC4.1

(SC4.1) Are you providing product level data for your organization's goods or services?

No, I am not providing data

## Submit your response

In which language are you submitting your response?

English

Please confirm how your response should be handled by CDP

|                                       | I understand that my response will be shared with all requesting stakeholders | Response permission |
|---------------------------------------|---|---------------------|
| Please select your submission options | Yes   | Public              |

Please confirm below

I have read and accept the applicable Terms